

**VENEZUELA: ANATOMY OF A COLLAPSE**

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## CHAPTER 1: Introduction

Ricardo Hausmann and Francisco Rodríguez

“on the western tip there is a fountain of an oily liquor next to the sea...some of those who have seen it say that it is called *stercus demonis* [devil’s excrement] by the naturals.”

Gonzalo Fernández de Oviedo y Valdés (1535)<sup>1</sup>

The twentieth century saw the transformation of Venezuela from one of the poorest to one of the richest economies in Latin America. Between 1900 and 1920, per capita GDP had grown at a rate of barely 1.8 percent; between 1920 and 1948, it grew at 6.8 percent per annum. By 1958, per capita GDP was 4.8 times what it would have been had Venezuela had the average growth rate of Argentina, Brazil, Chile and Peru.<sup>2</sup> By 1970, Venezuela had become the richest country in Latin America and one of the twenty richest countries in the world, with a per capita GDP higher than Spain, Greece, and Israel and only 13% lower than that of the United Kingdom.<sup>3</sup>

In the 1970s, the Venezuelan economy did an about face. Per capita non-oil GDP declined by a cumulative 18.64% between 1978 and 2001. Because this period was associated with growth in labor force participation, the decline in per worker GDP was even higher: 35.6% in the twenty-three year period. The oil

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<sup>1</sup> Cited by Martínez (1997).

<sup>2</sup> All calculations are based on Maddison (2001).

<sup>3</sup> Heston, Summers and Aten(2002).

sector's decline was even more pronounced: 64.9% in per capita terms, 49.2% in per worker terms from its 1970 peak.

Venezuela's development failure has made it a common illustration of the "resource curse" – the hypothesis that natural resources can be harmful for a country's development prospects. Indeed, Venezuela is one of the examples Sachs and Warner (1999, p. 2) use to explain the idea that resource-abundant economies have lower growth. But Venezuela's growth experience has not only been used to illustrate the deleterious effect of resource rents. Easterly (2001, p. 264), for example, cites the Venezuelan decline in GDP in support of the idea that inequality is harmful for growth. Becker (1996), in contrast, has argued that the same growth performance actually shows that economic freedom is essential for growth.

How much do we really know about what caused the Venezuelan growth collapse? In our view, a minimal requirement of any explanation for Venezuela's dismal growth performance must pass two basic tests. On the one hand, it must explain why Venezuela has had such a disappointing growth performance in comparison to the rest of Latin America. On the other hand, it must explain why Venezuela did so poorly after the 1970s when it had been able to do so well in the previous fifty years.

Many existing explanations do not pass these tests. For example, Venezuela's failure to grow is often attributed to its lack of progress in carrying out free-market reforms during the eighties and nineties. While Venezuela is indisputably far from a stellar reformer, existing data do not support the hypothesis that it is substantially different from many other countries in the

region in this respect (at least until 1999). According to Eduardo Lora's (2001) index of economic reform, the Venezuelan economy by 1999 was more free market-oriented than the economies of Mexico and Uruguay, and its speed of reform (in terms of proportional improvement in the index) was actually the median for the region between 1985 and 1999. Lack of reforms thus does not appear to be a promising explanation for Venezuela's lack of growth.

Alternatively, consider the hypothesis that Venezuela's growth problems are due to the exacerbated rent-seeking that was generated by the concentration of high resource rents in the hands of the state. If this explanation is correct, then how do we account for the fact that Venezuela was the region's fastest-growing economy between 1920 and 1970, a period during which the role of oil was dominant and fiscal oil revenues were significantly higher than during the nineties? Why were corruption, patronage politics, and rent-seeking not a hindrance to development during Venezuela's golden age of growth?

The purpose of this volume is to present a critical analysis of the Venezuelan growth experience and to attempt to offer new explanations of the enigma of the country's economic collapse. It is a collective undertaking by economists and political scientists to attempt to gain insight into the causes of Venezuela's growth performance by systematically analyzing the contribution of each potential factor in the country's growth performance. Each chapter consists of an in-depth analysis of one dimension of the growth collapse, ranging from labor markets to infrastructure provision to the political system. While each chapter reflects the vision and analysis of the authors, they are shaped by the interaction and discussion between project participants that took place in two

conferences held in Caracas in 2004 and in Cambridge in 2006 sponsored by the Center for International Development and the David Rockefeller Center for Latin American Studies at Harvard University, the Andean Development Corporation, and the Instituto de Estudios Superiores de Administración.

### **Toward Within-Country Growth Empirics**

This project also represents an attempt to move towards systematic country-level studies of development experiences that are rigorous and informed by economic theory but that pay due attention to national specificities and idiosyncrasies. Since the publication of Barro's (1991) seminal contribution to the empirical growth literature, econometric studies in the field of economic growth have been concentrated on the use of cross-national data to evaluate different hypotheses of the causes of long-run growth. Despite the significant contribution of this literature to our understanding of the process of economic development, there has been a growing awareness of the limitations of cross-country economic data to help us understand why some countries are rich and others are poor (Rodrik, 2005). Internationally comparable country-level data are necessarily limited in their scope and depth. Many of the potential explanatory factors that could account for differential growth performances are difficult to quantify for a large number of countries. Issues of endogeneity and specification tend to plague cross-country regression work.

While many of these problems are not unique to analysis of cross-national data sets, there is a set of distinct methodological problems which do appear to be

more characteristic of the study of economic development with the aid of empirical growth data. Foremost among them is the problem of dealing with real world complexity. The workhorse linear growth regression embodies a particular vision of the world according to which there is an underlying similarity between all of the countries that are included in the sample, and in which all possible interactions between policies, institutions, and economic structure are assumed away.

In contrast, designing a growth strategy is somewhat like getting to the peak of a mountain that is covered by clouds. You can't see where the peak is. You may not even know what direction it is in. All you know is that if you go up, there is some probability that you are ascending the peak. The project of cross-country growth empirics can be seen as the project of constructing a map that will allow us to get to the peak of that mountain. The problems encountered in that literature indicate that we may not have a reliable map for some time to come. So the relevant policy question becomes: what do you do if you don't have a map? Or if you have one but you realize it's not a very good map?

One answer, recently given by Hausmann, Rodrik, and Velasco (2004), relies on exploiting local instead of global information. In the context of our metaphor, if you want to get to the peak you should try to infer where you are from careful observation of the vegetation, the terrain, the flow of rivers, and just about any other observable characteristic allows you to make an inference. These authors develop this idea in the context of the design of growth strategies under radical uncertainty. They call their method "growth diagnostics" in part because it is very similar to the approach taken by medical specialists in identifying the causes



of health ailments – a context in which assuming that everyone has the same problem is unlikely to be very helpful. The idea is to look for clues in your immediate environment as to what may be the binding constraints on growth.

The growth diagnostics exercise consists in asking a set of basic questions to rule out possible explanations of the problem. The answer to these questions is inherently country- and time-specific, as one cannot assume that different units of observation – be they countries or persons – are always affected by the same ills. The essential idea is to identify the key problem that you are interested in attacking as well as the signals that the economy would provide if a particular constraint were the cause of that problem. If the economy suffers from signs of low investment and entrepreneurship, you want to start out by asking whether this is due to the fact that returns are not attractive, or that credit is very costly. If the latter were the cause, you would expect to see signs of high costs of finance. If, in contrast, you find that returns are not attractive, you may want to delve deeper into the issue: are the actual rates of return low, or is the problem that investors don't think they will be able to keep the returns from their activity with certainty? Is this due to political risk of expropriation, lack of enforcement of laws, or to market failures? The process goes on until one identifies the constraints that are likely to give you the highest local increase in growth.

An alternative attack on the issue of complexity has been undertaken by Rodríguez (2007a), who asks whether there is an effective way of using the cross-national data to understand the potential effects of different components of reform strategies on economic growth without assuming that the world is unrealistically simple – as the linear growth regression framework invariably

does. He uses non-parametric econometrics to capture the key very general features of the complex reality embodied in growth relationships. The essence of those methods is that instead of asking whether a policy such as trade is good for growth – a question that simply lacks a well-defined answer in a complex world – it asks more general questions such as: does the effect depend on other variables? Is it at least not harmful for growth? Does the “average” country benefit or lose out from trade protection?

Rodríguez’s empirical analysis comes up with some interesting results. One is that growth regressions often tend to exaggerate the effects of changes in independent variables in relation to more flexible methods that do not impose unrealistic restrictions. But this exaggeration is not uniform across different types of explanatory variables. In fact, the relative importance of different variables changes dramatically when we go from the restrictive linear approach to the more flexible nonparametric approach. Policy variables become much less significant, while structural and institutional variables become much more significant in accounting for changes in growth.

A third approach to dealing with issues of real world complexity in the empirical analysis of economic growth is to reduce the number of experiences that one tries to fit into a common framework. If the weakness of cross-country growth empirics is essentially that it attempts to bundle countries whose development processes are fundamentally different, then one natural approach is to unbundle countries and to look at either groups of countries with similar characteristics or at single countries at a time. Hausmann, Rodrik and Pritchett (2004) and Hausmann, Rodríguez, and Wagner (2007) have concentrated

alternatively on cases of growth accelerations and collapses in searching for common explanatory factors that can help explain why these phenomena occur and what determines variations in their evolution.

This book is an example of the unbundling strategy taken to its ultimate consequences: the exclusive concentration on understanding the phenomenon of growth in one country during a particular historical time period. We make no claim to rediscovering the wheel: there is a long tradition of case study literature in economic growth (e.g., Leff (1972), Gelb (1985), Wade (1990)). We believe, however, that the contribution of our approach lies in the fact that it is informed by growth theory and does not eschew the systematic analysis of empirical evidence and the use of analytical models. Each of the papers in this study puts forwards a set of well-defined hypotheses about the relationship between its issue of interest and the country's growth experience. It uses the empirical evidence to evaluate them and to contribute a piece to the explanation of the fuller puzzle.

This paper is also part of a broader project, in which we have undertaken similar efforts to understand the cases of growth collapses suffered since the 1970s in two other Andean economies: Bolivia and Perú.<sup>4</sup> The basic idea was to look at countries that were marked by similarities in some of their initial conditions – such as high levels of resource dependence and similar geographical location – and that also experienced similar economic outcomes. However, we did not straitjacket the analyses into a common analytical framework, but rather decided to let researchers come up with independent explanations – an

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<sup>4</sup> See Hausmann, Morón and Rodríguez (2007) and Gray, Hausmann, and Rodríguez (2007).

experiment that emerged with some striking similarities as well as surprising differences.<sup>5</sup>

In this sense, we believe that it is possible to develop an analytical toolkit that allows growth economists to systematically analyze and evaluate competing hypotheses about growth at the country level. Our work is thus fully in the spirit of Rodrik's (2002) call for the elaboration or design of analytical country narratives of development experiences. We view this line of research as taking the first steps in the development of a within-country growth empirics that serves as a rigorous alternative to the problems of the existing empirical literature in economic growth.

## **Questions and Answers**

The key organizing principle of this work starts out from one basic question that we asked each of the project participants: to what extent is what occurred in your area of study a cause of the country's economic collapse, and to what extent is it a consequence? Authors approached this question with differing methodologies and produced different answers. Some argued for a vital causal role of their sector. Others argued that their sector was not a relevant contributing factor to the country's growth performance. And others yet argued for a mutually reinforcing set of feedback loops between growth and their area of study.

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<sup>5</sup> These are explored in more detail in Rodríguez (2007b)

What emerges is a complex, nuanced vision of Venezuelan economic growth that goes considerably beyond the conventional wisdom. It is far from uncausal – indeed it emphasizes several contributing factors. At the same time, however, it is far from an “anything goes” explanation: our set of contributing factors is much smaller than the set of variables that we initially considered. Our collective undertaking has thus served as a mechanism that allows us to reach a solution that emulates Einstein’s recommendation that theories should “make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience.” (1933, p. 10-11).

The logical starting point for an explanation of the Venezuelan collapse is an evaluation of the country’s aggregate growth performance. This is the task carried out by Hausmann and Rodríguez in “Why Did Venezuelan Growth Collapse?” That paper starts out by quantifying the extent of the collapse and the ways in which one would attempt to account for it in the context of an aggregate growth model. The authors reach a simple conclusion: Venezuela’s growth performance can be accounted for as the consequence of three forces. One is declining oil production. The second is declining non-oil productivity. The third is the incapacity of the economy to move resources into alternative industries as a response to the decline in oil rents that has occurred since the seventies. The authors then concentrate on this second factor, asking why Venezuela found it so difficult to develop an alternative export industry, in contrast to other countries that suffered declines in their traditional exports. Their answer is that Venezuela’s concentration in oil puts it in a particularly difficult position because

of an idiosyncratic characteristic of the oil industry: the specialized inputs, knowledge, and institutions necessary to efficiently produce oil are not very valuable for the production of other goods. Using results from recent research on the structure of the product space, the authors show that oil-abundant economies lie in a relatively sparse region of this space, where it is difficult to find new products that you can reallocate resources to if you suffer declines in your traditional export sector.

What about the other two factors, the decline in oil production and the decline in non-oil productivity? Most of the remaining chapters in the book are concerned with providing explanations to these phenomena. Osmel Manzano's piece "Venezuela after a Century of Oil Exploitation" tackles the issue of accounting for the oil sector's performance. The key question here is why a country that boasts massive amounts of oil reserves decides not to take advantage of them and instead to maintain limits on production. Manzano argues that this policy was framed in an era in which oil was believed to be near exhaustion, so that policymakers put priority on conserving oil and diversifying the economy away from oil exports. These principles may have made sense in the sixties, but they were no longer reasonable after new exploration revealed that the country had indeed quite massive amounts of reserves, while changes in consumption patterns and greater efficiency of extraction techniques led to the oil glut of the eighties and nineties.

The issue of productivity is a more complex one. Robert Solow aptly referred to aggregate measures of productivity as "measures of our ignorance." At a broad level, total factor productivity reflects a variety of factors which can affect

how capital and labor get transformed into output in a country at a particular moment in time. These factors can range from society-wide changes in policies, institutions, and economic structure to microeconomic distortions that lead to inefficiencies in resource allocation. A collapse in financial intermediation, chronic underinvestment in public infrastructure, or the growth in social conflict could all lead to a decline in total factor productivity. The rest of the chapters in the book explore in more detail the potential explanations for the productivity decline, asking whether these were caused by the growth collapse or were a consequence of it.

“Public Investment and Productivity Growth in the Venezuelan Manufacturing Industry” by José Pineda and Francisco Rodríguez looks at this question by directly estimating the effect of public investment in a panel of Venezuelan manufacturing firms. The relationship between investment and productivity is a complex one whose estimation is clouded by the possibility of reverse causation: does public investment generate higher productivity or does the public sector tend to invest more in localities where productivity is growing? Pineda and Rodríguez use a unique natural experiment given by the earmarking of national revenues through the Intergubernamental Decentralization Fund to generate exogenous variation in the degree of public investment. They find that the contribution of public investment to productivity growth in the Venezuelan manufacturing sector is substantial: according to their estimates, non-oil per capita GDP would be 37% higher than its present value had the government not allowed the stock of public capital to decline after 1983. This explanation suggests

that the misallocation of public expenditures is a substantial contributor to the Venezuelan economic collapse.

Distortions in the allocation of factors of production can also generate declines in aggregate productivity. Such is the case with labor market regulations. While minimum wages, firing restrictions, and mandated non-wage benefits often have a reasonable justification in terms of the provision of social insurance, they can also generate substantial distortions to the reallocation of labor across firms. In countries with a large unregulated economy, these can generate considerable incentives to shift to the informal sector. Indeed, between 1990 and 2001 Venezuela was the country with the highest growth rate in informal sector employment in Latin America (Bermúdez, 2004). Omar Bello and Adriana Bermúdez's chapter "The Incidence of Labor Market Reforms on Employment in the Venezuelan Manufacturing Sector 1995-2001" attempts to estimate the cost of these increased regulations using the same panel of manufacturing firms. Since Venezuelan labor market regulations had differing effects based on firm size, and since the changes in these regulations are exogenous to the firm decision, they can obtain an estimate of the employment effect of labor market regulations that is not contaminated by endogeneity. The authors find a substantial effect of increases in labor market regulations on firm employment, suggesting that the marked increase in labor market restrictions during the nineties may have become an impediment to the reallocation of resources towards manufacturing.

In "The Real Effects of a Financial Collapse", Matías Braun looks at another possible suspect of the collapse in aggregate productivity. Between 1989



and 1996, Venezuela suffered a series of deep credit crunches from which it never fully recovered. Therefore, even though the size of Venezuela's banking sector was consistent with what one would expect for the country's level of income up to the 1980s, by the mid 2000s the sector was between 4 to 6 times smaller than one would expect. Braun argues that this collapse had a significant effect not only on the capacity to allocate credit to the economy but also on the efficiency of the resources that were allocated.

Not all of the chapters in the volume conclude that their potential explanatory variable is indeed a cause of the growth collapse. Were that the case, the sense of our exercise would be very much open to question. Attributing the collapse to everything is the same as attributing it to nothing. Thus, one of the most satisfying results of our project was to find that several authors argued that their sector or area of interest was not a relevant contributor to the collapse.

The clearest example of such a response is Daniel Ortega and Lant Pritchett's "Much Higher Schooling, Much Lower Wages: Human Capital and Economic Collapse in Venezuela." This paper looks at the hypothesis that lack of schooling may be a contributor to the collapse. The authors' answer is a resounding "no." Venezuela's growth in schooling capital was substantially higher than the median country and even faster than the median East Asian country! Even after allowing for changes in quality and restrictions to the reallocation of labor across sectors, the authors find little solid evidence of a contribution of lack of human capital to the decline in output. Indeed, if anything, Venezuela's huge increase in human capital makes the puzzle even

larger, as it implies that the massive collapse in output per worker is exceeded by the collapse in output per education-adjusted units of labor.

A second “no” comes from Samuel Freije’s study “Income Distribution and Redistribution in Venezuela. The increasing relevance of distributive conflict in Venezuela has fueled speculation that the growth in poverty and inequality is at the roots of the implosion of Venezuela’s political system. Freije finds that while Venezuelan inequality has increased, its increase is consistent with what one would expect given the collapse in capital accumulation and the growth in informalization. Furthermore, Venezuela in the 1970s was a relatively equal economy by Latin American standards, so that it is difficult to tell a story in which inequality is a causal determinant of the collapse. Obviously, however, the subsequent increase in inequality could have fueled growing social conflict and help explain part of the subsequent implosion of the political system.

A third – albeit more qualified - “no” comes from Cameron Shelton and María Antonia Moreno’s study of the evolution of fiscal policy during Venezuela’s economic collapse. In contrast to much conventional wisdom, Moreno and Shelton contest that Venezuela actually carried out significant fiscal adjustments after the onset of the debt crisis. While they do pin part of the blame on the excessive fiscal expansion of the seventies and early eighties, which made the downward adjustment all the more difficult, they argue that the post-1983 response was actually quite reasonable. Falling oil revenues were met with efforts to raise new sources of revenue and to cut expenditures. Although these cuts were not sufficient to close the growing gap, this is more than anything due to the magnitude of the decline in oil revenues and not to flaws in the fiscal

response – which in any case is commonly far from optimal just about everywhere.

The possibility of feedback loops illustrates the complexity of thinking about causation in the growth context. Poor fiscal policy may be a consequence instead of a cause of the collapse, but the collapse may have generated a vicious circle whereby deteriorations in fiscal policy made it even more difficult for the economy to retake a path of economic growth. A similar mechanism is illustrated in Dan Levy and Dean Yang's "Competing for Jobs or Creating Jobs? The Impact of Immigration on Native-Born Unemployment in Venezuela, 1980-2003", which looks at how changes in immigration patterns have affected patterns of job creation in Venezuela. Using exogenous shocks in income in migrant home areas to identify the effect of migration on domestic unemployment, Levy and Yang find a contrast between Colombian immigration, which tends to raise Venezuelan unemployment, and European immigration, which does not. This is consistent with the idea that European immigrants generate considerable positive externalities that offset their direct effects on labor supply and wages. It also suggests that the reversal in European migration that occurred as a result of the growth collapse could have generated a feedback loop in which the initial collapse caused the loss of a vibrant immigrant community and its spillover effects on the domestic population.

The Venezuelan collapse was not only economic. Up until the 1990s, Venezuela boasted a stable democratic political system that was commonly viewed as an example to follow by other developing middle income countries. During the ensuing decade, this system collapsed, leading to the near

disappearance of traditional parties and their replacement by a highly polarized politics. In “Institutional Collapse: The Rise and Decline of Democratic Governance in Venezuela”, Francisco Monaldi and Michael Penfold study the causes of this collapse. Their claim is that it can be attributed to a mixture of the governance problems created by oil, the dramatic *fall in per-capita oil fiscal revenues* in the late eighties and nineties, and the *political reforms* introduced in the late eighties and early nineties, which weakened and fragmented the party system and undermined political cooperation.

Jonathan DiJohn’s “The Political Economy of Industrial Policy in Venezuela” explores the economic consequences of the political collapse. The central question of this paper is why the Venezuelan political system proved incapable of implementing a reasonably rational industrial policy that took advantage of oil revenues to channel them into the growth of the non-oil sector. DiJohn contends that this was the result of a growing *incompatibility* between the country’s ‘big push’ heavy industrialization development strategy, on the one hand, and the increasing populism, clientelism and factionalization of the political system. Policies were becoming more factionalized and accommodating precisely at a time when the development strategy required a more unified and exclusionary pattern for the allocation of rents and subsidies.

The last two studies in the book look at another dimension of the political collapse, which is the ascendance to power of a radical leftist movement headed by Hugo Chávez in the late nineties. In “Oil, Macro Volatility and Crime in the Determination of Beliefs in Venezuela,” Rafael Di Tella, Javier Donna and Robert MacCulloch try to explain why the Venezuelan public is so responsive to left-

wing, populist, and anti-market rhetoric. They argue that the emergence of these preferences can be explained by the country's history of macro volatility, its dependence on oil, and the generalized belief that corruption and crime are high. However, the authors caution that these beliefs are often divorced from reality, and show evidence consistent with this fact. In Venezuela, the social construction of beliefs appears to play a significant role in the creation of new ideologies.

In contrast to the focus of Di Tella, Dona, and MacCulloch on the political demand for a shift to the left, Javier Corrales's "Explaining Chavismo" attempts to understand the characteristics of the Venezuelan political system that made possible the emergence of a radical leftist movement. Corrales's key argument is that the degree of openness of many political institutions in Venezuela, which did not subject the radical left to institutional exclusion or severe repression, allowed for the survival of cadres of extreme leftist politicians, intellectuals and bureaucrats that were in a position to offer the supply of a radical project once the demand arose.

Most of the studies in this book have not tried to explain the economic consequences of the country's shift to a radical leftist paradigm.<sup>6</sup> We believe that the *consequences* (as opposed to the causes) of *chavismo* merit a separate study on their own. The fact that the Bolivarian revolution is a recent and ongoing process poses a set of methodological challenges which are distinct from those dealt with in this book. Revolutions, as Simón Bolívar himself pointed out, must be observed up close but are best judged from afar. Our focus has been instead to

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<sup>6</sup> Recent attempts at understanding the political and economic consequences of the Bolivarian revolution have been made by Miguel et al. (2006) and Ortega and Rodríguez (2006).

understand the causes of the economic and political collapse that started during the oil boom of the seventies and that is at the root of many of Venezuela's current predicaments. The fact that Venezuela is currently undergoing an oil boom comparable in magnitude to the one it experienced thirty years ago suggests that the lessons to be learned from studying the past may have their greatest relevance in understanding the present.

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**CHAPTER 2:  
Why Did Venezuelan Growth Collapse?<sup>1</sup>**

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## 1. Introduction

Toward the end of the 1970s, Venezuelan economic growth experienced a stunning reversal. Since the beginning of the century, the country had undergone a sustained economic expansion that took it from being one of the poorest countries in the region to being the second-richest one even before the first oil boom.<sup>2</sup> In 1979 that trend made an about-face.<sup>3</sup> Venezuelan non-oil per capita GDP declined at an annual rate of 0.9% over the ensuing 23 years, for a total cumulative decline of 18.6%. What is more striking is that this occurred despite a significant incorporation of new workers into the labor force which should have *ceteris paribus* raised per capita income. Therefore, per worker GDP fell at an annual rate of 1.9% in the non-oil sector; its cumulative decline was 35.6%.

The causes of this collapse are not well understood. It is true that Venezuela was prey to many of the factors that characterize resource-dependent economies such as exposure to terms of trade volatility, an appreciated exchange rate that is unfavorable to the production of tradables, and a highly inefficient public sector. But all of these factors seemed to be able to coexist with economic growth during the more than half a century of sustained expansion that preceded the collapse. Indeed, Venezuela was widely viewed twenty-five years ago as an example of how to tackle the development process. For example, in October 1981 American Political Scientist Peter Merkl wrote: “It appears that the only trail to a democratic future for developing societies may be the one followed by Venezuela...Venezuela is a textbook case of step-by-step progress.”

Understanding the Venezuelan economic collapse has interesting implications for thinking about the development process more broadly. It is now recognized that development experiences vary widely in terms of the timing and intensity of growth episodes (see Pritchett, 1998, Hausmann, Pritchett and Rodrik, 2004). One of the most interesting yet understudied sub-classes of growth experiences is that of countries whose failure to achieve higher living standards comes not from an incapacity of attaining high growth rates but from the incapacity to sustain them. Argentina, the Soviet Union and Indonesia are three cases of countries that were viewed as development examples before the collapse of their economies. Indeed, out of 154 countries in the Penn World Tables, 41 suffered decreases of more than 20% in their terms-of-trade adjusted per capita GDPs over periods of variable length, and 15 suffered decreases of over 50%. If we were to understand why some economies suffer collapses in their growth rates, we would go a long way towards explaining the divergence that appears to characterize the unconditional distribution of world incomes over the past fifty years.

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<sup>2</sup> Data are from Tables 9.4 and A.2.1, Bulmer-Thomas (1994).

<sup>3</sup> As we will discuss in further detail below, estimates of the timing and magnitude of the decline in Venezuelan GDP vary widely due primarily to differences in the valuation of the oil sector. The figures cited correspond to the Tornqvist chained index built by Rodríguez (2004) and discussed in greater detail in section 2.

The Venezuelan growth experience is a common example in the by now established literature regarding the link between poor growth performance and resource abundance<sup>4</sup>. Generally, this literature finds that resource abundance tends to be associated with lower growth rates. Most recently, Sala-i-Martin, Doppelhofer and Miller (2004) show that the fraction of GDP in mining is one of 18 variables (out of 67 that are considered) that can be shown to have robust effects on growth in Bayesian averages of classical estimates derived from cross-country growth regressions.<sup>5</sup>

A handful of papers have been concerned specifically with the Venezuelan growth experience, among which we count Rodríguez and Sachs (1999), Hausmann (2001) and Bello and Restuccia (2003). These papers differ with respect to the primary causal factor that is emphasized. Rodríguez and Sachs stress the decline in oil rents, Hausmann centers on the increase in credit risk and Bello and Restuccia highlight the increase in government intervention. All papers share the common characteristic of being calibration-oriented approaches that attempt to see whether a stylized model can predict the magnitude of the decline. As pointed out by Rodríguez (2004b), these results are highly sensitive to changes in the data set used for their calibration exercise. This is a result of the fact that there exist broad disparities in existing measures of Venezuelan GDP, with different series showing discrepancies of up to 3 percentage points in annual growth rates for periods greater than a decade. Therefore, getting the data right is a vital component of an adequate growth diagnosis of the Venezuela economy.

In this paper we show how alternative explanations of the Venezuelan collapse can be integrated in a simple theoretical framework which can be used to understand the relative importance of each factor in accounting for the country's economic decline. We illustrate within a three-sector framework how the economy will display different reactions to changes in oil rents and productivity depending on whether it falls in the region of parameters that lead to complete or incomplete specialization. We also show that this holds regardless of whether there is capital mobility or not. Our theoretical framework is used to trace the decline of Venezuelan growth to three primary causes: (i) the decline in per capita oil rents (ii) the fall in total factor productivity and (iii) the lack of specialization in alternative exports. We show that the decline in oil rents can be understood as the product of policy decisions and the evolution of the international oil market. We then go on to tackle the harder question of how we can account for the lack of development of an alternative export industry.

In essence, we argue that Venezuela's inability to develop an alternative export industry has to do with its starting pattern of specialization. Countries are able to enter new export markets only if the new goods are similar to those that it currently produces. It is only in that way that it can take advantage of its specialized inputs, technical knowledge, and institutional configuration in

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<sup>4</sup> See in particular Sachs and Warner (1999), Gelb (1988), Lane and Tornell (1999) Gylfason (2001), Mehlum, Moene y Torvik (2002), Busby, Isham, Pritchett and Woolcock (2002) and Hausmann and Rigobon (2003). Lederman and Maloney (2006) give a contrasting view.

<sup>5</sup> Interestingly, however, the share of primary exports in GDP (Sachs and Warner's original variable) does not make it into their list, nor does a dummy for oil-exporting countries.

producing a good that it has not produced before. The existing patterns of specialization of countries will have an effect on the emergence of new export goods. Some countries will have the luck of producing goods that are similar to many other high-value goods. They will thus have little trouble shifting production to those new goods. Other countries, in contrast, will occupy sparser regions of the product space, in which few goods are sufficiently similar to those that they currently produce. Venezuela – like most oil exporting countries – occupies such a region, a fact that significantly hinders its capacity of shifting to new export industries.

The rest of the paper proceeds as follows. Section 2 deals with data problems and presents our best estimate of the magnitude and timing of the collapse. Section 3 introduces a simple three sector model of the economy and shows how to trace the growth collapse to the three underlying causes mentioned above: the decline in oil rents, the fall in TFP and the failure of an alternative export sector to emerge. Section 4 argues that in order to understand the decline in capital accumulation one must understand why an alternative set of export industries failed to emerge in response to the decline in oil revenues. Sections 5 and 6 then go on to examine theoretically and empirically the possible causes behind the lack of dynamism of the Venezuelan non-oil export sector. Section 7 concludes.

## **2. How large is the collapse?**

The main impediment to the primary task of this paper - to elucidate the explanatory power of different theories in accounting for the Venezuelan economic collapse - comes from the substantial variation that exists between different commonly used data sets with respect to the magnitude and timing of the reversal in growth. Different indicators of GDP can give broadly different estimates of economic performance for Venezuela. As shown in Table 1, the differences between the average annual growth rates that come out of these indicators can be as large as 3.4 percentage points over decade-long periods. Sorting out the reasons for these differences and establishing the appropriate data to be used are prerequisites of any meaningful calibration or growth accounting exercise.

Rodríguez (2004a) discusses in detail the reasons for the differences among these series. He concludes that, by and large, the main source of differences between series comes from the different valuation that is given to the oil sector in different series. This is not a trivial matter, as per capita oil production fell by 64% between 1970 and 2000, so weighing it by a higher price will imply a lower growth rate for the aggregate economy. Alternative assumptions on base year prices interact with the choice of technique for linking series originally produced for different sub-periods to produce widely disparate results. Two other sources of differences include the use of unofficial estimates of sectoral production by some authors and the treatment of the discrete jump in measured GDP that occurred with the 1984 base year change.<sup>6</sup>

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<sup>6</sup> The use of unofficial estimates affects the Baptista and Maddison data. With respect to the 1984 jump in nominal GDP, the key issue is whether to treat it as genuine growth in the supply of goods and services or

The solution one adopts to the problem raised by an overabundance of disparate estimates of GDP growth depends on the issue one is interested in tackling. One may be interested in economic growth because of a primary interest in living standards, or because of a preoccupation with economic performance. In more formal terms, one may want to measure shifts over time in the consumption possibilities frontier or in the production possibilities frontier. If prices stay constant, then these two measures will coincide. But when relative prices experience significant changes over time, they may start showing wide differences.<sup>7</sup>

If one is interested in economic growth because one wants to understand the evolution of a society's capacity to sustain greater living standards (shifts in the consumption possibilities frontier), then most of the estimates in Table 1 are unlikely to be useful. The reason is that these estimates all come from measures of GDP at constant prices, which by definition do not take into account changes in the purchasing power of exports. But great part of the changes that occurred in Venezuela's capacity to sustain living standards during the second part of the twentieth century had to do precisely with changes in the relative price of oil. Furthermore, those changes can be directly linked to policy decisions, in particular Venezuela's adoption of the OPEC strategy of curtailing production in order to exploit international market power. Note that this type of strategy, if successful, would tend to cause a decrease in per capita constant price GDP even while improving the country's relevant consumption possibilities. This seems counterintuitive for a measure of living standards.

A more appropriate measure of living standards should include an adjustment for the effect on consumption possibilities of changes in the terms of trade. Such a measure is reported, though often ignored, in the Penn World Tables (Aten, Summers and Heston, 2001) as the Terms-of-Trade Adjusted Real GDP per Capita. Instead of valuing net exports at constant prices (as their commonly used real chained GDP series does), this series adds net exports in current prices relative to the price index of domestic absorption. These numbers confirm the story of Venezuela's growth collapse, albeit in a more nuanced way than some of the more commonly used data. For the last half of the twentieth century taken as a whole, Venezuela looks, in terms of consumption possibilities, like an average Latin American economy: indeed, its growth rate average is exactly that of the region (1.36%), which is slightly lower than the world average of 2.10%. However, this mixes two very distinct periods: in the first one, Venezuela's GDP growth exceeded world and Latin American growth by a substantial margin, occupying the 36<sup>th</sup> percentile of world growth rates and the 25<sup>th</sup> percentile of Latin American growth rates. In the second period, comprising the last twenty years of the twentieth century, the country fell way back behind the rest of the world, falling into the last quintile of both world and Latin American growth.

Suppose instead that we are interested in per capita GDP as a measure of economic performance (we want to estimate shifts over time in the production

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to assume that it corresponds to previously unmeasured goods. Readers interested in a fuller discussion of these issues are referred to Rodríguez (2004a).

<sup>7</sup> See Fisher and Shell (1998) for a full treatment of these issues.

possibilities frontier). Then there is no compelling reason to use a terms of trade adjusted series. Indeed, as one would be primarily interested in decomposing these shifts in changes in technology and changes in inputs, a terms of trade adjustment would add unnecessary noise. But then it seems that we are stuck with the broad variation in different indicators that arises as a result of using alternative base years.

A more productive route to take if attempting to understand shifts in production possibilities would be to look separately at production in the oil and non-oil sectors, thus circumventing the issue of choice of a relative price to value these two sectors. As shown in Figures 1 and 2, choice of base year is relatively irrelevant when one looks at growth in these sectors separately, in contrast to what happens when one looks at aggregate growth. In essence, the problem is that a constant price indicator of GDP literally mixes apples and oranges or, more appropriately, barrels and arepas. Separating these series allows us to see that we are looking at two distinct issues: a collapse in per capita oil production, which fell by more than two-thirds between 1957 and 2001, and a less pronounced yet significant decline in non-oil per capita GDP, which fell by approximately one-fifth between 1978 and 2001. Table 3 shows these numbers, as well as the per-worker figures, which are less pronounced for the oil sector (45-49%), but more pronounced for the non-oil sector (36-40%). These numbers give us the magnitude of the decline that we will attempt to account for.

In sum, our argument is that the decline in oil and non-oil GDP are two separate phenomena with distinct causes, and that there is much to be gained by analyzing them separately. During the period corresponding to the decline the Venezuelan oil industry was almost completely publicly owned, with production and input use the results of explicit policy decisions. The opposite is true of the non-oil sector, which was predominantly owned and operated by the private sector. This is not to say that there was no relationship between the performance of both sectors – indeed, we will argue quite the contrary – but that analytically it will be useful to separate their discussion, trying to understand what the main determinants of the country's petroleum policy were and using these production decisions as an input for the study of the non-oil sector's performance. Manzano (2007) discusses this issue; in the rest of this paper we concentrate on understanding the causes of the decline in non-oil GDP, touching when necessary on the role that the decline in oil fiscal revenue has played in it.

### **3. Sources of growth.**

Table 5 presents a standard growth accounting decomposition for the Venezuelan non-oil sector covering the 1957-01 period as well as the two pre-collapse and collapse sub-periods. Our decomposition separates changes in output into the contribution of three types of capital (residential, non-residential and machinery and equipment), four types of labor (unschooled and classified by primary, secondary and higher schooling attainment) and Total Factor Productivity (TFP). The annual percentage growth rate in the non-oil sector during the period of study is -0.90%. This decline occurs despite a substantial growth in the skill-adjusted rate of labor force participation, which by itself would

have generated an increase of 0.75 percentage points in the growth rate. In other words, the magnitude of the decline to be accounted for corresponds to an annual fall in the per-(skill-adjusted) worker GDP ratio of 1.65 percentage points. This decomposes almost evenly, according to our growth accounting exercise, in a contribution of TFP growth of -0.84 percentage points and a contribution of the aggregate capital stock of -0.81 percentage points.

Note that this exercise understates the effect on growth of the decline in productivity for at least two reasons. On the one hand, the stock of capital reacts endogenously to changes in the rate of TFP growth, so that part of the decline in the capital stock should be explainable as a response to the decline in productivity (Hulten, 1982). Furthermore, the benchmark against which a certain rate of TFP growth should be measured is the growth of production techniques available to the economy at a given point in time. Prescott (2000) has suggested that an appropriate benchmark is 2%, which is not too different from the rate of TFP growth attained by Venezuela during the pre-collapse period (1957-78) of 1.78%. Therefore, it appears that productivity growth played an important role in the Venezuelan economic collapse.<sup>8</sup>

However, the data also suggest that there is an important autonomous role for capital accumulation. In a standard one-good Ramsey economy, the capital-labor ratio will respond to changes in productivity with an elasticity of  $1/(1-\alpha)$ , with  $\alpha$  denoting the capital share. But as we can see in Table 5, the Venezuelan Capital-Labor ratio declines at an annual rate of 2.44%, significantly higher than what would be expected as a result of the decline in productivity with a capital share of  $1/3$  ( $\approx(3/2)*(-0.84)=-1.26$ ).<sup>9</sup> In other words, the estimates of Table 5 imply that more than half of the capital's stock's decline cannot be explained as a simple response to the fall in productivity.

Section 4 is concerned with attempting to understand the collapse in the capital stock, given the economy's productivity performance. We return to the issue of productivity growth in section 5.

#### **4. The decline in capital accumulation**

It seems logical that any attempt to understand an apparently unexplained collapse in capital accumulation should take as its departure point the most salient fact about the evolution of the Venezuelan economy during the past twenty five years, which is the steep decline in oil rents from the levels they

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<sup>8</sup> It could be argued that, by not taking into account changes over time in the quality of the capital stock, we have underestimated the contribution of embodied technological change to the growth rate. Estimating embodied technological change requires price indices of quality-adjusted investment goods as calculated by Gordon (1983) or Greenwood Hercowitz and Krusell (1997), which are unavailable for the Venezuelan economy. However, it is unlikely that this could be a major contributing factor, as Venezuelan gross investment rates during the period of study were barely enough to cover depreciation during the 1978-01 period. Even in the case of the US, where the growth rate of equipment capital was 4.37% for the 1949-83 period, the resulting underestimation of the contribution of the capital stock to growth due to embodied technological change has been calculated at 0.3 annual percentage points (Hulten, 1992).

<sup>9</sup> If one uses the historical capital share, the predicted decline in the capital stock increases to 1.92%, still short of the historical decline. On why national accounts data may overestimate capital shares in developing countries, see Gollin (2002)



reached during the 1970s. As shown in Figure 3, per capita fiscal oil revenues rose steadily until the 1970s, when they started declining; by the 1990s they had reached less than one third of their 1970s value but were also substantially lower than any level the country had experienced since the 1940s. Intuitively, it makes sense to expect a contraction of this magnitude in the country's main source of export and fiscal revenue to produce a significant decline in capital accumulation.

However, the idea that an adverse shock to resource exports should have any effect on the non-oil producing sector is actually quite hard to justify in an equilibrium model. The reason is that, in an open economy that is also incompletely specialized, factor prices will be determined by international prices. Since non-oil GDP must equal non-oil factor income, the fact that the domestic economy cannot affect factor prices implies that whatever happens in the oil sector will have no effect on the level of non-oil GDP.

To fix ideas, consider the following simple three sector model proposed by Hausmann and Rigobon (2003). In that model, there are two sectors (tradables and non-tradables) that use two factors of production (capital and labor) plus a third sector that is simply modeled as an exogenous source of export revenues (the oil sector). The model also has an open capital account with an international interest rate that is given by  $\bar{r}$ . Let us assume for simplicity that both sectors have the same Cobb-Douglas technology, so that differences in production will be driven completely by differences in relative prices. The production functions are thus  $Y_t = AK_t^\alpha L_t^{1-\alpha}$  and  $Y_{nt} = AK_{nt}^\alpha L_{nt}^{1-\alpha}$ . The labor force is fixed at  $\bar{L}$  and per capita oil revenues are  $\bar{g}$ , which we take to be exogenous and spent totally on non-tradables by the government. Consumers have Cobb-Douglas preferences  $U(C_t, C_{nt}) = C_t^\gamma C_{nt}^{1-\gamma}$ . Consumers own all labor as well as an exogenous per capita stock of capital  $\bar{k}^h$  which is unrelated to the domestic capital stock. The solution to this system, provided incomplete specialization, is given by the solution to the following system of six equations in six unknowns:

$$w = (1 - \alpha)AK_t^\alpha L_t^{-\alpha} \quad (1)$$

$$w = P_{nt}(1 - \alpha)AK_{nt}^\alpha L_{nt}^{-\alpha} \quad (2)$$

$$r = \alpha AK_t^{\alpha-1} L_t^{1-\alpha} \quad (3)$$

$$r = P_{nt}\alpha AK_{nt}^{\alpha-1} L_{nt}^{1-\alpha} \quad (4)$$

$$L_t + L_{nt} = \bar{L} \quad (5)$$

$$P_{nt}AK_{nt}^\alpha L_{nt}^{1-\alpha} = \left( \gamma(w + r\bar{k}^h) + \bar{g} \right) \bar{L} \quad (6)$$

It is easy to note that wages and relative prices are constant in the solution to this system. Letting  $k_i = \frac{K_i}{L_i}, i = \{t, nt\}$ , equations (1)-(4) imply that

$k_t = k_{nt} = \left( \frac{\bar{r}}{A\alpha} \right)^{\frac{1}{\alpha-1}}$ , which means that the aggregate capital stock will be given by:

$$K = K_t + K_{nt} = \left( \frac{\bar{r}}{A\alpha} \right)^{\frac{1}{\alpha-1}} \bar{L}, \quad (7)$$

which is invariant to the level of oil revenues. Revenue shocks are accommodated by changes in the allocation of labor, so that prices, capital stocks and GDP remain stable. The equilibrium employment in non-tradables will be given by:

$$L_{nt} = \bar{L} \left\{ \gamma(1-\alpha) + \frac{\bar{g} + \gamma r \bar{k}^{\bar{h}}}{A \left( \frac{\bar{r}}{A\alpha} \right)^{\frac{\alpha}{\alpha-1}}} \right\}. \quad (8)$$

The model with incomplete specialization has implications that are in stark contrast with the Venezuelan experience. In this model, neither the capital stock, relative prices nor aggregate non-oil GDP vary with  $\bar{g}$ . The oil sector is simply tagged on to the rest of the economy, which functions independently of the resource sector. Changes in oil GDP do have an effect on consumption – through lower imports – but do not affect the capacity of the rest of the economy to generate revenue.

This result does not depend on the assumption of perfect capital mobility. As we show in the Appendix, a model characterized by a closed capital account delivers the same results. The reason is that when the capital account is closed the long run rate of return is determined by the steady state equilibrium conditions. It will depend on savings and depreciation rates as well as the parameters of the production function, but not on oil revenues. Therefore, since the steady-state return to capital is given, we can extend the above reasoning to show that the capital stock, relative prices and aggregate non-oil GDP will still be invariant to resource earnings.

However, note what happens when oil revenues rise beyond a certain level.

According to equation (7), when  $\bar{g}$  reaches  $g_o^* = (1 - \gamma(1 - \alpha)) A \left( \frac{\bar{r}}{A\alpha} \right)^{\frac{\alpha}{\alpha-1}} - \gamma r \bar{k}^{\bar{h}}$ ,

the whole of the labor force is allocated to non-tradables production. Beyond that point, tradables production disappears and (7) and (8) no longer give us the solution. (1) and (3) now become inequalities and the aggregate capital stock is given by:

$$K = K_{NT} = \frac{\alpha}{1 - \gamma(1 - \alpha)} \left( \bar{g} + \gamma r \bar{k}^{\bar{h}} \right) \bar{L}. \quad (9)$$

As equation (9) indicates, the capital stock is now fully responsive to changes in the level of oil revenues. The response is illustrated in Figure 4, which shows how the capital stock responds to different levels of oil revenues. At low levels of oil revenues, the capital stock is completely insensitive to increases in oil

revenues. But after  $g^*$  is surpassed, changes in oil revenues are converted with a unit elasticity into changes in the capital stock. These effects are similar when there is no capital mobility (see the Appendix for details)..<sup>10</sup>

This exercise leads us to the conclusion that complete specialization is a necessary ingredient of an explanation of the Venezuelan economic collapse. The collapse in non-oil GDP that coincides historically with the decline in oil revenues can be explained only if we assume that Venezuela was unable to reallocate factors to the production of other tradable goods because alternative tradable sectors were nonexistent. Had there existed an alternative export sector in Venezuela in 1980, the growth of that sector would have played a stabilizing role in the country's reaction to falling oil revenues. In its absence, the domestic economy had to react to adverse oil shocks by contractions in domestic production. Theory predicts that this process will continue until (i) the fall in oil revenues is halted (ii) the real exchange rate falls sufficiently to make the production of non-oil tradables competitive.

The model also has very interesting policy implications. Let the levels of productivity of the tradables and non-tradables industry differ, and let the production function for the non-tradables industry now be  $Y_n = BK_n^\alpha L_n^{1-\alpha}$ . Let us assume that there is a set of government policies that can have an effect on the level of tradables productivity  $A$ . For simplicity, assume that these policies are costless. It is easy to check that the above derived solutions for the capital stocks are not affected: under incomplete specialization  $P_n = \frac{A}{B}$  and thus  $K$  is still given by (9). Since the capital stock levels under complete specialization do not depend on productivity, they are also unaffected by this change.

In Figure 4 we have also plotted the effect of an increase in tradables productivity of 20%. This increase makes production of tradables kick in at a much higher level of oil revenues and thus halts the decline in the capital stock generated by further decreases in oil rents. Without the policy, a decline in oil revenues from 4000 to 1000 1984 US\$ leads to a decline of 50% in the per worker capital stock, but with the increase in productivity, it generates a decline of only 26% in the capital stock.

What is surprising about this result is that it shows that a policy oriented towards increasing productivity in a very small (perhaps even nonexistent) sector can have a dramatic effect on the path of the capital stock and GDP. The effects go beyond the tradables sector because in equilibrium the wage rate is raised in both industries. Note that, in contrast, increases in productivity of the apparently more significant non-tradables industry have no equivalent effects on the path of

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<sup>10</sup> A possible approach for distinguishing between the two models would be to use (9) and (A.4) to calibrate the behavior of the economy's capital stock and to comparatively evaluate the performance of the models. Our attempts to do so have not produced satisfactory results, mainly due to the fact that there is an important range of variation for oil revenues for which the models will have very similar predictions. At least from the point of view of understanding the relative magnitudes of the decline in capital accumulation, these models appear to be sufficiently close to observational equivalence so as to raise the question of the utility of further attempts to distinguish between them.

capital accumulation. Any factor that increases the productivity of the tradables industry is likely to have far reaching effects on welfare and economic growth.

## **5. Why didn't Venezuela develop an alternative export industry?**

The discussion presented above has established the key role played by the non-oil export sector in attenuating the decline in capital accumulation generated by falling oil revenues. It suggests that understanding the nature of the Venezuelan export sector is vital for an analysis of Venezuela's growth prospects. The following discussion is intended to highlight certain aspects of this sector that can help us understand its performance during the decline of oil rents.

### **5.1 Non-oil export performance since the 1980s.**

A first look at export performance since the 1980s seems to suggest that there has been some growth of non-oil exports during the period of collapse, as would be expected by the models discussed in the previous section. However, the growth has been unexceptional by just about any standard. Per capita real non-oil exports (measured in 2000 US\$) have grown by 42% since 1982. Their share of total exports grew from 7.1 to 19.7% of total exports, due mainly to a decline in oil exports. The annual real growth rate of per capita exports, at 2.01%, is the third lowest in the group of 10 oil exporters that suffered important collapses in oil exports during the last 21 years (Table 6). Even three-fifths of that growth has been in sectors such as iron ore, petro-chemicals and aluminum that heavily rely on the economy's comparative advantage in petroleum, natural resources and energy. Although non-energy intensive non-oil exports have grown at a satisfactory rate of 5.2% a year, this is partly due to the fact that it was an incredibly small sector, providing only \$39 per capita in export revenue in 1982. This growth is also surprisingly weak if one views it in the light of the considerable real exchange rate depreciation that occurred between the early eighties and the late nineties: as shown in Figure 7, the Venezuelan real exchange rate depreciated by more than 50% between the early eighties and the mid-nineties, before appreciating again in the late nineties under the Caldera-Chávez exchange rate bands policy. In fact, between 1983 and 1989, the country had a multiple exchange rate regime with differentials between the bottom and the top rate well in excess of 100 percent. Exports were not just stimulated by the level of the real exchange rate, but also by the possibility of arbitraging across exchange rates. In April 1989 the exchange rate regime was unified in the context of a large real depreciation. Non-oil exports stagnated after that suggesting that arbitrage was an important component of the export performance in the 1980s.

Among the ten oil-exporting countries that suffered significant export collapses since 1981 listed in Table 6, only two (Mexico and Indonesia) were able to experiment a sufficiently strong growth in their non-oil export sector to compensate for the decline of oil exports and generate an overall positive export growth. (Ecuador is a third case, in which the expansion of non-oil exports appears to have exactly compensated the decline in oil exports. Venezuela's growth rate of non-oil exports is one-sixth that of Mexico and one-fourth that of

Indonesia. Figures 5A-5c show a more long-run comparison of Venezuela, Indonesia and Mexico. These figures show striking differences in the behavior of the three countries: while in Mexico and Indonesia the collapse in oil exports was accompanied by a substantial expansion in the secondary exports sectors, this did not happen in Venezuela.

It is important to bear in mind that the period that we refer to coincided with an unprecedented expansion of world trade. Figure 8 controls for this fact by calculating the evolution of Venezuela's median market share in non-energy intensive sectors. Although this series does display an upward trend, it also shows that Venezuela's market participation in non-energy intensive sectors has not increased since the early 1990s.

Figure 9 shows a decomposition of Venezuela's export growth by region of trade partner. By and large, the main contribution to the growth of Venezuelan non-oil exports comes from its growth in trade with members of the Andean Pact and the G-3. The Andean Pact is a Customs Union established in 1995 that arose out of a Free Trade Area formed two years earlier and includes Bolivia, Colombia, Ecuador, Peru and Venezuela; the G-3 is a Free Trade Agreement that covers Mexico, Venezuela and Colombia. By and large, this growth has been concentrated in the Colombian market, imposing considerable limitations on market size. Figure 9 also shows that the impressive growth of Venezuelan non-oil exports in the mid-nineties was reversed with the trade and exchange restrictions that Venezuela imposed after 1999. Two key decisions are worth mentioning: the imposition of restrictions on cross-border transportation of merchandises by Venezuela on May 12, 1999, which requires reloading merchandise at the border so that it is at all times transported by domestic operators and the subsequent imposition of exchange controls in 2003, with the ensuing temporary paralyzation of more than 80% of Colombian-Venezuelan trade and the cessation of private debt payments between the two countries.<sup>11</sup> The cross-border controls as well as restrictions by Venezuela on the imports of garlic and onions from Peru and coffee from Colombia have led the Andean Community to authorize these countries to impose retaliatory tariffs on Venezuela.<sup>12</sup> The effect of these decisions goes beyond their direct impact on the incentives to export in particular industries, but affect the degree of uncertainty regarding policy stability with respect to conditions for open international trade.

In sum, Venezuela has experienced positive but unexceptional non-oil export growth since the eighties. The data also suggest that (i) it is concentrated in energy-intensive products which are just another way of exploiting Venezuela's comparative advantage in oil; (ii) measured in relation to world trade, it has stagnated since the early nineties, and (iii) it is concentrated in trade with the Andean Community and the G-3, and thus it is limited by the small local market size in the limited set of products that Venezuela exports and is highly sensitive to changes in trade policy such as those that have occurred since 1999. With the recovery in oil revenues since 2004, Venezuela's non-oil export performance has

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<sup>11</sup> See Gutiérrez (2002) on cross-border transport and EIU (2003) on the effect of exchange controls on Colombo-Venezuelan trade.

<sup>12</sup> See Gutiérrez (2002), p. 15.

gone in reverse. In this context, it is not obvious that a non-oil export sector exists that can buffer non-oil output from the economy-wide effects of an eventual decline in oil revenues.

## **5.2 Where do new exports come from?**

We can summarize our argument to this point as follows. There are two sources of poor Venezuelan growth in the non-oil sector: the decline in productivity and the decline in the capital stock over and above what one would expect solely from the fall in productivity. The latter cannot be explained as a response to a fall in oil revenues unless we are willing to assume that Venezuela is adequately characterized as a completely specialized economy. Complete specialization occurs when the economy lacks an alternative set of export goods to which it can move resources. The inability to develop these new goods is thus at the roots of a consistent account of Venezuela's growth problems.

While this explanation is internally consistent, it still leaves unanswered the underlying question of why Venezuela was unable to develop a set of alternative export goods to which it could shift production when it was hit by the export collapse. Many countries have seen massive changes in its pattern of specialization over time, whereby resources are shifted to previously inexistent industries. Indeed, this type of structural transformation has been at the roots of the change experienced by East Asian countries during the postwar period from agricultural producers to exporters of unskilled-labor intensive manufactures and, in some cases, to exporters of high-technology products. Why was Venezuela incapable of experiencing a similar productive transformation?

Answering this question requires a theory of the evolution of comparative advantage. Regrettably, conventional models of trade and technological change have little to say about the form that this evolution can be expected to take. The Heckscher-Ohlin model explains the pattern of specialization as a consequence of changes in factor endowments but takes productivity in goods as a given. Most dominant approaches to modeling productivity growth (e.g., Aghion and Howitt, 1992, Grossman and Helpman, 1991) assume homogeneity across products and are thus inappropriate for studying the emergence of particular industries. What we require is a theory that will help us understand why some countries will become more productive in producing particular sets of goods, and how that depends on their existing pattern of specialization.

Such a theory has been proposed recently by Hausmann and Klinger (2006, 2007). These authors have shown that the density of the product space, in a sense which can be precisely defined, is a key determinant of the future evolution of comparative advantage. Countries are more likely to develop a comparative advantage in goods that are "closer" to the goods that they currently produce. Theoretically, we would say that two goods are close to each other if the specialized inputs necessary to produce one can also be used to produce the other. The problem is that these specialized inputs may be very hard to measure, as they include not only specialized labor and capital but access to particular markets, public infrastructure provision, or the provision of specific forms of property rights protection. Therefore, Hausmann and Klinger suggest using a

purely empirical measure of export similarity given by the relative frequency with which these goods are exported together. More formally, product similarity is given by the minimum of the conditional probabilities of exporting one good given that you are exporting the other one:

$$\varphi_{ijt} = \min\{p(x_{it} | x_{jt}), p(x_{jt} | x_{it})\} \quad (1)$$

where  $p(x_{it} | x_{jt})$  is the probability that you have revealed comparative advantage in good  $i$  at time  $t$  given that you have revealed comparative advantage in good  $j$  at time  $t$ .

This measure of proximity can be used to build an indicator of the value of unexploited opportunities for export that can be particularly useful in our context. Hausmann and Klinger suggest precisely such a measure, which they call a country's "open forest." The idea of this measure is to capture the sophistication of the goods that an economy could produce with its productive assets. The measure is built as a weighted average of the sophistication of all potential export goods, where the weights are given by the distance between these goods and the economy's present export basket. The measure of distance in the product space is calculated based on the frequency with which particular good-pairs are exported by the same country, while the measure of sophistication is given by the average income of the countries that export that good, which we call  $PRODY_{jt}$ , as originally proposed by Hausmann, Hwang and Rodrik (2005). More formally, let  $x_{cjt}$  be an indicator variable that takes the value 1 if country  $c$  has a revealed comparative advantage greater than 1 in good  $j$  at time  $t$  and 0 otherwise. Then we can define a measure of the "option value" of a country's unexploited export opportunities as:

$$open\_forest_{ct} = \sum_i \sum_j \frac{\varphi_{ijt}}{\sum_i \varphi_{ijt}} (1 - x_{cjt}) x_{cit} PRODY_{jt} \quad (2)$$

*open\_forest* thus captures the flexibility of an economy's export basket, in that it measures the value of the goods that it could be producing with the inputs that it currently devotes to its export production. *open\_forest* is particularly appropriate for thinking about an economy's capacity to react to adverse export shocks. To fix ideas, suppose that an economy's exports of good  $i$  were to disappear overnight. This could happen, for example, as a result of the exhaustion of a natural resource, of the emergence of a new lower-cost supplier in international markets or as a result of the invention of a cheap substitute for that good. We know that this economy must shift resources into a new export sector.  $\varphi_{ijt}$  can be interpreted as our best guess of the probability that that country will shift resources into good  $j$ , and  $\varphi_{ijt}(1 - x_{cjt})$  can be seen as our best guess of the probability that it will export a good  $j$  that it is not already exporting.  $\varphi_{ijt}(1 - x_{cjt})PRODY_{jt}$  is the expected value (measured in terms of the sophistication of exports) from exporting that good, making *open\_forest* the weighted average of that expected value over all goods that the economy currently exports. In other

words, *open\_forest* reflects the expected value of an economy's next best export basket if it moved out of its current basket of exports.

As shown in Figure 10, Venezuela's *open\_forest* is remarkably low even by the standards of its neighbouring countries. In 1980, at the start of Venezuela's growth collapse, the country's *open\_forest* stood at just 13.8% of the world average and 15.7% of the South American average. It also had a substantially lower value of *open\_forest* than its three neighbors, Colombia, Brazil and Guyana (though it surpassed Guyana in the mid-eighties). Interestingly, it is also significantly lower than Mexico's, which may account for Mexico's much higher capacity to react to its decline in oil revenues in the eighties.

Venezuela's low *open\_forest* appears to be a common characteristic of oil exporting countries. Figure 11 presents the scatter plot of *open\_forest* against per capita GDP in 1975. Fuel-exporting countries - countries which had a share of fuel exports in total exports greater than 80% in 1975 - are denoted with an "x" in the scatter plot. These countries have significantly lower levels of open forests than would be predicted by their level of income. Indeed, the average open forest for a fuel exporter is 2.17 log points lower than for a non-fuel exporter, even after controlling for differences in income levels. In other words, it appears that the set of specialized inputs necessary for the production of oil are not very useful when it comes to producing other high-value goods.

Figure 12 decomposes Venezuela's *open\_forest* into the contribution to the index of every product that is not currently being produced (each product is one SITC 4-digit category, so that these graphs represent up to 1006 products). The graph plots inverse density (a measure of how far each good is from the current production basket) against a measure of sophistication, given by the difference between the good's PRODY measure and the average PRODY of the economy's exports. The decomposition is presented for three years: 1980, 1990, and 2000. As this figure shows, the products that Venezuela could produce but was not producing and were nearest to their current production basket (in terms of inverse density) were cereals and capital intensive goods, the bulk of which had a lower level of sophistication (PRODY) than current Venezuelan exports. The two nearest clusters of higher value goods were chemicals and machinery. However, both of these groups were a significant distance apart, at average inverse densities of 3.65 and 3.75 respectively. By comparison, many upscale Chinese alternative exports are within an inverse density of 1 in this same scale (Hausmann and Klinger, 2006). As the scale is logarithmic, this can be interpreted as showing that upscale Venezuelan manufacturing exports in 1980 were almost four times less similar to current products than upscale Chinese alternative exports. Figure 10 also shows that by 2000, the distance between Venezuela's exports and alternative upscale exports has declined - to 2.45 and 2.61 respectively for chemicals and machinery, but were still quite far by the standards of more dynamic economies like China's.

Although Venezuela's low *open\_forest* value is suggestive of its low export flexibility, how much do we know about the effect of export flexibility on the magnitude of growth collapses? Hausmann, Rodríguez and Wagner have recently analyzed this issue in an empirical study of 535 episodes in which growth decelerates to negative rates. Their study analyzes both the causes for these



growth decelerations as well as the determinants of the speed of recovery. Interestingly, they find that *open\_forest* is a quantitatively strong and robust predictor of the probability of recovery from a recession. Their empirical exercise uses the statistical methodology of survival analysis to study the determinants of the duration of economic crises. The method of duration regressions allows them to address a problem that plagues the existing literature, which is the lack of a systematic method for dealing with the problem of censoring – crises that have not ended by the most recent year of data. If we have  $n$  countries with  $t_1 \dots t_n$  crises duration, the duration regression framework concentrates on finding the estimate of the probability density function  $f(t)$  with associated survival time  $S(t)$  that maximizes the likelihood function:

$$L = \prod_i f(t_i)^{\delta_i} S(t_i)^{1-\delta_i} \quad (3)$$

where  $\delta_i$  is an indicator variable that takes the value 0 if the peak per worker GDP has not been reached by the last observation in the sample. The authors study the determinants of crisis duration both under alternative parametric functional forms for  $f(t)$  and by non-parametric estimation of  $f(t)$ , and address country level heterogeneity by frailty adjustments and variance-corrected estimators. In Table 7 we revisit their results. In contrast to their specification, however, we include a dummy variable for oil exporting countries. As can be seen in column (1), the probability of recovery from a crisis is substantially lower for oil than for non-oil exporting countries. The magnitude is substantial: the probability of recovery from a crisis (the hazard rate) in any particular year is 59.4% lower ( $1 - \exp(-.902)$ ) on average for oil-exporting countries. Columns (2) and (3) show that this effect is robust quantitatively and statistically to controlling for initial per working age person GDP and continent and decade dummies. However, as soon as we control for *open\_forest* (column (4)) the correlation between the oil exporting dummy and crisis duration becomes insignificant and indeed, changes sign. In columns (5) and (6) we introduce a set of alternative controls for democracy, inequality, social conflict, sudden stopa, and inflation, none of which are significant. Our key result is not affected: *open\_forest* is a robust predictor of crisis duration, and trumps the effect of oil exporting.

Table 8 explores the extent to which the performance of the *open\_forest* variable is determined by the measure of product sophistication PRODY, by presenting results for similar regressions in which the *open\_forest* indicator is unweighted by any sophistication measure. This is a closer measure to the density of the space of unexploited profit opportunities. In column (1) we include both *open\_forest* and the density variable, and show that the measures are so collinear that the regression cannot identify separate effects. In column (2) we drop *open\_forest* and keep the density indicator and find that its effect is indeed robust and trumps the oil exporting dummy. Columns (3) and (4) introduce the same set of controls as the last two columns of Table 7 and find that the robustness of the density indicator remains. Indeed, the oil exporting dummy is now close to statistical significance ( $p=.101$ ), with a *positive* sign, indicating that if an oil exporter were to manage to have a similar density indicator than a

comparable non-oil exporter, we may even expect it to have a faster recovery. This does not happen in general because oil exporters have lower densities.

The results of Table 7 imply a considerable effect of *open\_forest* on the probability of recovery from crises. In order to understand the magnitude of this effect, note that a coefficient of .575 (the estimate from column (4) of Table 7) implies that a one-standard deviation increase in *open\_forest* generates an increase of 90.5% in the probability of leaving the crisis ( $\exp(.557) * \text{sd}(\textit{open\_forest})$ ). One way to understand the effect of these results is by studying how the probability of Venezuela's recovering from its growth collapse would change if it had different values of *open\_forest* in 1975, holding fixed the level of all other explanatory variables at their historical values. We undertake this exercise in Table 9. Row 1 starts by considering the model estimate for Venezuela at its historical *open\_forest* value. The exercise is based on the parameter estimates of the model in equation (5) of Table 7. The probability of recovering from the crisis in any given year is estimated at .062, and the expected duration time of the crisis predicted by the model to be 17.29 years. In other words, the model predicts that Venezuela would be expected to take more than 17 years in recovering its peak per worker GDP. Row 2 considers the case in which we use as a reference the average *open\_forest* value for all South American countries. In this case the expected duration of crisis falls to 6.22 years. If Venezuela had instead had the *open\_forest* of its three neighboring countries (Colombia, Brazil, and Guyana), we see that its expected crisis duration time falls to just 5.71 years. The next exercise shows the effect of having the *open\_forest* of the set of fast-growing East Asian countries. In this case, the expected crisis duration declines to 3.39 years. In the last row, we consider the counterfactual of "Venezuela without oil" – that is, Venezuela with the historical values of all variables but with the *open\_forest* of a typical non-oil exporting country at its level of income. We see that crisis duration would have been only 4.12 years in expectation.

The key conclusion that we draw from this exercise is that oil exporting countries do not have an easy time developing new export products. Their difficulties come from the fact that there are few high-value goods which can be produced with the set of specialized inputs, technological know-how, and institutional development that are appropriate for oil production. This makes the product space relatively sparse for these countries. This may not be a problem if oil production is growing – in that case there is no need to develop alternative export sectors. But it can become a substantial hindrance to recovering from crises if doing so requires moving into the production of new goods.

## **6. Concluding Comments**

This paper has provided a new explanation for Venezuela's growth collapse. We have argued that Venezuela's failure to recover from the recession that it fell into during the late seventies is due in part to its inability to develop new export sectors. This inability can be traced to a characteristic that current Venezuelan specialization patterns share with those of most other oil exporting countries: the specialized inputs, skills, and institutions that are appropriate for use in oil

production are not easily transferable to other goods. Venezuela, in other words, inhabits a sparse area of the product space, a fact that hinders its capacity to respond to export collapses by developing alternative export industries.

We have suggested that any coherent explanation for the Venezuelan growth collapse must pass two simple tests. First, it must explain why Venezuelan economic performance differs so much from that of the rest of the region. Explanations that blame policy failures or social conflict for Venezuela's lackluster growth do not pass this test, as Venezuela is not markedly different from the rest of the region in these dimensions. Second, it must explain why Venezuelan economic performance changed so dramatically in the seventies. Explanations that blame rent-seeking or institutional quality for Venezuela's growth performance are incapable of explaining why the same institutions and the same levels of rent-seeking were compatible with the highest growth in the region for the half-decade starting in 1920.

Our explanation, in turn, easily passes these two tests. As we have shown above, Venezuela's export flexibility is considerably lower than that of most other Latin American nations. This is due to the simple fact that, unlike the rest of the region, Venezuela is an oil exporter that inhabits a sparse region of the product space. Furthermore, lack of export flexibility need not be a hindrance to a country when its traditional exports are growing, as was the case for Venezuela before the seventies. If you are experiencing high export growth in traditional sectors, you have no need to move to alternative exports and export flexibility has no value. It is when traditional exports start doing poorly that you need to reallocate resources to new sectors. Venezuela's low export flexibility can thus explain why the country did not recover from the crisis it has experienced since the late seventies while at the same time being compatible with its high growth during the preceding period.

It is important to point out that our explanation is only a partial explanation of Venezuelan economic growth. While the lack of development of alternative export sectors can help explain the decline in capital accumulation that occurred during the growth collapse, it does not explain the collapse in total factor productivity which, as we have shown, occurred at an annual rate of -0.84% between 1978 and 2001. Other papers in this project deal directly with the causes for this decline, dealing with causes ranging from the decline in public infrastructure investment, growing stringency of labor market regulations, and the collapse in financial intermediation.

Our explanation can shed more general light on the vast literature concerning the "Dutch Disease." As we discussed in the introduction, the observation that resource abundant economies tend to grow more slowly, first made in the cross-country growth context by Sachs and Warner (1997), has spurred a huge literature. Our paper suggests that what may make resource abundant countries stand out is not necessarily their aggregate growth performance but rather their incapacity to recover from adverse shocks. It thus points to the need to closely examine asymmetries in the response of growth to external shocks and to seriously study the possibility that countries may fall into "specialization traps" whereby they end up occupying a sparse region of the product space that is

difficult to exit. A fuller exploration of these ideas in the cross-national context offers an interesting avenue for future research.

## 7. Appendix: The closed economy model.

Suppose that capital accumulation occurs through domestic savings, with individuals assumed to save a constant fraction of their income  $s$ . As capital accumulation is financed by domestic savings, the capital stock is owned by domestic residents, who own no other capital. Equations (1)-(5) are as above, with equation (6) replaced by:

$$P_m AK^{\alpha} L_m^{1-\alpha} = (\gamma(1-s)(w + rk) + \bar{g})\bar{L} \quad (\text{A.1})$$

The capital stock will grow over time according to:

$$\dot{K}_t = s(w\bar{L} + rK) - \delta K \quad (\text{A.2})$$

We have omitted time subscripts as we will concentrate on the steady state, which is given from equation (A.2) by:

$$s w \bar{L} = (\delta - rs)K. \quad (\text{A.3})$$

Note that as equations (1)-(5) are the same, it is still the case that  $K$  is given by (7), with  $r$  now an endogenous variable. From the steady state condition, the steady state rate of return  $r^{ss} = \frac{\delta\alpha}{s}$ , so that in the steady state,

$$K = K_t + K_m = \left(\frac{\delta}{As}\right)^{\frac{1}{\alpha-1}} \bar{L}, \quad (\text{A.4})$$

which establishes that the capital stock is invariant to increases in oil revenues under incomplete specialization, just as in the model with capital mobility. Employment in non-tradables is given by:

$$L_m = \bar{L} \left\{ \gamma(1-s) + \frac{\bar{g}}{A \left(\frac{\delta}{As}\right)^{\frac{\alpha}{\alpha-1}}} \right\} \quad (\text{A.5})$$

As before, there is a threshold  $g_c^* = (1 - \gamma(1-s))A \left(\frac{\delta}{As}\right)^{\frac{\alpha}{\alpha-1}}$  beyond which full specialization develops. It is easy to check that after this point the capital stock becomes:

$$K = \left(\frac{\delta}{s}(1 - \gamma(1-s))\right)^{-1} \bar{g} \bar{L} \quad (\text{A.6})$$

so that the capital stock again becomes fully responsive to shifts in oil revenues.

Note that equations (8) and (14) are similar. The differences come from three facts: (i) Equation (14) uses the steady-state level of the interest rate instead of  $\bar{r}$ , (ii) As the closed economy model has no domestic ownership of foreign capital,

the term  $\overline{rk}^h$  disappears from all expressions, (iii)  $s$  plays the same role in the closed economy model than  $\alpha$  in the open economy one. This last result reflects the fact that in the open economy model  $\alpha$  reflects the share of additional oil revenue – which are converted one by one into increases in demand for non-tradables – that international capital owners can expect to receive and that thus call forward greater capital inflows, whereas in the closed economy model  $s$  reflects the fraction of these revenues that will ultimately be channeled towards capital accumulation.

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Table 1: Growth rates according to alternative data sets

	Peak Year	1950-60	1960-70	1970-80	1980-90	1990-00
<b>Central Bank</b>	1977	3.59%	2.33%	0.62%	-1.94%	-0.15%
<b>Rodríguez</b>	1977	.	2.18%	0.30%	-1.93%	0.24%
<b>Maddison</b>	1977	2.57%	1.01%	-0.51%	-1.99%	0.94%(*)
<b>Penn World Tables</b>	1970	2.83%	2.95%	-2.79%	-1.36%	-0.80%
<b>World Bank</b>	1977	.	1.46%	-0.76%	-1.75%	-0.15%
<b>Baptista</b>	1977	2.12%	2.22%	0.33%	-2.68%	- 0.39%**
<b>Minimum</b>		2.12%	1.01%	-2.79%	-2.68%	-0.80%
<b>Maximum</b>		3.59%	2.95%	0.62%	-1.36%	0.94%
<b>Range</b>		1.46%	1.94%	3.41%	1.32%	1.74%

(\*) - Refers to 1990-1998

(\*\*) - Refers to 1990-1999

Table 2: Terms of trade-adjusted real GDP per capita, Penn World Tables

	1950-00	1950-80	1980-00
Venezuelan Economic Growth	1.36%	2.90%	-0.96%
World Average	2.10%	2.54%	1.11%
Percent Rank	69%	36%	84%
Latin American Average	1.36%	2.37%	0.87%
Percent Rank	43%	25%	92%

Table 3: Magnitude and timing of decline in oil and non-oil production, alternative indicators.

	1968 prices	1984 prices	Tornqvist chained
<b>Oil sector</b>			
<b>Per Capita</b>			
Peak Year	1957	1957	1957
Decline from Peak	-67.00%	-66.65%	-68.43%
<b>Per Worker</b>			
Peak Year	1970	1970	1970
Decline from Peak	-44.97%	-44.85%	-49.16%
<b>Non-oil sector</b>			
<b>Per Capita</b>			
Peak Year	1978	1978	1978
Decline from Peak	-19.95%	-23.79%	-18.64%
<b>Per Worker</b>			
Peak Year	1978	1978	1978
Decline from Peak	-36.60%	-39.65%	-35.57%

Table 4: Components of per capita real fiscal revenues, 1940-2001

	Crude Production (mbd)	Population	Production per capita	Average export price (2001 US\$)	Participation of fiscal income in gross export revenue
1940-49	852,48	4.387.085	0,194	12,52	28,22%
1950-59	2143,60	5.990.000	0,358	15,28	31,15%
1960-69	3319,15	8.595.000	0,386	10,85	48,82%
1970-79	2821,95	12.274.000	0,230	26,03	67,88%
1980-89	1878,98	16.953.000	0,111	37,22	63,43%
1990-2001	2711,67	22.089.936	0,123	18,40	54,46%

Source: López Obregón and Rodríguez, 2001

Table 5: Total Factor Productivity Growth Decompositions in the Non-Oil Sector, Heterogeneous Capital and Labor

Years	TFP Growth	Non-Oil GDP Growth	Non Residential Capital		Residential Capital		Machinery and Equipment		Total Capital	
			Growth	Contribution	Growth	Contribution	Growth	Contribution	Growth	Contribution
1957-01	0.36%	1.35%	0.91%	0.10%	1.26%	0.04%	0.78%	0.31%	0.94%	0.45%
1957-78	1.78%	3.81%	3.36%	0.32%	4.26%	0.12%	3.32%	1.16%	3.55%	1.60%
1978-01	-0.84%	-0.90%	-1.33%	-0.16%	-1.49%	-0.06%	-1.54%	-0.59%	-1.44%	-0.81%
	No Schooling Attained		Primary Schooling Attained		Secondary Schooling Attained		Higher Schooling Attained		Labor Force Growth	
	Growth	Contribution	Growth	Contribution	Growth	Growth	Growth	Contribution	Growth	Contribution
1957-01	-2.20%	-0.28%	4.48%	0.55%	-0.23%	-0.04%	6.51%	0.31%	0.74%	0.54%
1957-78	-1.57%	-0.28%	6.66%	0.87%	-1.94%	-0.37%	7.17%	0.21%	0.44%	0.43%
1978-01	-2.77%	-0.25%	2.49%	0.49%	1.33%	0.14%	5.92%	0.38%	1.01%	0.75%

	Oil Exports		Growth	Non-oil Exports		Growth	Total Exports		Growth	Ratio of 1981 Non-oil to Total Exports
	1981	2002	Rate	1981	2002	Rate	1981	2002	Rate	
Mexico	329	146	-3.86%	127	1,494	11.73%	456	1,640	6.09%	0.28
Oman	5,156	3,582	-1.73%	322	1,054	5.65%	5,478	4,636	-0.79%	0.06
Bahrain	15,512	5,990	-4.53%	1,165	2,645	3.91%	16,677	8,636	-3.13%	0.07
Indonesia	159	68	-4.07%	40	209	7.86%	199	277	1.57%	0.20
Saudi Arabia	16,262	3,101	-7.89%	120	370	5.39%	16,382	3,472	-7.39%	0.01
Trinidad and Tobago	4,144	1,809	-3.95%	482	1,202	4.35%	4,626	3,010	-2.05%	0.10
Venezuela, RB	1,699	813	-3.51%	131	200	2.01%	1,830	1,013	-2.82%	0.07
Ecuador	251	162	-2.08%	155	244	2.17%	406	406	0.00%	0.38
Algeria	992	596	-2.43%	20	24	0.78%	1,012	620	-2.34%	0.02
Nigeria	320	165	-3.49%	10	1	-14.59%	329	165	-3.63%	0.03

Source: World Bank (2002)

**Table 7: Weibull Duration Regressions: Open Forest**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil Exporter	-0.902 (3.06)***	-1.281 (2.87)***	-0.98 (2.12)**	0.042 (0.08)	0.399 (0.63)	0.727 (0.97)	1.19 (1.58)
Log GDP per Working Age Person		0.258 (2.73)***	-0.181 (1.13)	-0.275 (1.29)	-0.634 (2.49)**	-0.789 (2.62)***	-1.003 (2.85)***
Open Forest				0.575 (3.53)***	0.697 (3.39)***	0.997 (3.59)***	1.153 (3.80)***
Polity Democracy Index					0.035 (1.53)	-0.087 (0.91)	-0.105 (0.95)
Gini*(1-Democracy)						-0.063 (1.49)	-0.075 (1.55)
Gini						-0.024 (0.77)	-0.015 (0.44)
Sudden Stop							-0.151 (0.66)
Log of Inflation							-0.049 (0.08)
Constant			-1.804 (4.90)***	-1.619 (3.73)***	-1.675 (3.45)***	-0.876 (1.24)	-0.909 (1.23)
Latin America			-1.975 (4.08)***	-1.195 (1.77)*	-1.068 (1.48)	-0.05 (0.05)	-0.045 (0.04)
Africa			-1.062 (1.87)*	-0.887 (1.30)	-1.328 (1.89)*	-1.105 (1.39)	-1.122 (1.31)
South and Central Asia			-0.875 (2.17)**	-0.19 (0.40)	-0.72 (1.25)	-0.426 (0.55)	-0.663 (0.80)
East Asia and Pacific			-2.411 (5.25)***	-1.808 (2.48)**	-1.641 (2.12)**	-2.156 (2.58)**	-1.773 (1.89)*
Central and Eastern Europe			-1.024 (2.50)**	-0.453 (0.93)	0.061 (0.10)	0.218 (0.31)	0.138 (0.19)
Middle East and North Africa			0.197 (0.62)	-0.72 (1.16)	0.362 (1.34)	0.07 (0.08)	0.147 (0.16)
Observations	535	331	331	230	199	173	154
Number of groups	180	149	149	101	87	76	64

Absolute value of z statistics in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Columns (3)-(7) also include a full set of decade dummies.

**Table 8: Weibull Duration Regressions, Density Indicator**

	(1)	(2)	(3)	(4)
Oil Exporter	0.293 (0.53)	0.669 (1.07)	1.094 (1.46)	1.227 (1.64)
Log GDP per Working Age Person	-0.245 (1.11)	-0.638 (2.55)**	-0.773 (2.65)***	-0.961 (2.76)***
Density of Product Space	2.479 (1.29)	0.724 (3.36)***	1.045 (3.63)***	1.256 (3.88)***
Open Forest	-1.775 (0.97)			
Polity Democracy Index		0.04 (1.72)*	-0.101 (1.06)	-0.105 (0.94)
Gini*(1-Democracy)			-0.071 (1.70)*	-0.075 (1.54)
Gini			-0.016 (0.52)	-0.016 (0.45)
Sudden Stop				-0.18 (0.78)
Log of Inflation				-0.112 (0.17)
Latin America	-1.551 (3.47)***	-1.592 (3.29)***	-0.88 (1.25)	-0.812 (1.09)
Africa	-1.19 (1.71)*	-1.063 (1.47)	-0.097 (0.11)	0.141 (0.14)
South and Central Asia	-0.731 (1.02)	-1.285 (1.85)*	-1.075 (1.37)	-0.957 (1.11)
East Asia and Pacific	-0.118 (0.24)	-0.687 (1.19)	-0.454 (0.59)	-0.538 (0.64)
Central and Eastern Europe	-1.631 (2.14)**	-1.577 (2.05)**	-2.056 (2.50)**	-1.699 (1.80)*
Middle East and North Africa	-0.342 (0.66)	0.096 (0.16)	0.204 (0.29)	0.263 (0.36)
Constant	14.889 (0.91)	2.939 (1.16)	4.034 (1.42)	4.828 (1.38)
Observations	229	198	172	154
Number of groups	100	86	75	64

Absolute value of z statistics in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All columns also include a full set of decade dummies.



**Table 9: Probability of Recovery and Expected Crisis Duration Times for Alternative Open**

Open Forest Level	Yearly Probability of Recovery	Expected Duration of Crisis
Venezuela Historical	0.062	17.291
South America	0.154	7.326
Neighboring Countries	0.200	5.711
East Asia	0.346	3.397
Venezuela - Oil	0.282	4.116

Simulations capture the expected probabilities of recovery (hazard rates) and mean crisis duration in years for a country that has the same values than Bolivia of all variables except for open forest, which is set to the historical values of the selected comparison groups in 1980. Neighboring Countries are Brazil, Colombia, and Guyana. East Asian Countries are Hong Kong, South Korea, Singapore, and China. Venezuela - Oil refers to a value of open forest equal to the historical value minus the average effect of oil abundance in a regression of Open forest on the log of GDP plus a dummy variable for oil exporting countries.

Figure 1: Per Capita Oil GDP, alternative base years

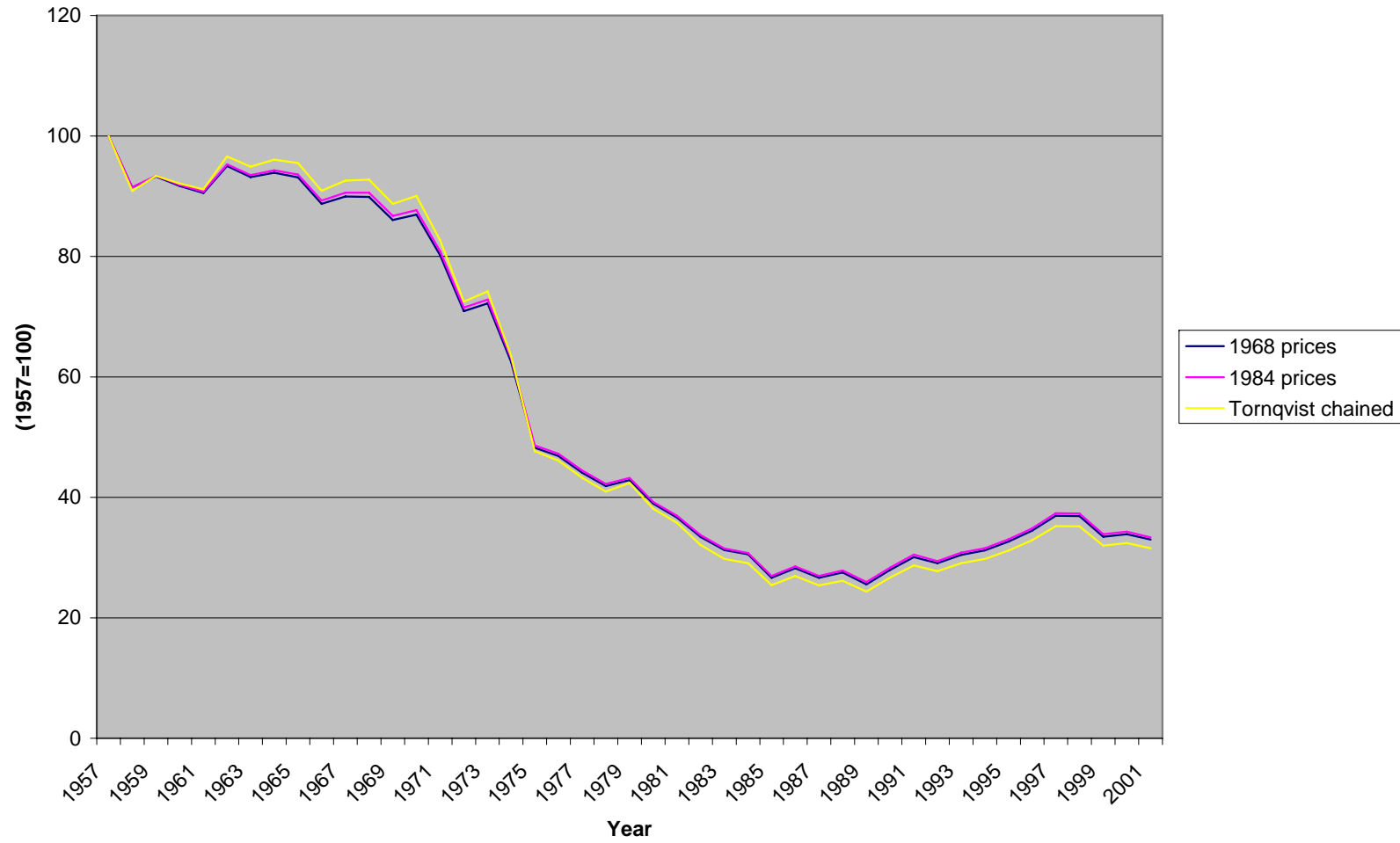


Figure 2: Per Capita Non-Oil GDP, Alternative Base Years

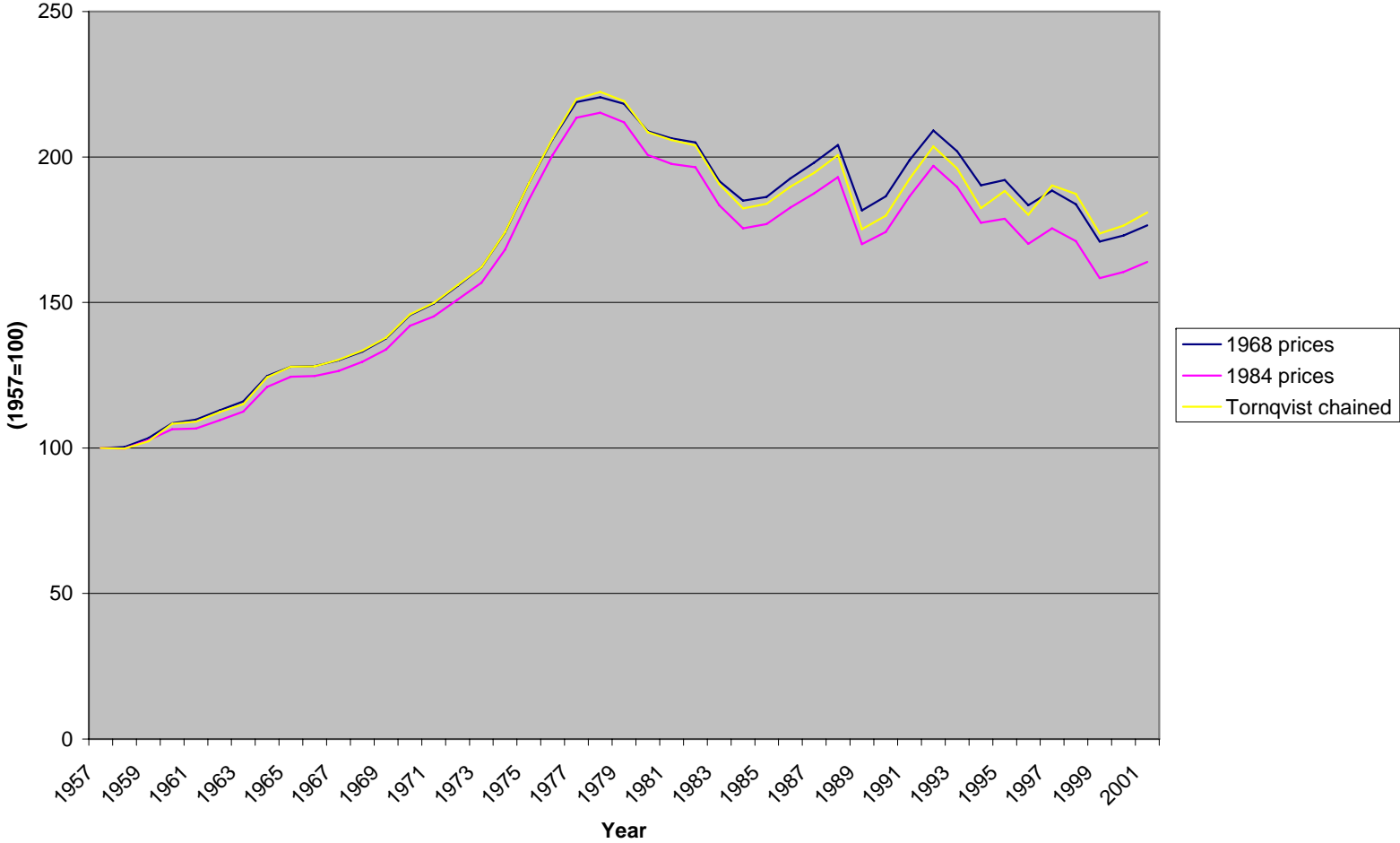


Figure 3: Per Capita Fiscal Oil Revenues in constant US\$. 1943-2001

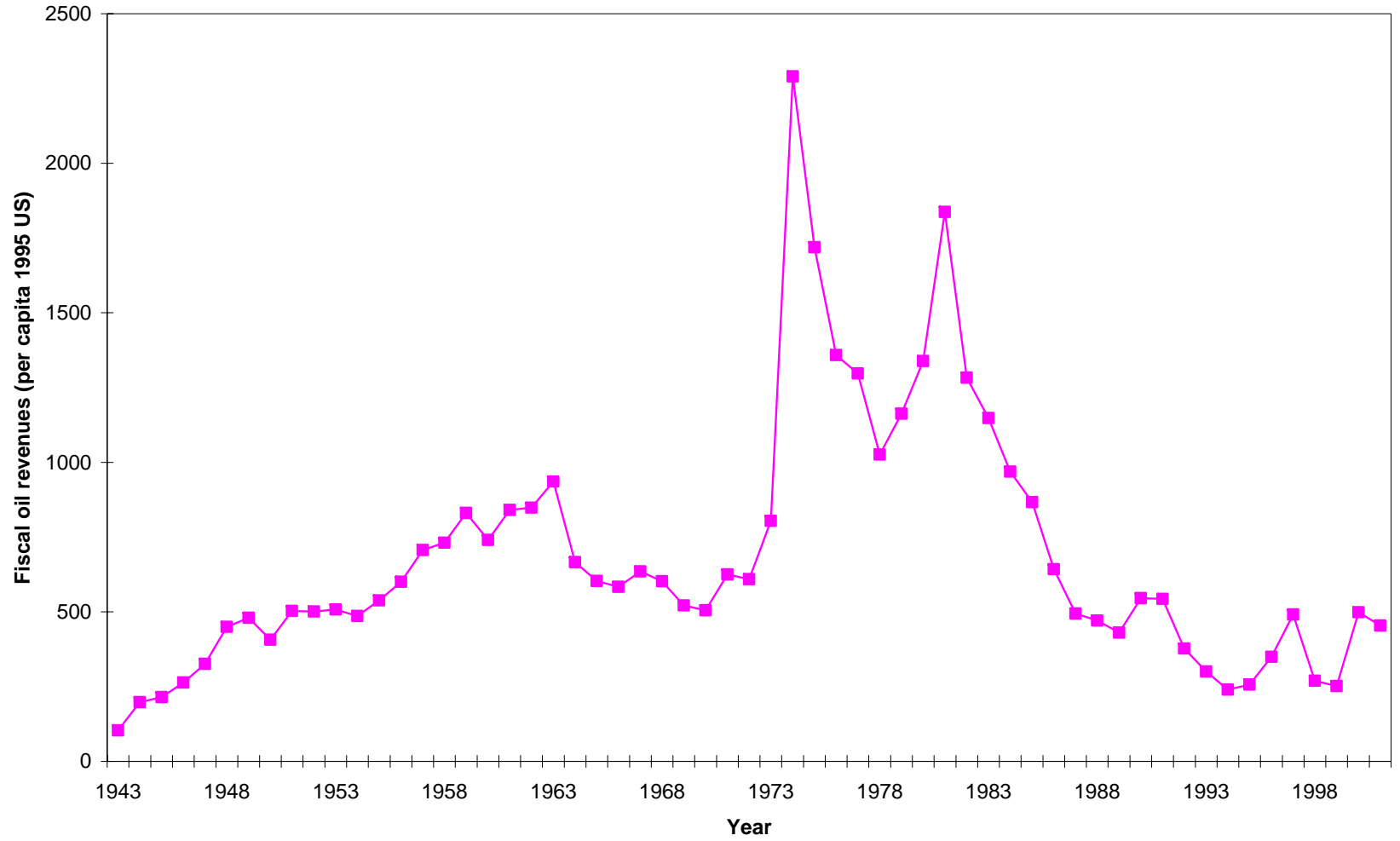


Figure 4: Capital Stock per Worker, Closed Economy Model

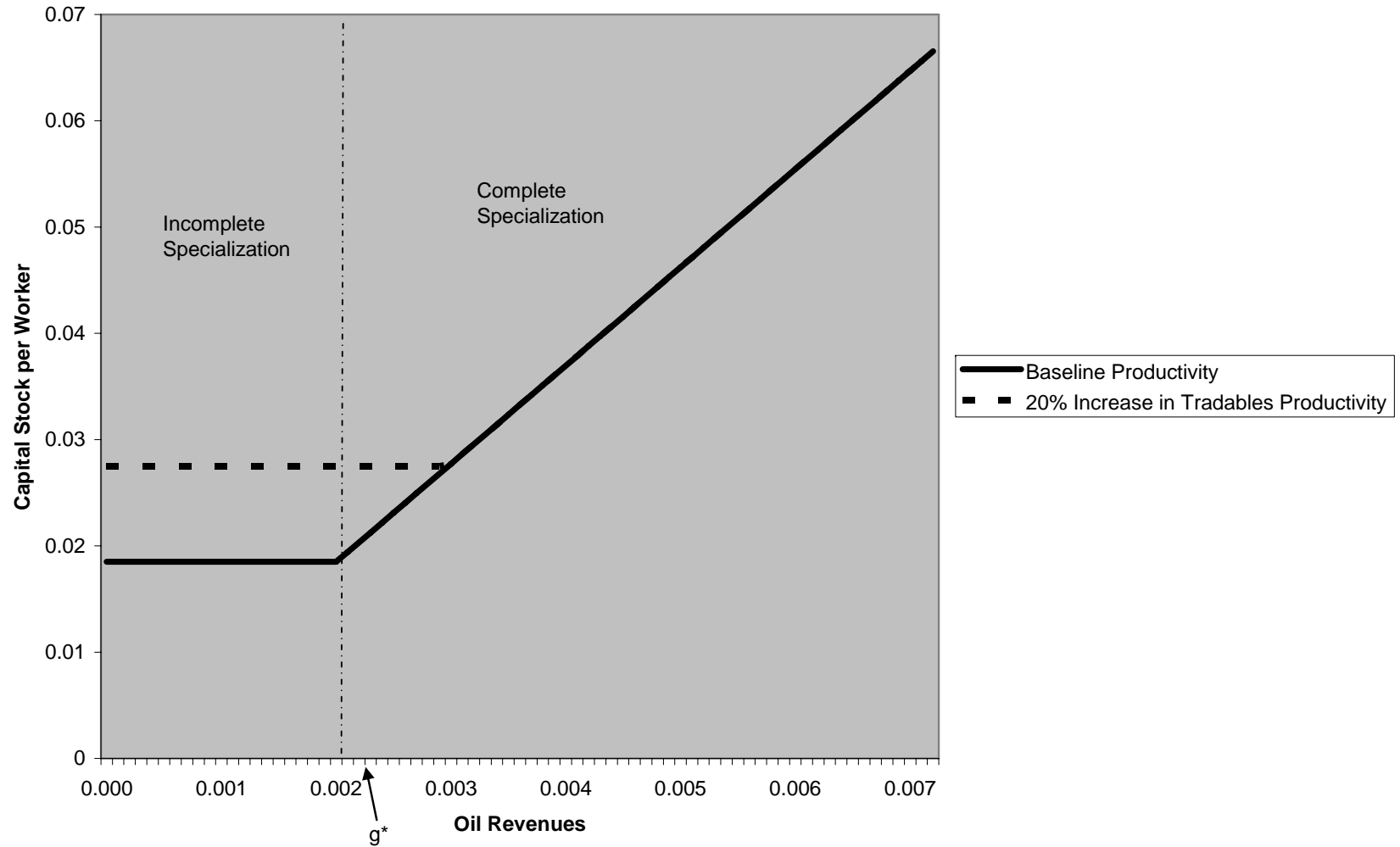


Figure 5A: Venezuela: Per Capita GDP and Exports

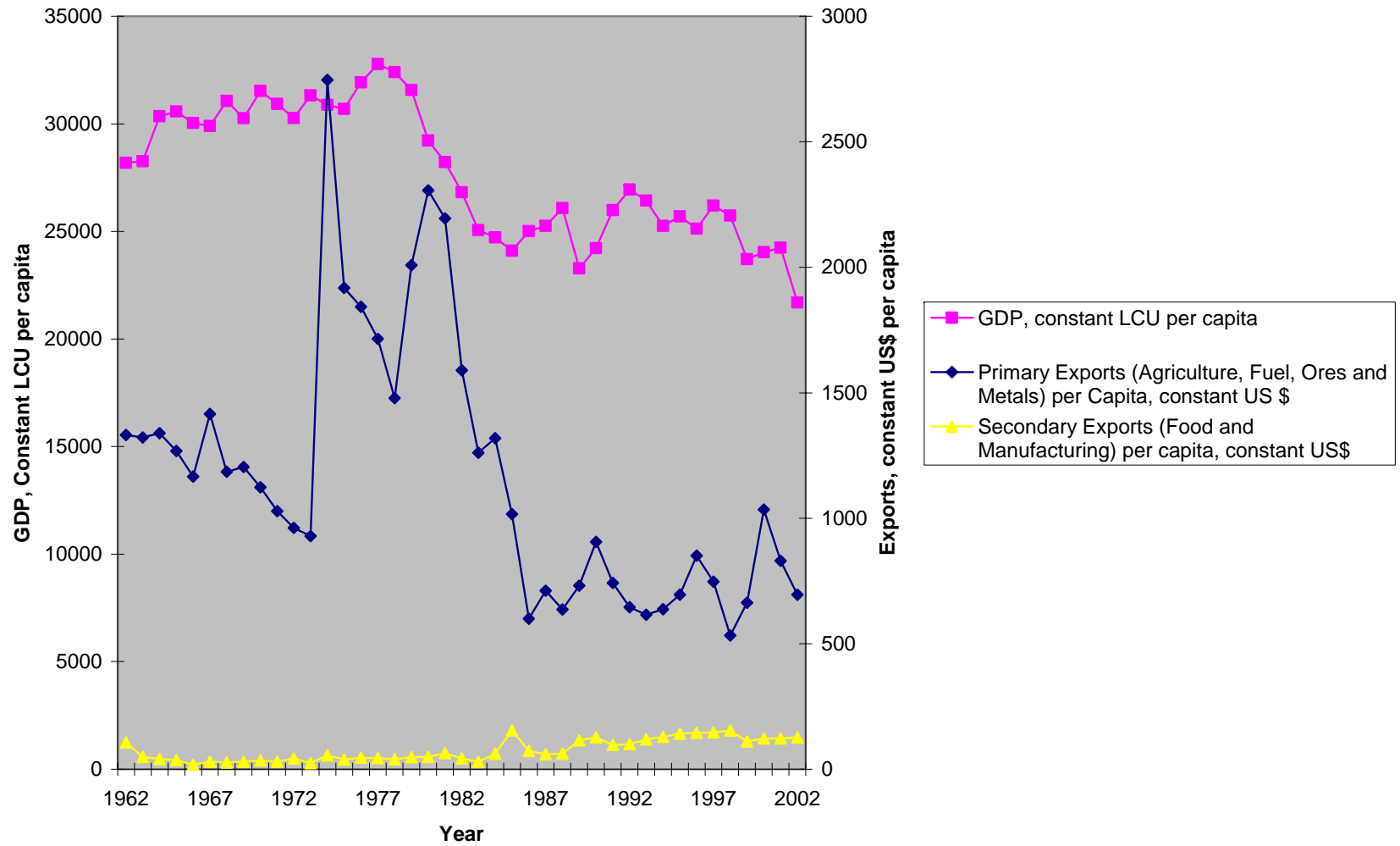


Figure 5B: Mexico: Per Capita GDP and Exports

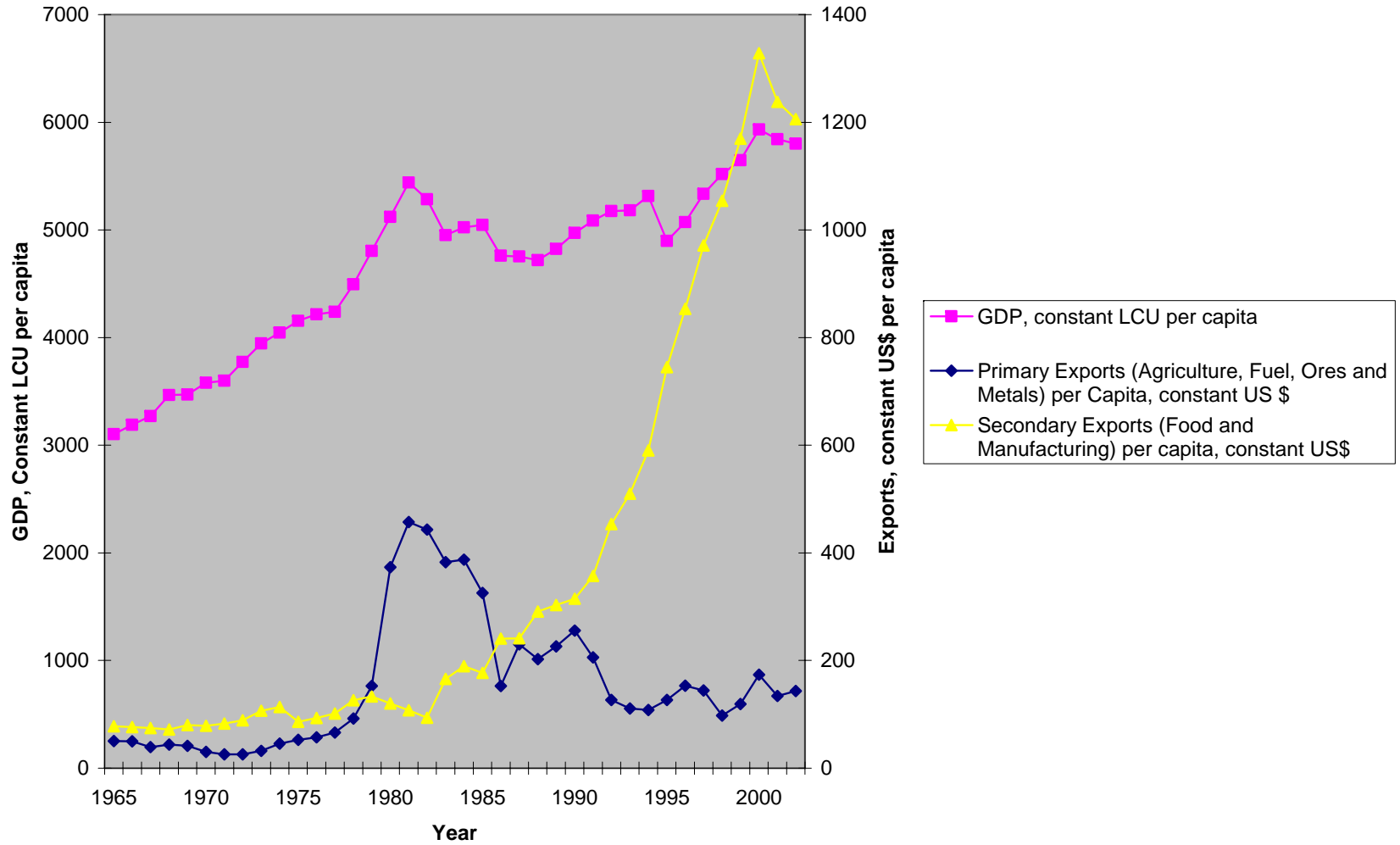


Figure 5C: Indonesia: Per Capita Exports and GDP, 1965-2003

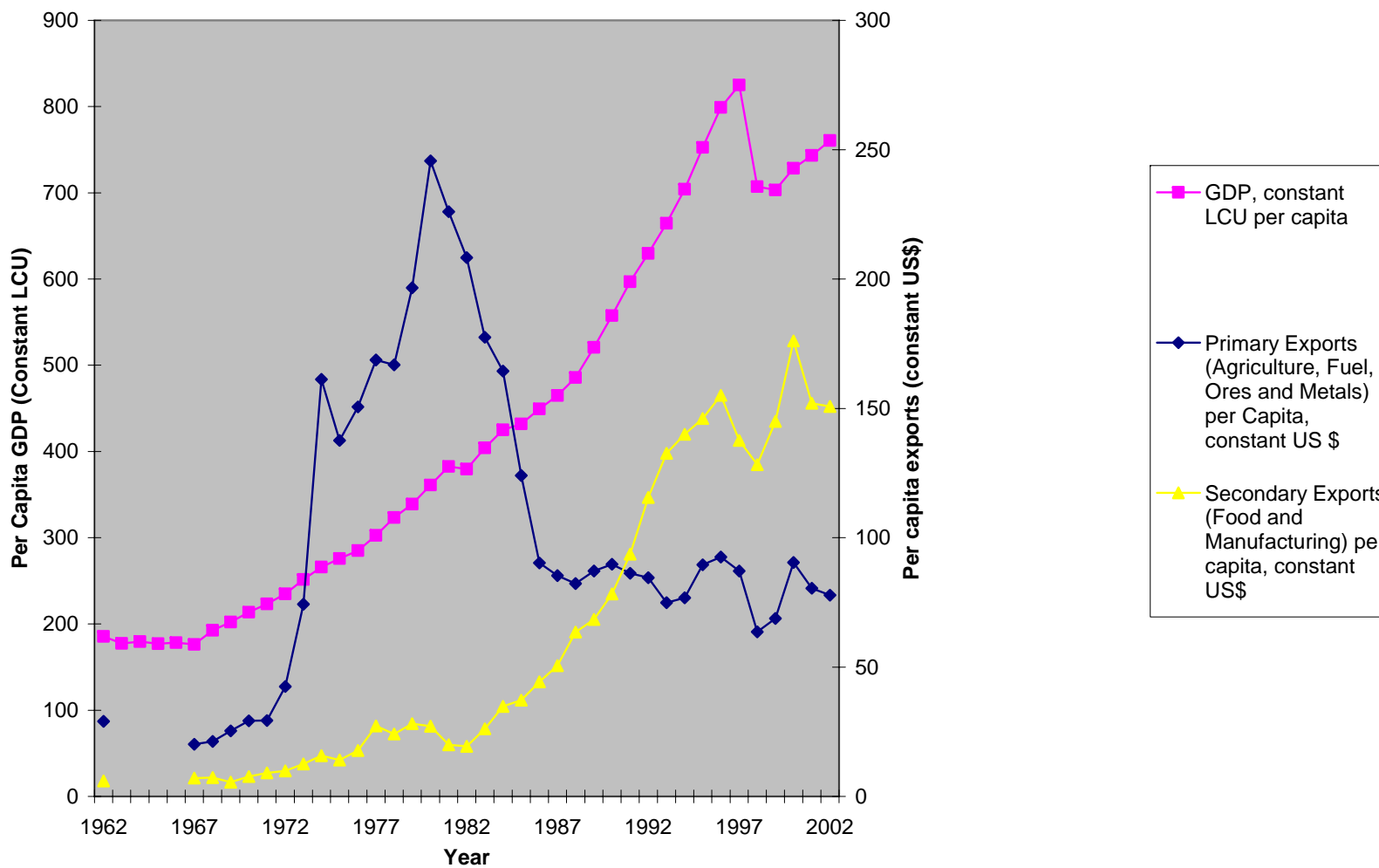
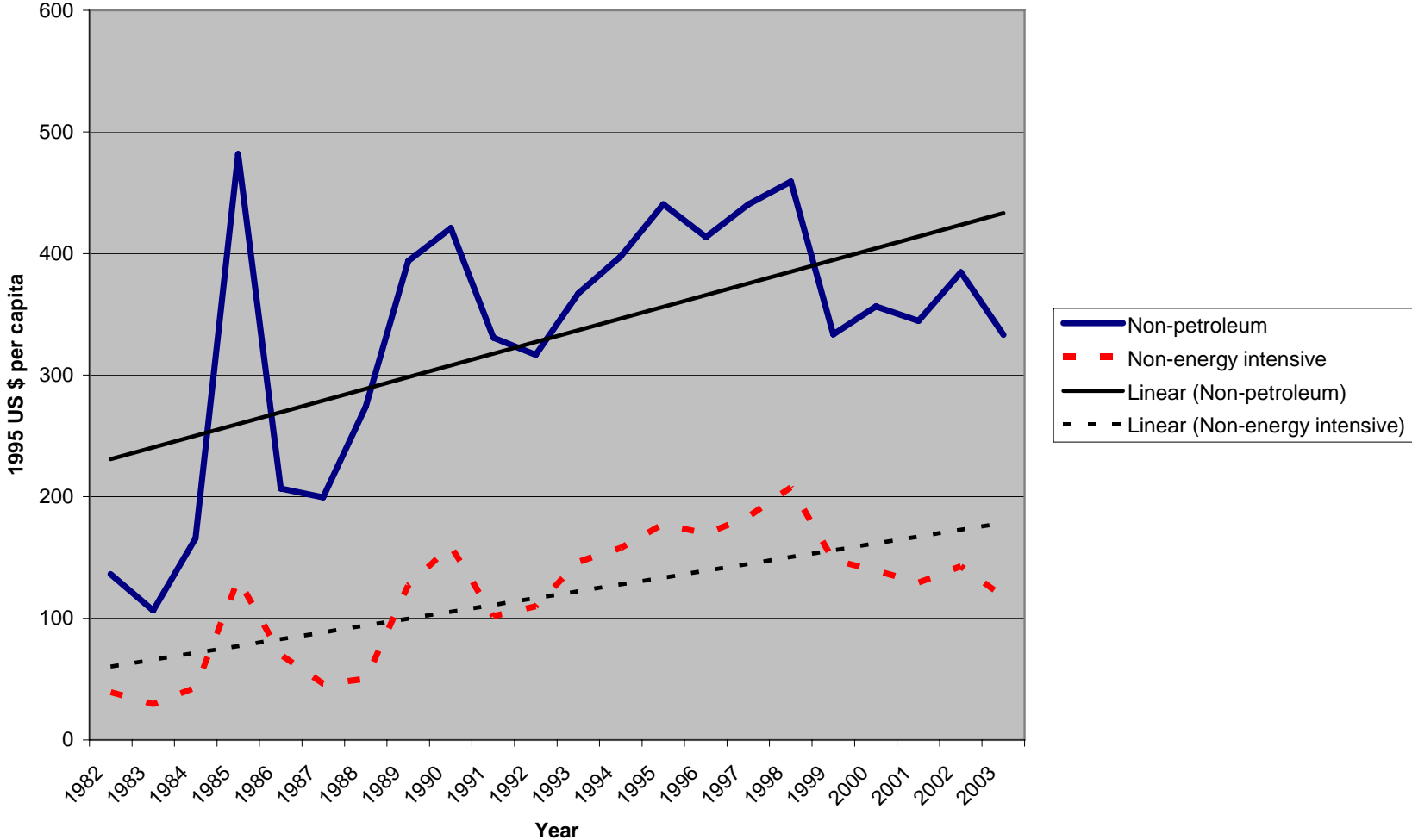
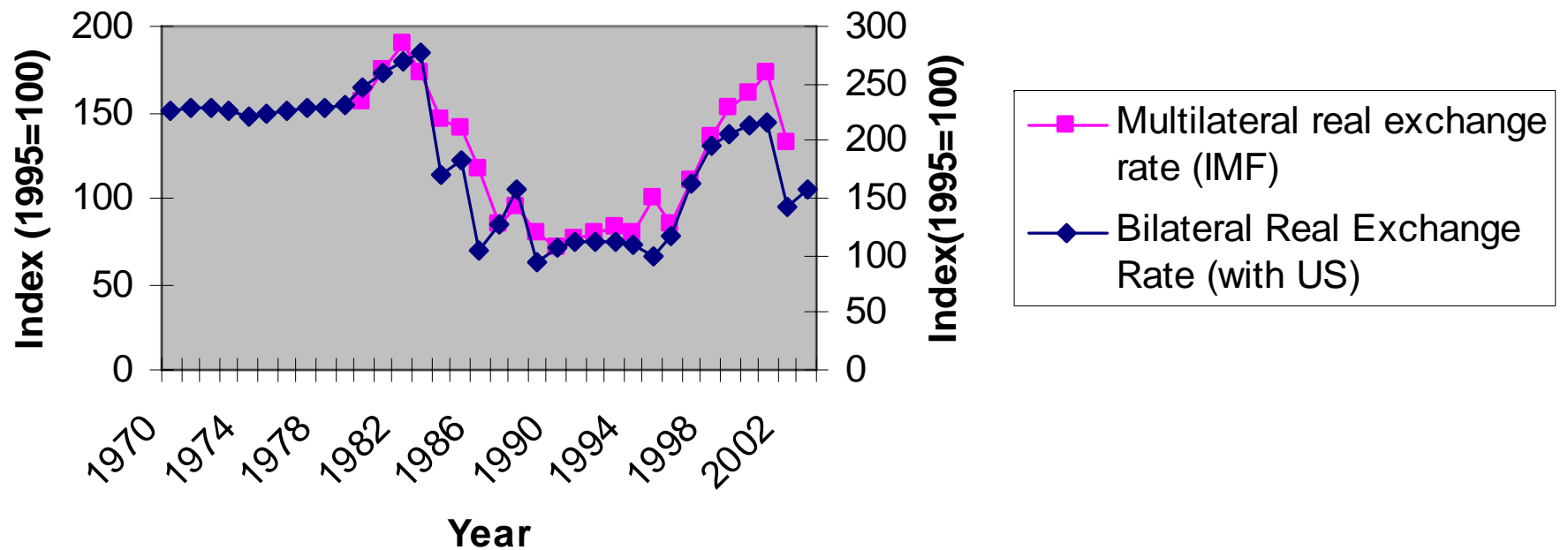




Figure 6: Non-oil exports, 1982-2003



## Real bilateral and multilateral exchange rate for Venezuela, 1970-2002



**Figure 8: Median Venezuelan Market Share, non-Oil non-Energy Intensive Sectors**



**Figure 9: Venezuelan Non-Energy Intensive Exports, by Region**

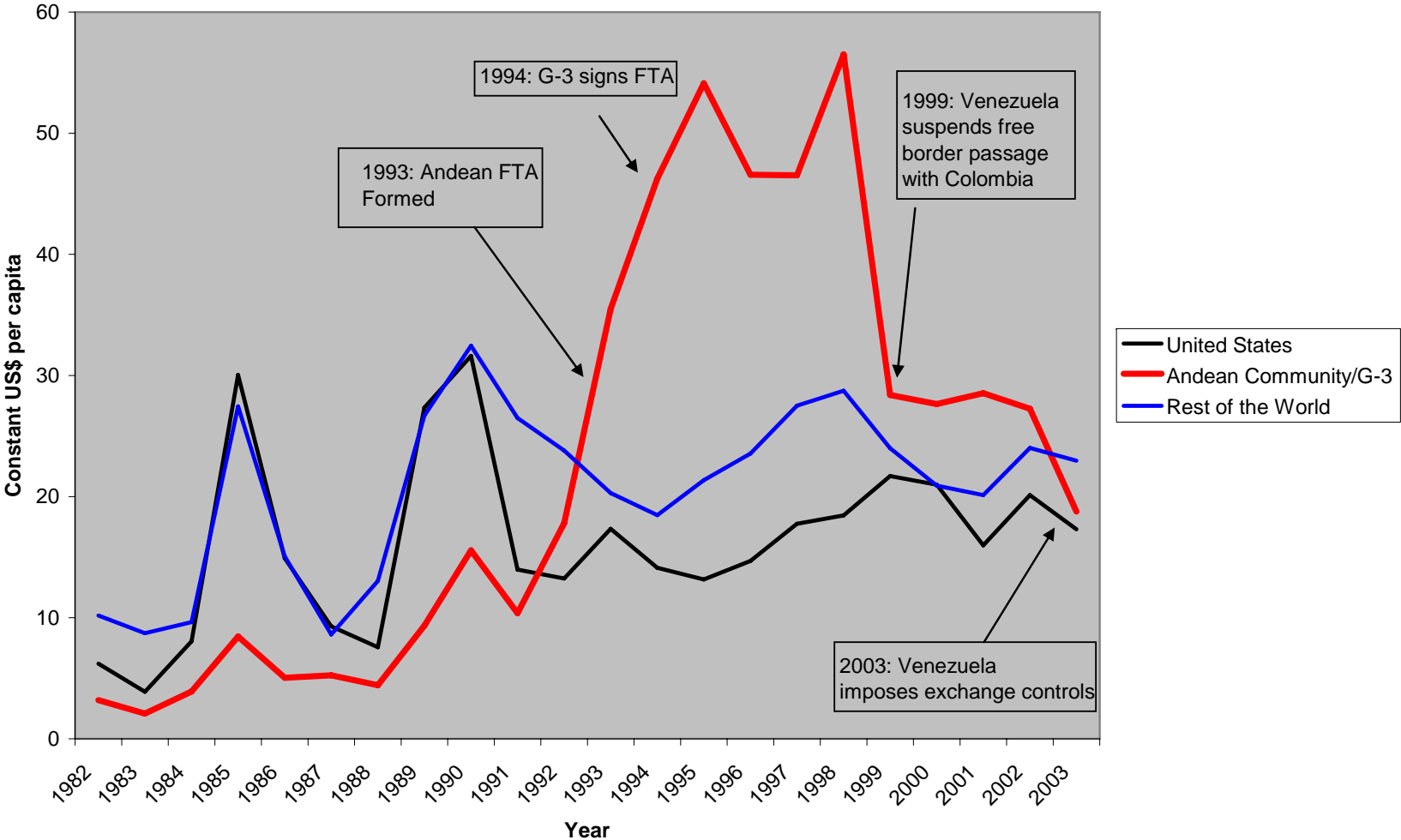
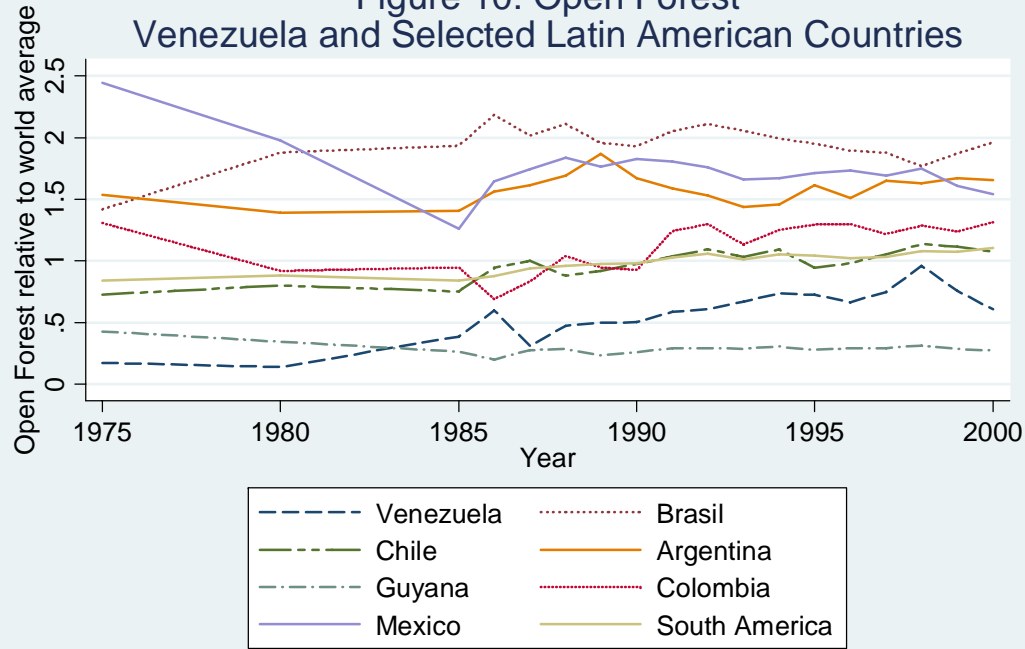


Figure 10: Open Forest  
Venezuela and Selected Latin American Countries



Source: Authors' calculations based on data from Hausmann and Klinger (2007)

Figure 11: Open Forest and per Capita GDP, 1975

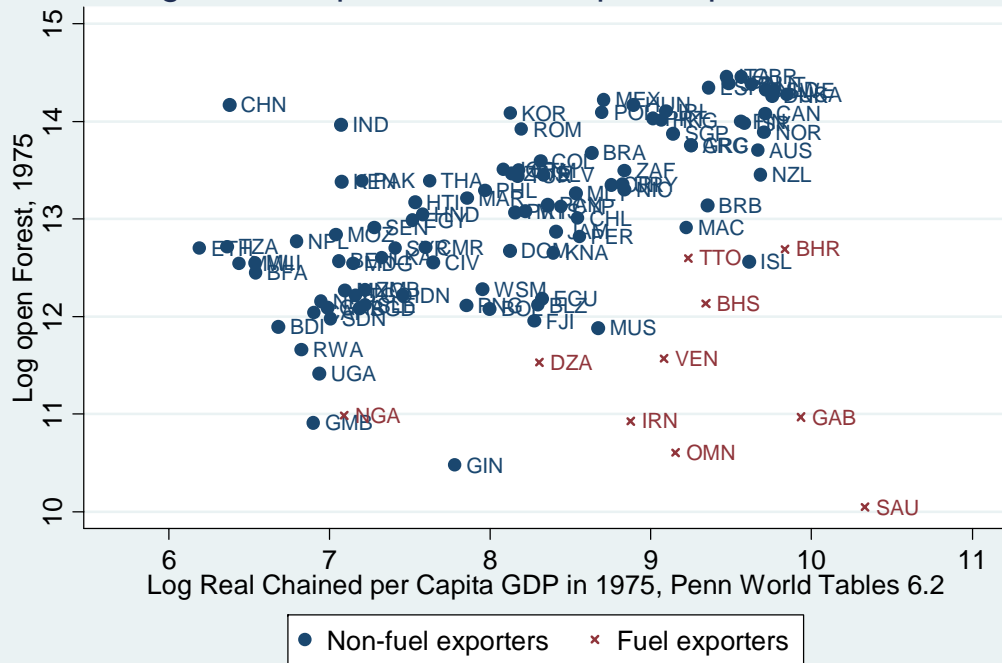
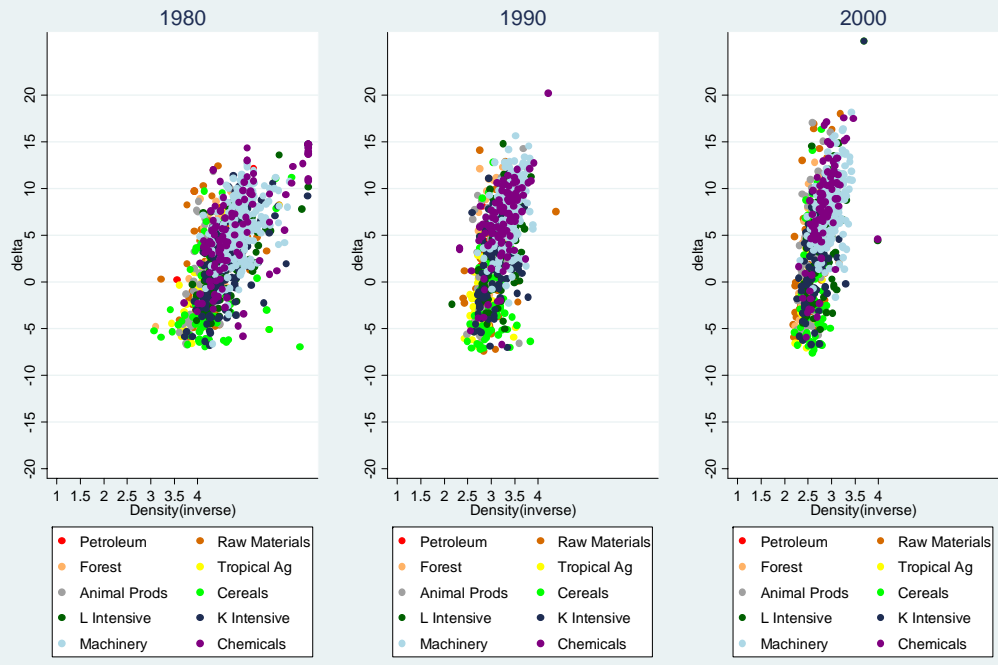


Figure 12: Decomposition of Open Forest, 1980-2000



## CHAPTER 3:

### Venezuela after a century of oil exploitation

Chapter for the book *Venezuela: Anatomy of a Collapse* \*

Osmel Manzano<sup>+</sup>

**Draft for comments. Do not quote or circulate.**

First Draft: December 2004

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#### Abstract

The Venezuelan oil sector's performance is reviewed and compared with the performance of the oil sector of similar oil-producing countries. The changes in oil fiscal revenue per capita over the last 60 years resemble those of the GDP per capita for Venezuela. After three decades of sustained growth, the oil sector collapsed in the 1980s and it has not recovered since. It is argued that to understand the behavior of the sector, it is important to divide the study into different periods, taking into account changes in both the way in which Venezuelan oil policy is formulated and implemented, and in the nature of international oil markets. It is further argued that the periods in which oil policy was relatively in line with international markets fundamentals were periods of expansion, while the periods in which oil policy seemed to diverge from those fundamentals were periods when fiscal revenue collapsed.

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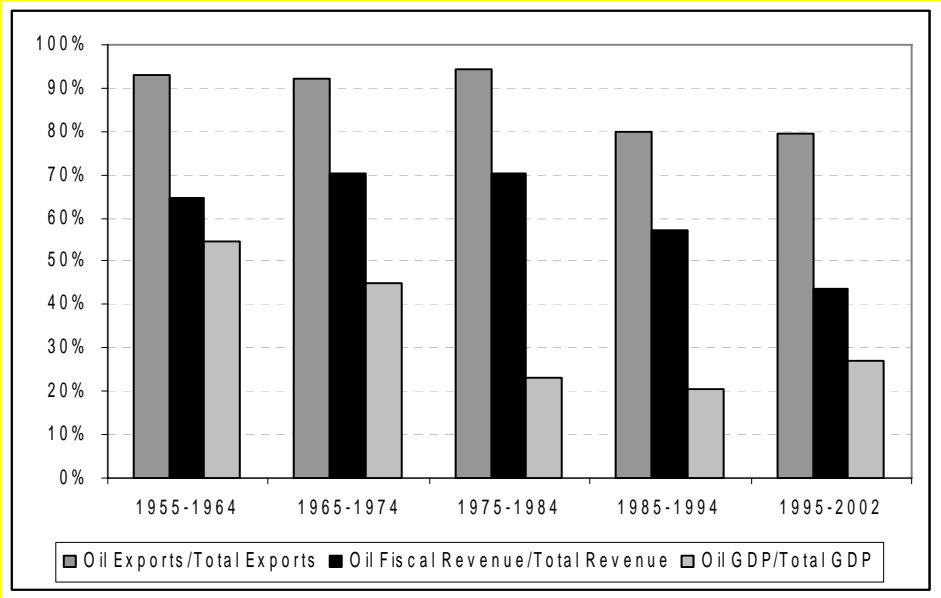
\* This book is edited by Ricardo Hausmann and Francisco Rodríguez.

<sup>+</sup> Corporacion Andina de Fomento and Universidad Catolica Andres Bello. I would like to thank the following for helpful comments and suggestions: Amy B. Barrigh, Graham Davis, Ricardo Hausmann, Ana Maria Herrera, William Hogan, Francisco Monaldi, Jose Pineda, Ian Sue Wing, Alejandro Puente, Francisco Rodriguez, Federico Sturzenegger, Ricardo Villasmil, and seminar participants at IESA (Venezuela), Northeastern University, John F. Kennedy School of Government and at the LACEA conference. I also thank Federico Ortega and Vanessa Alviarez for being excellent research assistants. All errors that remain are mine. I also acknowledge the International Center for Energy and the Environment at IESA (Venezuela), which provided financial support. This chapter was completed while I was in residence at the John F. Kennedy School – Respol YPF Fellows Program. The ideas and views expressed on this paper are solely my responsibility and do not necessarily reflect the ideas and views of the Corporacion Andina de Fomento. Comments are welcome at: manzanom@alum.mit.edu



When analyzing Venezuela’s economic performance, it is impossible not to consider the oil sector. As shown in Figure 1, even now, the sector represents 80% of exports, thus making it the largest source of foreign currency. It represents more than 40% of government revenue and in the past, this figure was as high as 70%. It is thus the biggest contributor to the fiscal sector. Finally, it comprises more than 25% of all economic activity.

**Figure 1. Importance of Oil in Venezuela**



Source: Author’s calculations based on MEM (various years) and IMF (2004)

Given the foregoing, it is important to understand the performance of the oil sector as it relates to the performance of the rest of the economy. As will be shown below, a case can be made for thinking that oil fiscal revenue has had an enormous effect on changes in the GDP per capita in Venezuela. Oil has been produced commercially in Venezuela since the beginning of the twentieth century. At that time, Venezuela was one of the poorest countries in the region. The available evidence suggests that oil played an important role in making it one of the richest countries in the region during the 1970s.<sup>1</sup> However, the evidence also suggests that oil played a role in the collapse of the Venezuelan economy, because oil fiscal revenue started to fall at around the same time that the GDP per capita fell.

There have been extensive debates about the role that natural resources should play in a country’s economic development, with different views supporting different

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<sup>1</sup> See Rodriguez and Sachs (1999) for a formal modeling of this relationship.

recommendations for the formulation and implementation of policy. One approach proposes that oil-rich countries should focus on a diverse range of economic activities different and not related to oil production. There are a number of arguments for this diversification strategy. One is that the oil sector, along with sectors pertaining to other natural resources, has decreasing returns to scale, few links to the rest of the economy, and “stagnant” markets.<sup>2</sup> In addition, it has been shown in theoretical studies that resource booms have a negative effect on the industrial development of resource-rich countries.<sup>3</sup> These arguments led to the concept of the “resource curse”, according to which resource-rich countries will have poor economic performance.<sup>4</sup>

A different approach holds that an oil-rich country has a comparative advantage in the oil sector and would benefit from its development. Recent research has shown that poor growth appears to result from a concentration on exports, rather than from an abundance of resources.<sup>5</sup> Moreover, this line of research has found that resource-rich countries that have experienced strong economic growth have benefited from their comparative advantage, by developing the sector and using the resultant benefits to develop other sectors.<sup>6</sup> Doubts about the “stagnant markets” argument have also been raised in the literature on the price and the market of primary products.<sup>7</sup> In addition, it has been argued in the literature that resource products are linked to technology and innovation, and are therefore a source of growth in productivity.<sup>8</sup>

It is not the objective of this chapter to test these two views to determine which one is closer to the truth. Rather, the performance of the Venezuelan oil sector will be compared with that of the oil sectors of similar oil-producing countries. There will be a certain amount of discussion of how the sector’s performance affects growth. However, the focus

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<sup>2</sup> The word “stagnant” is used to argue that the share of primary products in world markets is decreasing and that their relative prices are also decreasing. Prebisch (1964) is the most oft-quoted proponent of this idea.

<sup>3</sup> This is what is referred to as the “Dutch disease”. See Salter (1959), Krugman (1987).

<sup>4</sup> The empirical study that demonstrated this relationship was Sachs and Warner (1995).

<sup>5</sup> Lederman and Maloney (2003). Moreover, Manzano and Rigobon (2001), and Hausmann and Rigobon (2003) show possible channels that can explain this low growth.

<sup>6</sup> Blomstrom and Kokko (2003), and Maloney (2002).

<sup>7</sup> Cuddington et al.(2002) found that relative prices seem not to be declining. Chami (2004) raised some doubts that all commodities are losing market share in the US market in comparison with industrial goods.

<sup>8</sup> Wright and Czelusta (2002).

will be on the sector’s performance *per se*, because the position taken will affect policy decisions regarding the oil sector.

The remainder of this chapter is organized as follows. Section 1 will analyze the changes in the oil fiscal revenue and provide an overview of oil policy. Sections 2 through 5 will each analyze a period in the history of oil exploitation in Venezuela. In each section, the reasons for viewing the period in question as an era distinct from the others will be explained. Section 6 concludes.

**1. The evolution of oil fiscal revenue**

The chapter by Hasumann and Rodriguez in this book describes the role that oil fiscal revenue plays in explaining the collapse of the Venezuelan economy. In order to deepen our understanding, it is important to understand what drives the collapse of those revenues. The following equation shows a very simplified way of thinking about fiscal revenue:

$$Fiscal\ Revenue = \tau_e \cdot (p - c) \cdot q$$

Fiscal revenue is derived by applying taxation (with an effective tax rate  $\tau_e$ ) to the flow of taxable income. In this case, taxable income is the result of the net income ( $p-c$ ) multiplied by the quantity of the good sold ( $q$ ). Evidently, this formulation does not take into account all the issues regarding taxation in general, and the taxation of oil in particular. These issues will be discussed below. Nevertheless, the formula offers a simple way of determining whether changes in fiscal revenue are driven by changes in tax pressure, or the net revenue, or the quantity.

In Table 1, I present the decomposition of oil fiscal revenue in changes in tax rates, net revenue, or quantity. Between 1960 and 2001, oil fiscal revenue per capita fell 7%. Nevertheless, we see that both the effective tax rate and the net income grew. The fall in fiscal revenue is due to the fact that production per capita fell by 67%. Following the peak of 1973, the revenue per capita from 1973 to 2001 fell by 47%; again, this is due mostly to the fall in oil production per capita.

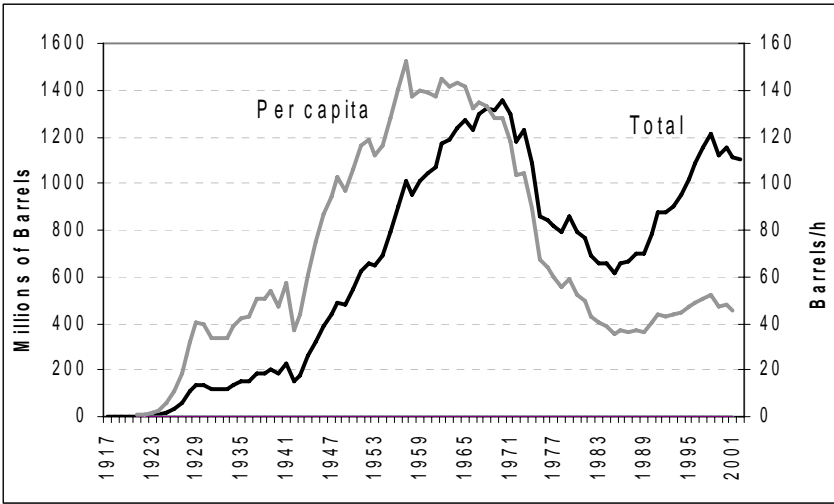
**Table 1: Decomposition of Growth in Oil Fiscal Revenue per Capita**

Period	Oil Fiscal Revenue	Total Change		
		$\tau_e$	p-c	q
1960-2001	-7%	38%	107%	-67%
1973-2001	-47%	4%	18%	-57%
1960-1973	75%	33%	75%	-25%
1973-1988	-34%	60%	16%	-64%
1988-2001	-20%	-35%	2%	21%

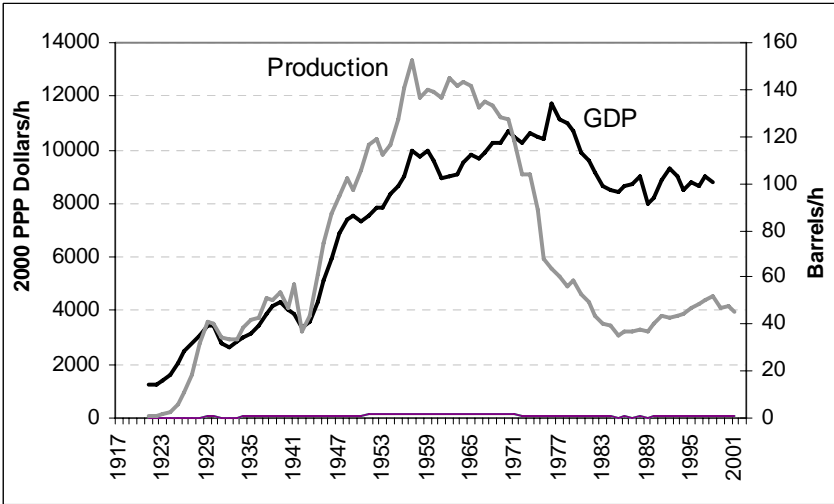
Source: Author’s calculations based on MEM (various years) and IMF(2004)

As seen in Figure 2, production increased up until 1973. Right after that, production almost collapsed and it was only after 1986 that it began to increase again. In 2002, oil production was around 3 million barrels a day, still below the level of 1973. Of course, this implies an important fall in oil production per capita, which is represented by the gray line in the graph. Oil production per capita declined from 1962 to 1985. Since then, production per capita has increased, but is still below the average of the period from 1921 to 2001. In 2002, oil production per capita was 31% lower than in 1976 (and 71% lower than the historical high in 1957). Moreover, the average oil production per capita in the 1990s was 67% lower than in the 1960s.

**Figure 2a. Oil Production**



**Figure 2b. Oil Production and GDP**



Source: MEM (various years). Hausmann and Rodriguez (2005).

In effect, as shown in Figure 2b, oil production per capita follows closely the changes in GDP per capita. It increased steadily until the 1970s, then declined. The particular period in which the two variables moved in opposite directions was between 1957 and 1976. However, during this period in which production was falling, fiscal income increased, due not only to prices, but also to the increased fiscal pressure. Therefore, in the long run, it seems that oil production can help to explain a lot of the movement of the GDP, or, in other words, that the Venezuelan expansion and later collapse cannot be dissociated from changes in oil production.

Consequently, to understand the fall in fiscal revenue per capita it is important to study what has driven oil production in Venezuela.<sup>9</sup> Consideration of the resources used in oil production makes it evident that the most important factor is capital (leaving aside oil reserves). As shown in Figure 3, increases in production are linked to important increases in investment in the oil sector in the immediately preceding years.

The only period in which there seems to have been an important increase in investment that was not accompanied by an expansion of production was the early 1980s. However, two factors must be taken into account when assessing this period. First, production was falling at the time and a considerable amount of investment was required merely to stabilize it.<sup>10</sup> In addition, OPEC imposed quotas on member countries, the result of which was that production could not increase. Hence, if we wish to consider the true effect of investment in this period, we should look at production capacity, rather than actual production. The dashed line in the graph shows that production capacity started to increase in 1980, in response to investment.<sup>11</sup>

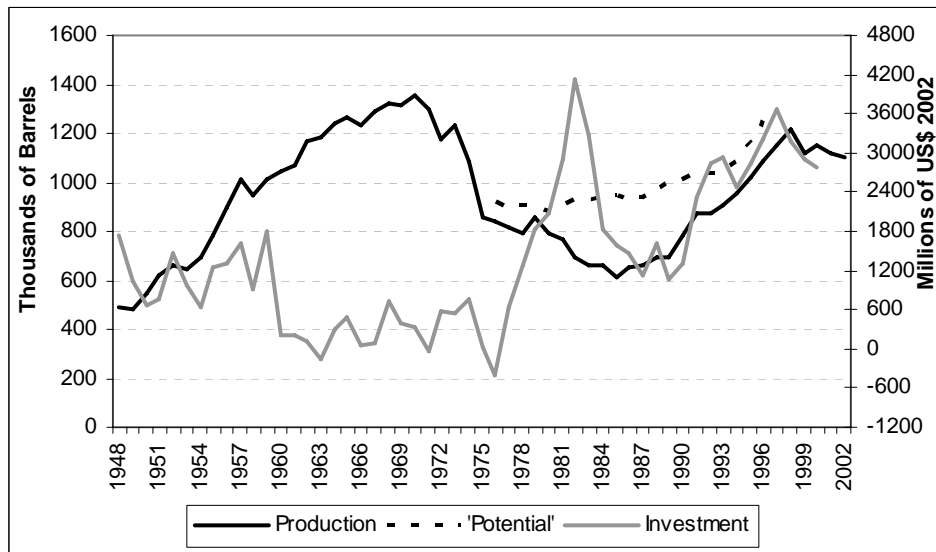
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<sup>9</sup> Thus far, we have avoided discussing the relationship between prices and quantities, which for some authors is relevant, particularly because Venezuela is an OPEC member. The issue will be discussed below.

<sup>10</sup> In 1975, oil production fell 23%, as will be documented in detail below.

<sup>11</sup> This figure is not available at MEM (various years). This information was available in an annual report produced at PDVSA, which is no longer produced. The author thanks former members of the Office of the Chief Economist of PDVSA for making the information available.

**Figure 3. Oil Production and Investment**



Source: MEM (various years)

Given that increases in production are linked to important increases in investment in the oil sector in the immediately preceding years, investment must be studied if the performance of oil production is to be explained. The oil sector has a number of characteristics that must be considered. As was mentioned above, it is extremely capital intensive. Moreover, most of the investment has to be made at the beginning of the project. It is also specific to particular uses and recovering it requires a relatively long time.<sup>12</sup> The fact that important amounts of capital must be committed ex ante to projects with long maturity periods implies that in addition to the usual determinants of investment (cost of capital, profitability, etc.), the sector is sensitive to the stability of institutional rules that surround it; in particular, institutions regarding property rights and taxation..

The latter is important, because the sector in countries like Venezuela is prone to the presence of economic rents and those rents are associated with the resource.<sup>13</sup> In Venezuela, the government is the owner of the resource. In this context, the fiscal system is used to

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<sup>12</sup> Investment specificity refers to possible alternative uses of investments made. An investment is highly specific when it can be used for only one purpose within the scope of the project in which it has been invested. For example in oil, all the exploration investment is specific to the oil fields discovered. In addition, most of the infrastructure that is set up to pump the oil out of the ground is also specific to each well.

<sup>13</sup> Oil fields in Venezuela are more productive than the average field in the rest of the World, though there are countries that are more productive than Venezuela. Therefore, oil production could be represented in a production function where capital, labor, and natural resources are the production factors and these economic rents are the remuneration of the natural resource.

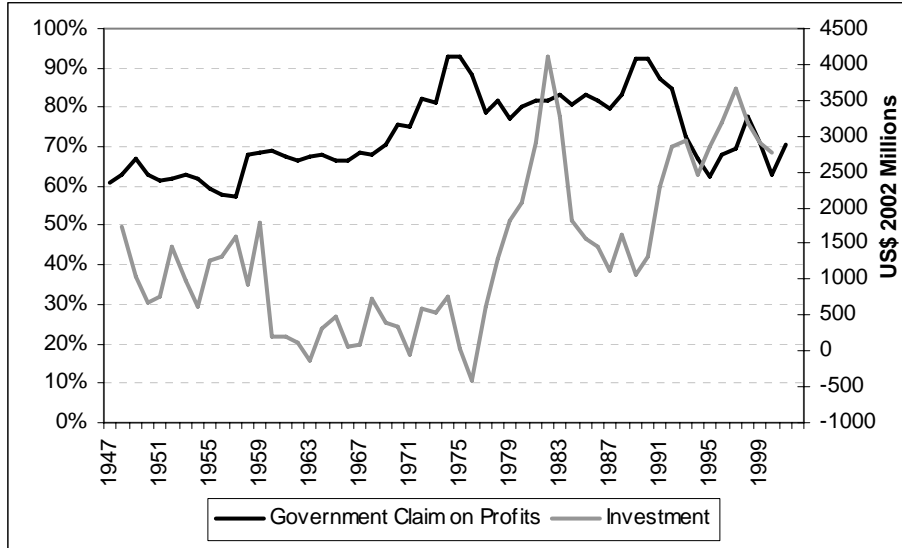
achieve two goals: the regular function of collecting fiscal revenues and the collection of the rents from the resource.<sup>14</sup>

As shown in Figure 4, this distribution of revenues between the government and the producers seems to have played an important role in shaping investment. The figure shows that investment spikes are associated with reductions in the government's claim on profits. As will be explained later, the conditions created by the laws passed in 1944 appeared to clear the way for a significant increase in investment in the sector. However, after a democratic government was established in 1958, the government began to increase its claim on profits until the industry was nationalized in 1975. The first, and striking, impression that one gets from the graph in Figure 4 is that the government's actions between 1958 and 1975 caused a collapse in investment. After nationalization, the government reduced the fiscal pressure on the sector, which allowed the new state enterprise (Petroleos de Venezuela, hereafter referred to as PDVSA) to invest. However, when prices collapsed in the 1980s, the government again started to increase its claim on profits and investment fell. Finally, the graph shows an increase in investment in the 1990s, when the government again reduced its claim on profits in the sector.

#### **Figure 4. Investment and Government Claim on Profits**

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<sup>14</sup> In the few places where the owner of the resource is a private agent, there is typically a contract between the landlord and the producing firm that stipulates a from the latter to the former. Separately, the producer will pay taxes.



Source: Author's calculations based on MEM (various years)

Table 1 and Figures 1 to 4 have shown a broad picture of the performance of the oil sector. Nevertheless, it is clear that, within this broad view, there are differences across different periods. For example, Table 1 shows that there are periods in which oil revenue per capita increased. Similarly, there are periods in which production per capita increased. The effective tax rate also differs across periods. Therefore, to better understand the relationship between the government and the oil producers, it is important to identify and analyse the main guidelines that underlay oil policy in Venezuela in the different periods.<sup>15</sup>

Table 2 provides a brief summary of the periods of oil production in Venezuela. Essentially, the categorization is based on two main characteristics: government administrations and developments in the international oil market. In the sections that follow, the taxonomy will be justified and each period will be analyzed carefully.

**Table 2: Eras of oil production in Venezuela**

<b>Period</b>	<b>Government Administrations</b>		<b>Oil Market</b>
Discovery and boom	Authoritarianism	J.V. Gomez (1908-1935)	Increasing participation of oil as an energy source.
		E. Lopez C. (1936-1941)	
		I. Medina A. (1941-1945)	

<sup>15</sup> A good review of the Venezuelan political system and its relationship with oil can be found in Urbaneja (1992).



		Democratic attempt “Junta Revolucionaria” (1946-1947) R. Gallegos (1948)	
		“Junta Militar” (1949- 1952)	
		M. Perez J. (1953-1958)	
The end of the comparative advantage	Democracy	R. Betancourt (1959-1963)	The Middle East established itself as the main supplier of oil (1960-1973)
		R. Leoni (1964-1968)	
		R. Caldera (1969-1973)	
The change in the international context		C. A. Perez (1974-1978)	Substitution of oil and “energy” as a production input (1974-1986)
		L. Herrera C. (1979-1983)	
		J. Lusinchi (1984-1988)	
Unchanged policy views in a changing international context?		C. A. Perez (1989-1993)	OPEC’s market share policy (1986-)
		R. Caldera (1994-1998)	
		H. Chavez (1998-)	

## 2. Discovery and boom (1914-1958)

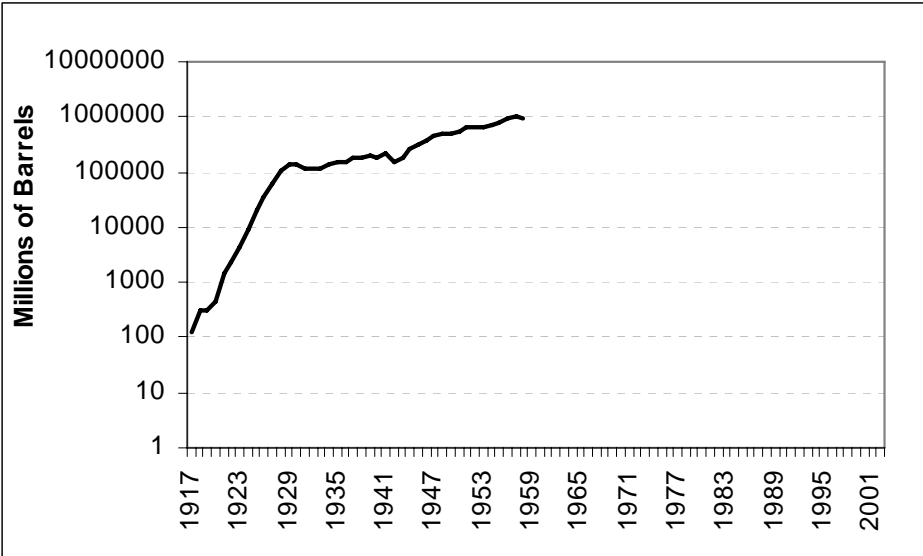
References to the presence of oil in Venezuela go back all the way to colonial times. In 1539, a barrel of oil was sent to Spain at the request of King Carlos V. This event is documented as the first shipping of oil for export.<sup>16</sup> However, it is in the late nineteenth and early twentieth centuries, when oil began to be used more widely as a source of energy, that commercial activity around the sector began to increase. The first “oil concession” was granted in 1865 and the first oil company, Petrolia del Tachira, was founded in 1878. Innumerable concessions and licenses were granted after that. However, it was not until 1914, with the discovery of Mene Grande oil field, the first giant field, that Venezuela clearly entered the commercial era of oil exploitation.

This period was characterized by the biggest expansion in oil production in Venezuela; see Figure 5, where the expansion is expressed in logarithms to highlight the proportional increases in oil production. The main reasons behind this expansion were, obviously, the presence of important resources and the closeness to the main market for oil, the United

<sup>16</sup> For a detailed description of all the events surrounding oil in Venezuela, see Martinez ()

States. However, it was also important that between 1908 and 1935 Venezuela was ruled by Juan Vicente Gomez. In the nineteenth century, Venezuela was characterized by a long civil war and a sequence of governments that were often unable to complete their terms of office because of rebellions and general political unrest. Gomez, though a fierce dictator, managed to pacify and stabilize the country. That offered foreign investors a relatively stable environment in which to invest.<sup>17</sup>

**Figure 5. Oil Production**



Source: MEM (various years)

Figure 5 shows that between 1929 and 1943, oil production seems to have stalled. This is due to two factors: the Great Depression and political uncertainty in Venezuela. The more important of the two was the Great Depression, which clearly affected the demand negatively. However, once the world started to recover, there was an increase in political uncertainty in Venezuela. After Gomez died, the movement for change to a democratic regime gained strength and this was accompanied by demands for a better deal for the country with respect to the exploitation of oil. Failure to have these demands met generated increasing unrest in the population, including a strike of the oil workers in 1936. Even though, in theory, there was hydrocarbon legislation prior to 1943, it was revised constantly and in practice, the fiscal rules for oil exploitation were set on a contract-by-contract basis. Therefore, there was a perception of an uncertain political landscape with no clear rules for the oil sector.

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<sup>17</sup> Moreover, Gomez quickly realized the importance of oil fiscal revenue and used it to consolidate power.

As argued above, this changed with the passing of the Hydrocarbons Law and the Income Tax Code in 1943. Both instruments removed the uncertainty about concessions periods and fiscal rules from oil companies. This helped to increase production further in this period, as shown in Figure 5. Nevertheless, it is important to note that in the figure, the slope for this second expansion is not as steep. This implies a slower growth rate than in the earlier period. It is important to bear this fact in mind for the next section.

Parallel to this expansion was the relationship between the oil sector and the rest of the economy. Since its appearance at the beginning of the twentieth century, oil has been seen as a “temporary” productive sector. Most Venezuelan intellectuals of the time warned about the problems that this temporary boom could cause for other productive sectors, saying that it would be impossible to restore these sectors to their former state once the supply of oil had been exhausted.<sup>18</sup> This perception that the productivity of the oil sector was only temporary led to one of the guiding principles of the Venezuelan oil policy: the “sowing of oil”. According to this principle, given that oil is an industry that can last only for a certain period, the income from it should be invested in other sectors of the economy in the service of diversification.<sup>19</sup>

This principle more or less guided the administrations in the period. As argued in Urbaneja (1992), for these non-democratic governments, the sowing of oil implied the development of infrastructure and urbanization. That this was so can be seen from Table 3. The low infant mortality in 1960 indicates that by then, basic services, such as water sanitation, were already being provided. The number of airport flights and amount of electricity consumed in 1970 shows that by then, Venezuela had a relatively well-developed infrastructure for transport and utilities.<sup>20</sup>

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<sup>18</sup> Basically, they used the argument of what is currently referred to in literature as the *Dutch disease*. Alberto Adriani (see for example, Adriani, 1931) was one of the authors that issued the most warnings about the end of the “agrarian era” for Venezuela, because of the presence of oil. However, other works (for example Mayobre, 1944, and Peltzer, 1944) discussed the problems of an appreciated exchange rate on the industrialization of Venezuela.

<sup>19</sup> The name of the principle came from an editorial published in 1936 by Arturo Uslar Pietri, an influential writer and intellectual.

<sup>20</sup> Even though 1970 is 12 years after the period studied, the reader should realize that acquiring information on these variables for an international comparison is difficult. However, the statistics for the variables presented here do not change dramatically over short periods and so can be taken as representative of the period studied.

**Table 3: The results of “oil sowing”**

	International flights departure per 1000 hab.	KWH per capita	Infant mortality per 1000 births
	1970	1970	1960
Algeria	1.08	115	164
Argentina	2.99	813	60
Chile	2.62	732	118
Iran	0.60	243	164
Iraq	0.57	275	117
Libya	3.12	164	159
Mexico	1.12	496	94
Saudi Arabia	4.39	321	170
OECD	10.73	4198	31
Venezuela	6.54	881	56

Source: World Bank (2005)

Although some industrial policies were implemented during this period, this does not necessarily reflect a particular orientation towards one sector. Moreover, there was no perception that oil could be a productive sector that could be integrated with the other sectors of the economy; therefore, there was no policy towards such integration. Nevertheless, it is important to note that there was a perception that Venezuela should capture a greater share of the oil market. To this end, steps were taken to increase oil production. The Hydrocarbons Law of 1943 encouraged the domestic refining of oil and was central to the development of the current refining network in Venezuela. In 1958, the installed refining capacity was 883,000 barrels a day and the total of crude oil refined in that year was 10 times higher than in 1943. In addition, in 1956, the government established the Venezuelan Institute of Petrochemicals, with the idea of fostering the development of a petrochemical sector. However, although the construction of a petrochemical complex started, in 1958, Marcos Perez Jimenez, the dictator of that, time was ousted and the democratic era began.<sup>21</sup> Though the complex was finalized by the democratic governments, as it will be pointed out later, priorities will change.

In summary, this first period is characterized by the development of the oil sector in Venezuela, which had important resources and was geographically proximate to the main

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<sup>21</sup> Further evidence of the relative lack of a comprehensive policy towards the integration of the oil sector in the Venezuelan economy is provided by the state of technical education related to oil. Most of the technical expertise in the sector had to be provided by foreigners. Geology as a career was not introduced until 1937 and Petroleum Engineering until 1952. It is important to notice that, by that time, most of the universities in the country were run by the government.

market. These conditions, along with a relatively stable framework for oil companies, made Venezuela the third largest producer (behind the United States and the Soviet Union) and the largest exporter of oil in the world.

### 3. The end of the comparative advantage (1958-1973)

Simultaneously with the beginning of the democratic era, important changes were occurring in the oil markets. As shown in Table 4, other future producers of what would become the Organization of Petroleum Exporter Countries (OPEC) were asserting themselves in the market.<sup>22</sup> Moreover, as seen from the table, Venezuela was at a disadvantage relative to those countries. Venezuelan costs were higher<sup>23</sup> and reserves were lower (given the high rate of extraction relative to the reserve stock). In this context, the new democratic regime pushed for a second and important principle that guided oil policy: “preservation”.

**Table 4: State of the oil market in 1961**

	Market Share	1961 Extraction Rate	Development +Extraction Costs
Algeria	1.6%	2.6%	0.695
Indonesia	2.1%	1.9%	1.002
Iran	5.9%	1.7%	0.279
Iraq	5.0%	1.5%	0.194
Kuwait	8.9%	1.0%	0.201
Libya	0.1%	0.2%	1.339
Nigeria	0.2%	3.0%	2.685
Qatar	2.6%	2.8%	0.195
Saudi Arabia	2.1%	1.0%	0.191
United Arab Emirates	0.0%	0.0%	0.561
<b>Venezuela</b>	<b>14.5%</b>	<b>6.3%</b>	<b>2.272</b>
Total OPEC	43.1%	1.7%	
Non OPEC	56.9%	5.6%	
Mexico	1.4%	4.3%	6.984
US	35.6%	8.3%	2.163

Source: Author’s calculations based on EIA (2004) and Adelman (1993)

<sup>22</sup> In this paper, we define as OPEC producers those countries that are now members of OPEC. Ecuador and Gabon, which joined the organization for a period and then left, are not considered to be members of OPEC.

<sup>23</sup> Costs in Nigeria seem larger than in Venezuela. For the period, they more or less were around the same value as the Venezuelan costs. Nevertheless, the Nigerian Ebony Light reference crude oil was of higher quality than the Venezuelan Tia Juana Light reference. Therefore, its price was around 50 cents higher.

The preservation principle was based on the notion that oil is a scarce resource of great value and therefore Venezuela must minimize its extraction in order to save it for the future.<sup>24</sup> Even before they assumed government, pro-democratic forces accused the authoritarian governments of the first half of the twentieth century of “giving away” Venezuelan oil. This became a relatively successful political platform. Once democracy was instituted, the preservation principle became a main guideline for the different administrations.

The preservation principle motivated two types of policy. First, the government increased substantially its claim on profits from the sector, as seen in Figure 4. The argument was that since oil is such a valuable commodity of limited availability, the government, as the owner of the resource, should maximize its share of the rents generated from it. This goal was achieved through royalties and the levying of income tax.

The second policy was the “no more concessions” policy. The concessions given after the law of 1944 were set to expire in 1983. The government announced that there would be no more concessions and that those set to expire in 1983 would not be renewed.

Traditionally, the literature credits these policies (higher taxes and the “no more concessions” policy”) for a contraction of investment and blames them for the collapse in production after 1970.<sup>25</sup> However, there are two important points to be made that could weaken this hypothesis. First, investment was taking place between 1958 and 1970. As argued in the appendix, there were positive investment outlays. Moreover, the actual physical measure of the main production asset (the number of active oil wells) increased over time; and as shown in Figure 6, production continued to increase.

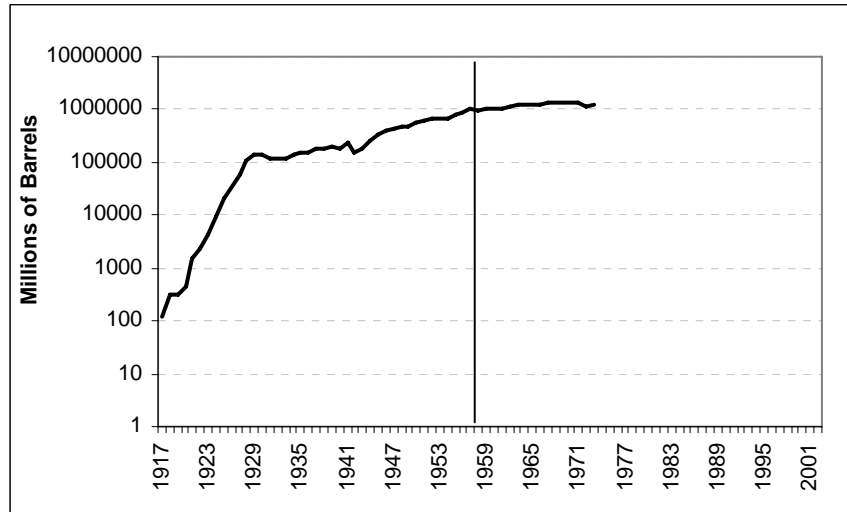
### **Figure 6**

#### **Oil Production**

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<sup>24</sup> Juan Pablo Perez Alfonzo is recognized as the main ideologist behind the preservation principle. See, for example, Perez Alfonzo (1962). Perez Alfonzo was one of the founders of OPEC and energy minister of the first administration of the democratic era.

<sup>25</sup> See for example Tugwell (1975), Espinasa, (1995), and Monaldi (2002) and (2006)



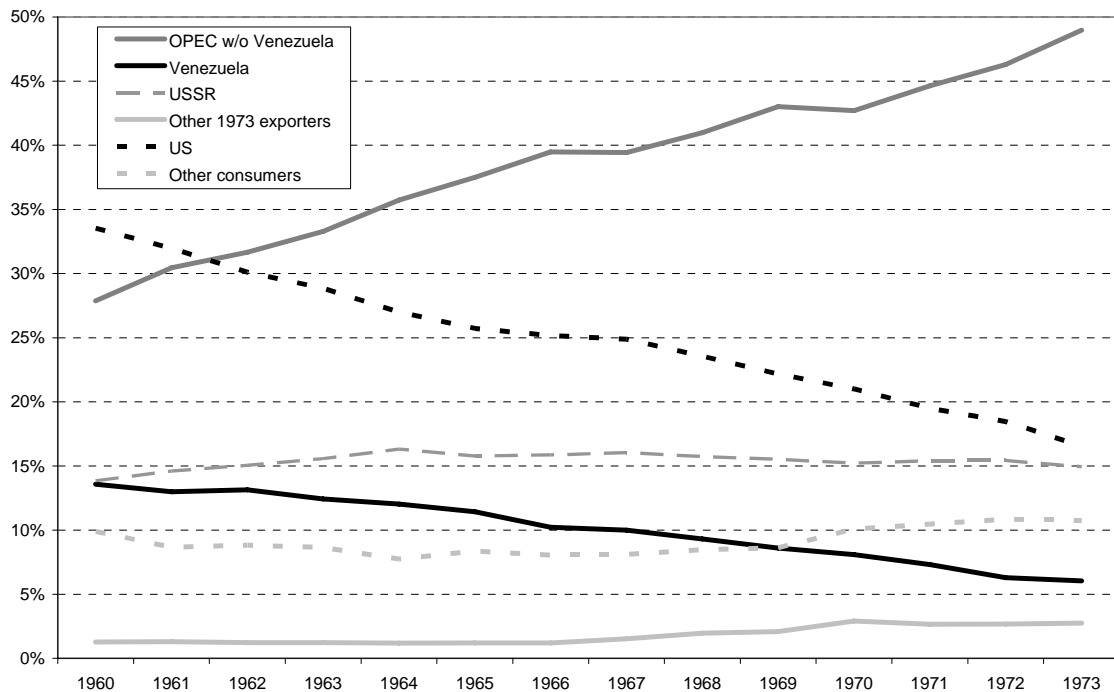
Source: MEM (various years)

Secondly, it has been already mentioned that Venezuela had higher costs, which suggests that the Venezuelan oil sector lost its competitive edge in this period. Other measures (stated in the Appendix) also suggest this. Therefore, it should have been expected that oil companies would have shifted investment from Venezuela to other more productive oil countries. However, the traditional literature has given little or no attention to this aspect of the international oil market. Because of that the answer to the question of what would have happened if the fiscal pressure on the sector had been kept constant or increased moderately, has not necessarily been answered.

The fact that the change in the net assets of oil firms in Venezuela was negative might suggest that even though oil firms were investing in the country, they were also undergoing a process of assets relocation in their world portfolio. As shown in Figure 7, from the importers' point of view, the US was quickly losing market share. Other importers more or less kept their share. However, given the size of the US, this pattern implies that a great opportunity to supply importers was opening up in the market.

**Figure 7**

**Market Share**



Source: Author's calculations based on EIA (2004)

Nevertheless, the important factor was action taken by other exporters of oil. As can be seen from Figure 7, Venezuela was also losing market share rapidly. Most of the loss was due to an increase in the share of countries that would become OPEC members, which were more productive than Venezuela. The Soviet Union marginally increased its share, but it is easy to argue that these were oil areas outside the reach of oil firms. In addition, there were relatively minor gains in terms of the total market share of smaller exporters.<sup>26</sup> Nevertheless, it is important to note that according to Adelman (1993) most of these smaller exporters had lower costs than Venezuela. Consequently, Venezuela was losing market share to producers that had lower costs.

If to the previous elements we add the already mentioned fact that, even after the Hydrocarbons Law of 1943, the growth rate of the Venezuelan oil sector was slowing

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<sup>26</sup> This does not imply that the gains were not important gains in terms of the relative size of the production of these countries. This group includes Angola, Colombia, Ecuador, Egypt, Gabon, Malaysia, Oman, Tunisia, and Trinidad and Tobago.



down,<sup>27</sup> it is difficult to argue that Venezuela could have kept the market share it had in 1960. Therefore, some asset relocation should have been expected from the oil firms' point of view. Given this context, *ex post* it seems logical that a viable strategy would have been to reduce the fiscal pressure on oil firms, in order that they might compete with other OPEC countries, hence minimizing the fall in market share.

However, Venezuela followed a different strategy. It approached its main competitors and negotiated with them to form OPEC and to coordinate tax policy.<sup>28</sup> As seen in Table 5, all of the OPEC producers increased their fiscal participation as they became members and began gaining control of their oil sector. In addition, even though concessions were not going to be renewed, foreign oil firms were signing investment agreements in joint ventures with the state-owned oil company (CVP)<sup>29</sup> The facts described by Martinez (2005) suggest that, even though oil firms knew that concessions were not going to be renewed, they were negotiating the establishment of "service contracts" with the CVP. This was a course of action that had already been followed in other OPEC countries that had nationalized their industry.<sup>30</sup> These service contracts would have entailed that the oil firms would have stayed in Venezuela, producing for the CVP.

**Table 5: Effective tax rates for the oil sector on OPEC members**

	1960	1971	1972	1973	Notes
Algeria	30% (1969)	35%	47%	50%	Independence since 1969. Member since 1962. Fixed amount taxes. Share in 1977: 56%
Indonesia	n.a.	50%	40%	33%	
Iran	42%	52%	54%	63%	
Iraq	43%	63%	45%	77%	
Kuwait	44%	35%	39%	50%	
Libya	10% (1962)	19%	18%	16%	Member since 1962. Nationalization 1970. Share in 1975 64%
Nigeria	30% (1967)	54%	54%	60%	Member since 1971

<sup>27</sup> This seems to suggest that the oil sector was more or less reaching a peak in terms of potential growth.

<sup>28</sup> In 1959, in the first Arab Petroleum Congress, prior to the foundation of OPEC, oil producers (including Venezuela) reached an informal agreement that eventually led to the creation of OPEC. This was known as the Cairo Agreement. Among other things, the participating countries agreed that the share of revenue from the oil sector to the governments should increase to around 60% of the income.

<sup>29</sup> See Martinez (2005) for a detailed description of the events in each year.

<sup>30</sup> For example, in Libya, which nationalized its industry in 1970, and Algeria, which did so in 1971. In addition, in Saudi Arabia, Iran, and Iraq, the National and Independent Oil Companies started joint ventures of some form.

Qatar	43% (1961)	58%	60%	64%	
Saudi Arabia	38%	50%	51%	48%	
UAE	10% (1964)	51%	52%	50%	Member since 1967
Venezuela	45%	62%	66%	73%	

Source: Author's calculations based in Adelman (1993) and OPEC (various years)

It is difficult to appraise the complete oil policy framework (non-renewal of concessions and increased fiscal pressure), even taking into account the information available to the policy makers at the time as an element for the analysis. On the one hand, it seems that the increase in the government take by itself, and even perhaps the policy of “no more concessions”, did not necessarily deter investment. On the other hand, judging by the intended result of the move to form OPEC, it was successful. As shown in Figure 5, even though oil exports per capita were falling, oil fiscal revenue per capita remained constant.

The key assumption behind this policy framework was the assumption of a finite amount of reserves. As will be shown below, the extraction rate of oil worldwide was increasing (which implies that reserves were diminishing) and the energy intensity of the world (the amount of energy required to generate a dollar of economic activity) was also increasing. Therefore, it seemed at the time that oil might, indeed, become a scarce commodity. Moreover, as presented in Cuddington and Moss (2001), although there was, in the late 1950s, an increase in the diffusion of technology in the oil sector, most of the new technology was derived from advances in geochemistry, stratigraphy, and fluid system sciences. These advances were useful for the logging and testing of wells and were important for reducing exploration costs. They did not facilitate the development of new sources of oil reserves. Nevertheless, as will be argued below, the key technological advances that helped to change the perception of oil reserves came in the late 1960s and early 1970s.

Furthermore, even if knowledge was available in the late 1950s about the possibility of new reserves around the world, in particular outside OPEC, it seemed that the price in 1960 was relatively low. As shown in the Appendix, if we compare the return of leaving an oil barrel in the ground and extracting it later (10, 20 or 30 years later) with the strategy of extracting it, selling it, and investing the proceeds of the sale in a US treasury bond, clearly the better strategy would have been to leave it in the ground. This is true for each of the three maturity periods of 10, 20, and 30 years and for the period between 1962 (the first year for which information is available for all the returns) and 1973. Therefore, it was optimal to reduce the extraction of oil.

The foregoing discussion is not intended to deny the role played by the progressive squeeze of profits from the oil firms in the collapse in oil production that later took place.

Rather, its aim is to put that factor in context. Most probably, Venezuela would have lost market share anyway and the information available to policy makers at the time was not the same as today. Nevertheless, it is clear that the policy that was followed (that of increasing taxes and promoting preservation of the resource) did not help to place the country in a position to take advantage of a possible period of higher prices. Nevertheless, as shown by the figures presented in the Appendix, the negative consequences of the policy of higher taxes and “no more concessions” were beginning to show in the late part of the period. In particular, 1971 is central to the understanding of the period. That year, the number of active wells decreased by 10% and the productivity per well also decreased substantially<sup>31</sup>. This suggests that oil firms stopped investing even in keeping production flowing. After 1970, the relationship between oil companies and the government began to deteriorate, because the government alleged that oil companies were not charging prices that were effective for tax purposes, with the companies arguing that they were.<sup>32</sup>

On January 1<sup>st</sup> 1971, President Rafael Caldera announced that the government would nationalize the natural gas business. Six days later, a decree was issued that regulated the price that oil firms should use for tax purposes<sup>33</sup>. Finally, in July a law was passed that forbade oil firms from taking their assets out of Venezuela in order to ensure the stability of oil production after 1983, when the concessions were set to expire. Clearly, while accepting that these events were part of a wider conflict between oil companies and oil-producing countries, we can see that they also gave a signal that induced oil firms to basically halt investment.<sup>34</sup> However, the facts described in the next section allowed policy makers to ignore these consequences.

In addition to following this principle of “conservation”, the democratic era continued with the idea of “sowing oil”. Nevertheless, there was an important ideological change. The priority for government expenditure would focus on social areas: health, education, and housing. According to official figures<sup>35</sup>, social expenditure rose from 17% of the budget in 1962 to 33% in 1973, in the context of a growing budget. This policy of investing in people

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<sup>31</sup> In fact, as is shown in the appendix, this was the beginning of a period that saw productivity per well fall all the way up to 1984, well past nationalization.

<sup>32</sup> Evidently, this is also part of the distributive conflict between the government and oil firms.

<sup>33</sup> This instrument, called “export value for fiscal reference” lasted until well after nationalization.

<sup>34</sup> It is important to mention that private oil companies were signing service contracts with the government even after 1971.

<sup>35</sup> OCEPRE()

had important effects on educational coverage, improved health conditions, and better housing conditions, among other improved social indicators.

What did not change, though, was the lack of a policy for integrating the oil sector with the rest of the economy. Even though the refining capacity continued to grow until 1965, the growth was due mostly to the completion of the refineries whose construction started after the Hydrocarbons Law of 1943. A second petrochemical complex was started, but was based mostly on state-owned firms or joint ventures in which the state had the majority of the capital. During this time, import substitution policies were in full swing in Latin America.<sup>36</sup> Therefore, these attempts at industrialization around oil, rather than reflecting a “cluster vision” of the sector, were just part of a wider set of policies that had the goal of producing most of the goods imported by the country.<sup>37</sup>

In summary, Venezuelan oil policy in this period was guided by the perception that producing oil was a temporary activity. This perception justified a strategy that tried to derive the maximum fiscal revenue from the sector and use that revenue in other sectors, particularly the social sector. Given that production reached its peak during this period and started to decline, in general this increased fiscal pressure is associated with the collapse of the sector. Nevertheless, as has been argued in this section, this claim must be taken in context: (1) it is difficult to prove wrong the government assumption that the amount of economically viable oil reserves was limited, given the information available at the time, and, moreover, it was optimal to keep oil in the ground; (2) Venezuela seemed to be bound to lose market share anyway; (3) in terms of the goal that it wanted to attain, the government stabilized a falling fiscal revenue; and (4) there were other developments in the relationship between the Venezuelan government and oil firms that were as important as the increase in the effective tax rate.

#### **4. The change in the international context (1973-1988)**

The previous section described the conflict between oil firms and oil-rich countries that took place in the 1960s. As stated above, the conflict led the major oil-producing countries from the developing countries to create OPEC, increase their claim in oil income, create

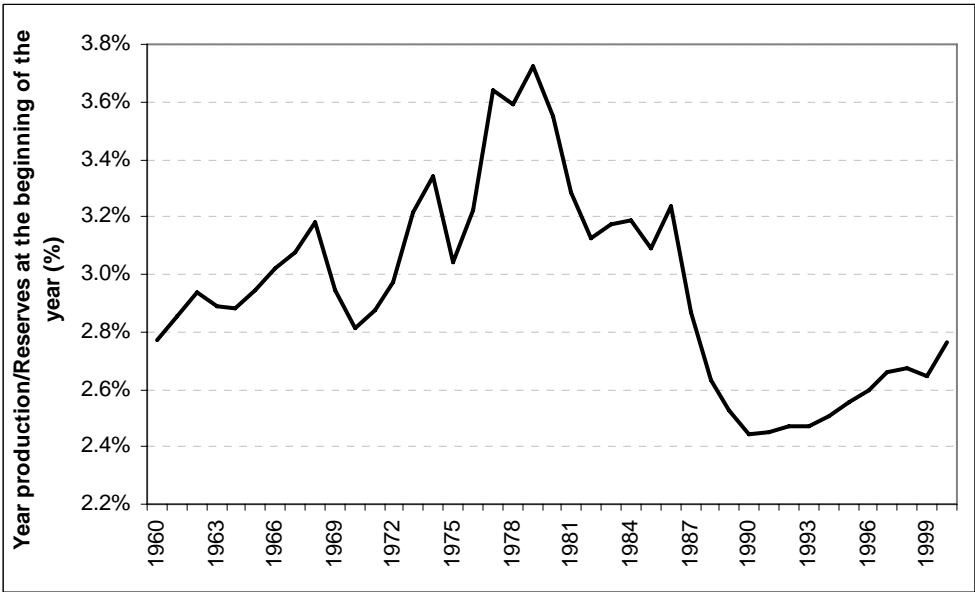
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<sup>36</sup> See Maloney (2002)

<sup>37</sup> According to OCEPRE () between 1964 and 1973, from 9 to 13% of the budget went on supporting productive sectors net of infrastructure spending, which indicates an active intervention of government in the economy. However, more than 60% went to agriculture, which indicates that government priorities were in other economic sectors.

their own national oil companies (NOC), and, in some cases, even nationalize the oil sector. In this situation, investment was driven away from the oil sector, and therefore little effort was made to explore additional oil reserves and the market tightened. As seen in Figure 8, oil extraction increased progressively from 1960 and peaked in the 1970s at around 4% of known reserves per year. It thus seemed as though oil reserves were only sufficient to sustain an additional 25 years of production.<sup>38</sup>

**Figure 8. Oil Extraction Rate**

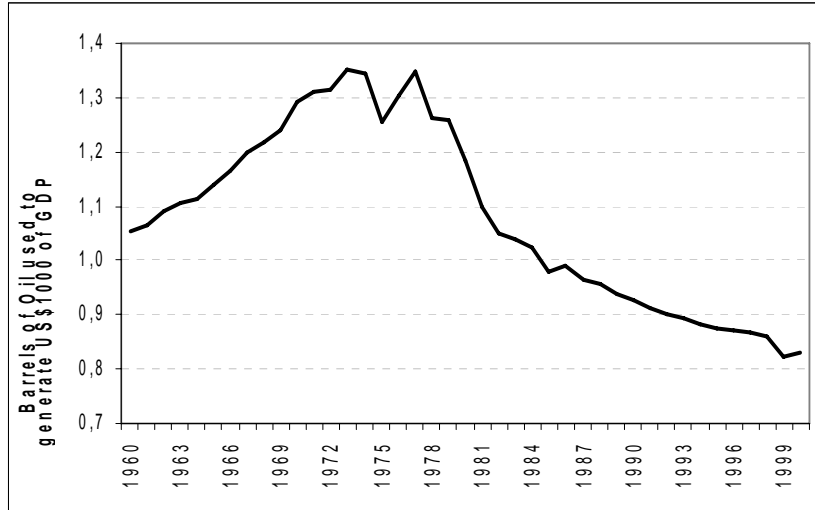


Source: Author’s calculations based on EIA (2004)

**Figure 9. Energy Use Worldwide**

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<sup>38</sup> It has already been stated that from the point of view of returns, less oil should have been extracted.



Source: Author's calculations based on EIA (2004) and World Bank (2004)

Moreover, in a context of relatively strong economic growth<sup>39</sup>, the demand for oil grew even faster. Figure 9 shows the number of barrels needed to generate a GDP of 1,000 US\$. As the figure shows, the world was using more and more oil for the production of goods and this trend increased all the way until 1974. Therefore, it was not only that oil seemed to become more scarce, but also that the world was relying on it increasingly.

In this context, two successive crisis in the Middle East (the Yom Kippur War and the Iran-Iraq War) created disruptions in oil supply and prices reached an historical high. Given these circumstances, oil-importing countries took important measures to increase energy efficiency in order to reduce their dependence on oil. Figure 14 shows how, due to the measures taken by consuming countries, the number of barrels needed to produce a GDP of 1000 US\$ has fallen 30% from that year to the present. Most remarkably, half of that decline occurred between 1980 and 1986.

In addition, oil companies started to increase their search for oil outside of OPEC. Figure 10 shows that after the first price increase in the seventies, drilling activity reached the highest levels of the last 30 years. The average for active rigs in the period from 1975 to 1985 was 102% higher than the rest of the period. As a result, by 1986, an additional 175 billion barrels were added to world oil reserves compared to 1980. This figure represents 27% of the reserves available in 1980.

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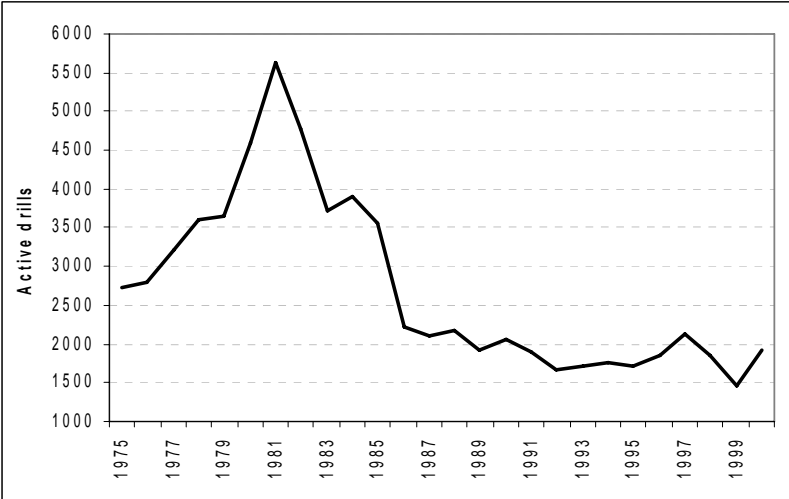
<sup>39</sup> According to World Bank (2004) figures, the world GDP grew at an average rate of 5.3% between 1960 and 1970.

Of those new additions, 55% were outside OPEC, mostly in the North Sea. As shown in Figure 13, the discovery of new oil reserves increased the theoretical duration of the reserves, assuming that the amount of oil extracted per year stayed the same.<sup>40</sup> This expansion of reserves was made possible by technological advances in the field of oil development.

According to Cuddington and Moss (2001), during the 1970s and 1980s, important technological advances were made in the area of off-shore exploration, drilling, and production. This made it possible to develop the North Sea. Therefore, this period showed that, provided that the expense is not too great, technology will make available reserves that were previously unreachable or not economically viable.

A similar case could be made for the demand. High prices would encourage the development of technologies that help to achieve a more efficient use of energy and motivate a search for alternatives to oil.<sup>41</sup> As shown in Figure 9, after 1976 the number of barrels needed to generate a GDP of 1,000 US\$ declined sharply. This is the result of two actions: an increase in energy efficiency and also a substitution of oil as an energy source by other alternatives, such as hydro-electrical and nuclear power.

**Figure 10. Drilling Activity.**



<sup>40</sup> Moreover, as shown in the Appendix, given the price of oil and the prevailing interest rate, this was a period in which the optimal strategy was to take oil out of the ground and invest the revenue that was derived, rather than leaving the oil in the ground. Therefore, the lower extraction rate really shows a picture different from the prevailing perception prior to 1974.

<sup>41</sup> A review of the way economic thought evolved during the second half of the twentieth century can be found in (Adelman, 1993).

Source: Baker Hughes (2004)

As a consequence of these technological changes, the increase in oil efficiency helped to curb the demand for oil, while the increased effort in exploration led to an increase in its supply. These two phenomena were the main factors that pushed prices down. By 1985, the price of oil was 20% lower than in 1981. In this context, what policy was followed?

It is in the period between 1971 and 1988 that production fell, for two reasons. First, as was explained above, the policy of the previous period, in particular the actions taken at the end of that period (nationalization of the gas industry and a law that prevented oil companies from taking their assets out of the country) clearly induced a collapse of investment. In 1975, these actions were carried further, up to the point of the full nationalization of the oil industry.

Although the fall in the number of active wells –used as a proxy for investment- in 1971 was reversed somewhat and by 1973 its number had reached 12655, after that brief recovery it continued falling to a level of 10202 in 1977, even below the number of active wells in 1962. Moreover, as argued above, the productivity of oil wells was declining and it continued to decline for a long time. Therefore, it is clear that the transition towards a NOC affected the productive capacity of the sector: there were fewer oil wells and those wells were producing less oil.

Nevertheless, at first, the results behind that the policy decision explained above seemed to support this perception. Oil fiscal revenue continued to increase until 1982. For Venezuela, this increase produced the result that even though oil production per capita was 62% lower in 1980 than in 1958, exports per capita were 109% higher and fiscal revenue 234% higher. Therefore, the impression was that the policy of increasing taxes was effective and so continued to be put into effect. Nevertheless, after 1981, it became evident that prices were falling. In 1982, oil fiscal revenue per capita fell by 25% due to a similar decline in prices.

In this context, production continued to decline all the way until 1985. However, as shown in Figure 8, it seems that production capacity fell up to 1980 and increased after that. Therefore, the effect on production of the policies followed in the previous period could only explain part of the contraction in production. The second factor explaining this contraction is the policy behind decisions taken at the OPEC level.

Behind the policy decisions to continue to increase taxes (on the part of the Venezuelan government) and to reduce production (on the part of OPEC) was the perception of what



was occurring in the oil market. This perception was the idea, already mentioned above, that oil was finite and that the world was highly dependent on oil. Consequently, the policy decision was to “preserve” oil. Nevertheless, these perceptions did not take into account the changes in the market described above. OPEC assumed that these circumstances were temporary and decided to establish quotas and reduce production in order to keep prices higher. As a consequence, from 1982 to 1986, oil fiscal revenue per capita continued to decline, due to the reduction in output and prices that more or less remained static.

Therefore, in this period, it seems from the data that policies (on the part of both the Venezuelan government and OPEC) were not necessarily in line with the events unfolding in the oil market. Even so, this misperception did not last long. In 1986, Saudi Arabia, the biggest producer in OPEC, decided to stop being the “swing” producer of the organization.<sup>42</sup> That year, the price of oil fell around 50% in nominal terms, and the Venezuelan basket barely averaged above US\$ 10.

Given this fall on exports and fiscal revenue, an important issue arises. Would have Venezuela been better off outside OPEC and not following the policies followed by the cartel? The answer to that question will depend on whether or not OPEC has market power. If OPEC does not have market power, we may conclude that Venezuela would have been better off remaining outside OPEC. However, although the issue is still being debated, recent evidence suggests that the answer to the question whether or not OPEC has market power might be “not always”.<sup>43</sup> If that is so, matters become complicated. If OPEC does have market power on occasions, the issue then becomes whether or not Venezuela’s membership was necessary for OPEC to possess and exercise that power on the occasions that it does possess it. The matter is complicated further by the issue of what the benefits would have been for Venezuela had she not been a member of OPEC. Remember from Section 3 that other smaller producers had lower costs. Consequently, outside of OPEC Venezuela was not the most productive oil country. Given the above, there would seem to

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<sup>42</sup> The agreement between OPEC members was that all members but Saudi Arabia would have a constant share of production and that Saudi Arabia would change its production in order to clear the market at a “fair” price. OPEC behavior has been widely studied. A review of this literature can be found in De Santis (2000).

<sup>43</sup> The Appendix contains data about OPEC behavior. However, for a more formal treatment, see Smith (2005) and Almoguera and Herrera (2005). Although at the two papers have different objectives, both more or less agree that there have been different periods in which OPEC was able to behave more closely as a cartel (Smith) and to have some impact on the market (Herrera and Almoguera).

be no definitive answer as to whether or not Venezuela was right to promote OPEC and remain a member.

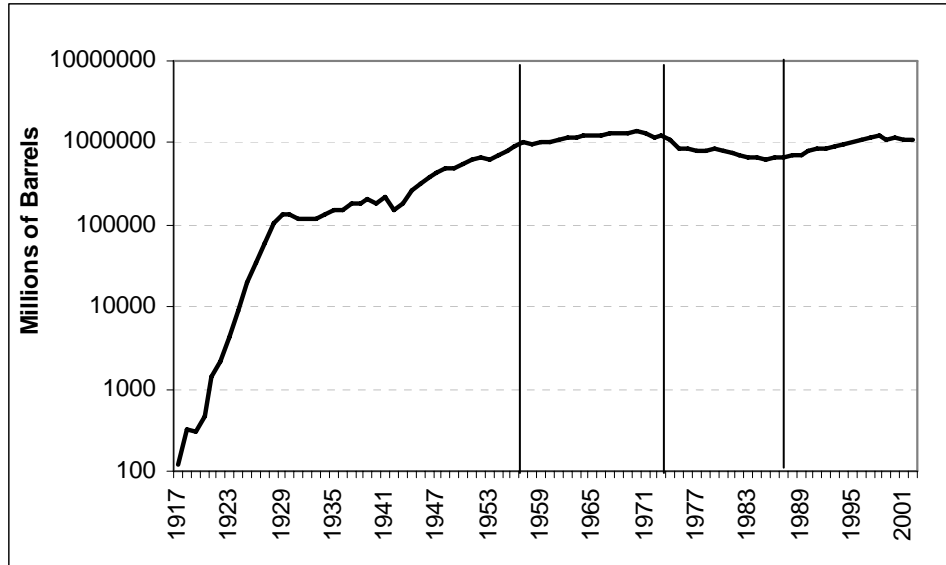
As in the other periods, we are not only interested in oil policy, but also in the diversification strategy that followed in the context of the oil policy. In this period, alongside the policy of trying to keep prices higher through OPEC actions, the policy of “sowing of oil” continued. Moreover, the windfall generated by the price shocks was spent in other sectors, with the intent of further diversifying the economy away from oil. Big state-owned companies were established in a variety of sectors, ranging from basic metals to tourism. Therefore, in this period, not only was the idea of diversifying the economy present, but also the idea that the state should carry out that task.

In summary, during this period, the oil policy that democratic governments followed showed signs of not being aligned with the developments in the oil market. As seen in Figure 2, oil fiscal revenue per capita peaked in 1974 and GDP per capita peaked two years later. The response to the fall in oil revenues was to cut production, in the hope that prices would increase. This did not happen and oil fiscal revenue continued to fall. Under these circumstances, different oil-producing countries took different approaches. The next section will analyze the Venezuelan performance after 1988.

## **5. Unchanged policy views in a changing international context? (1989-2003)**

In 1986, Venezuela was facing falling oil revenues and, as explained above, this was due to the fall in oil production. As seen in Figure 12, in 1986, production began to increase again and continued until 1998. Nevertheless, as seen in Figure 7, the first increase was partly thanks to the effort made earlier that halted the decline in production capacity in 1980. The administration that was in place from 1984 to 1988 took advantage of this increased capacity, but little investment was made. Most of the investment was made in the 1990s.

**Figure 12: Oil Production**



In this section, I will argue that the expansion in production was not necessarily greater than the expansion in other oil-producing countries and that this is due to the institutional setting. It is relatively evident that an increase in oil production would have increased oil fiscal revenue and Venezuela did increase production. Nevertheless, Venezuela, in a sample of 38 countries, ranks 20<sup>th</sup> in terms of growth in oil production in the period 1986 to 2001.<sup>44</sup>

In this regard, in previous sections it was assumed implicitly that a variety of factors can affect growth in oil production: field productivity, discovery risk, and well pressure, among different geological factors. If we look at the productivity of active oil wells,<sup>45</sup> Venezuela in the same sample ranks 24<sup>th</sup> and is 0.47 standard deviations below the mean. Therefore, for a country such as Venezuela, the crucial factor is the actual decision to increase production.

To capture that decision, an index is calculated for what would be called “effort”. The index is the combination of the two main activities that drive oil production: drilling and extraction.<sup>46</sup> If we compare Venezuela with the same sample in this index, Venezuela ranks 30<sup>th</sup> and is 1.02 deviations below the mean.

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<sup>44</sup> In Manzano (2007), there is a statistical analysis of the elements that will be discussed here. According to Energy Information Administration (2004), in 1986 there were oil reserves in 67 countries. Of those countries, 38 have a relatively complete set of statistics.

<sup>45</sup> Productivity is measured as oil production per active oil well.

<sup>46</sup> The index is constructed for the whole sample of oil-producing countries. Details of the index are presented in Manzano (2006).

To put these numbers in context, consider two examples. Firstly, Norway ranks 2<sup>nd</sup> in oil production growth. However, it ranks 25<sup>th</sup> in “effort”. The reason for the growth in Norwegian oil production is that it ranks 2<sup>nd</sup> in productivity. Given that its oil fields are extremely productive, it could increase production faster than most countries during that period without too much effort. For the second example, consider the case of Argentina. Argentina ranks 6<sup>th</sup> in oil production growth. This increase in oil production was achieved in spite of its ranking 31<sup>st</sup> in productivity. This growth is then explained by the fact that Argentina ranks 10<sup>th</sup> with respect to effort.

In this context, it seems that Venezuela did not manage to grow faster in term of oil production because its “effort” was not in line with productivity. In other words, countries either less productive or less abundant than Venezuela, but that had a higher “effort”, had superior increases in production. As mentioned above, oil is a capital-intensive sector, in which an important part of the investment is made up-front. It takes a long time before such investment is recovered. Therefore, the institutional setting of the host country and the fiscal rules for the sector become important factors for potential investors to consider.

In this regard, after 1986, an effort was made to increase oil production. However, fiscal income was declining and the oil industry was state-owned. This led to an on-going conflict between the goal of increased production and fiscal needs, because any attempt to increase production would, ultimately, have to be financed by the state. A first approach was to let the PDVSA issue debt to finance its production plans. However, this debt was considered public debt, which generated competition between the government and PDVSA in the financial markets. Moreover, interest payments and amortizations started reducing PDVSA funds available to the government and the tensions returned.<sup>47</sup> Therefore, there were limited debt issues made by the PDVSA.

A clear second option would have been to let private companies back into the country to develop the sector. Venezuela did that through a set of small reforms in the institutional setting. In 1991, Operating Agreements (“convenios operativos”) were introduced and marginal fields that, under normal circumstances, were not going to be exploited by the PDVSA were instead given to private companies; companies that would produce the oil for a certain fee per barrel. Next, in 1993, associations for the production of heavy and extra-heavy oil were introduced (“asociaciones estrategicas”). One could describe these crudes in

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<sup>47</sup> The government even had to eliminate the “fiscal value of exports”. As explained before, this was an instrument introduced in the 1960s, when the value of oil exports was increased by 20% for income tax purposes.

two ways: either as low-commercial-value crudes or as those requiring a special "pre-refining" that would make them suitable for any refinery and, consequently, characterize them as high-production-cost crudes. Finally, in 1996, new areas were given over to private investors for exploration and exploitation. This was termed the "opening-up" ("apertura"). Although these areas were supposed to contain light and medium crudes, little or no exploration was actually carried out.<sup>48</sup> All new contracts were given tax breaks to make them profitable for the private sector.

In summary, the state-owned oil firm was making a modest effort to increase production and, though the private sector was asked to invest in the country. Nevertheless, these fiscal agreements were not necessarily the most competitive. For the sample presented above, we constructed an index of fiscal regimes in the oil sector.<sup>49</sup> In this index, Venezuela ranks 32<sup>nd</sup> and is 1.08 standard deviations below the mean. For comparison, Argentina ranks 18<sup>th</sup>. Consequently, the conditions offered were not necessarily competitive, given the productivity of the oil sector.

Furthermore, as noted above, the areas given to the private sector were not the most productive ones (some were explicitly marginal; others had not been explored and were not explored). Manzano (2000) evaluated these reforms from the point of view of efficiency and concluded that although the reform resulted in greater efficiency, the fields selected for the reform were not the most negatively affected by the tax code. The areas in which the most gains could be made were those that remained under PDVSA control. Moreover, in these areas, a reduction in tax rates would have increased tax collection, which implies that they were overtaxed.

In summary, during this period oil production increased. Nevertheless, it seems that the increase was in comparison with increases in other oil-producing countries. As argued below, and in accordance with what was discussed above, Venezuela is less productive in the oil sector than other countries. Given this situation, a significant amount of investment is required to expand the sector. In this regard, the institutional setting, in particular the restrictions on the state-owned oil company and the lack of attractiveness of the tax regime for private investors, seems to have played a role.

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<sup>48</sup> Basically, these are the areas that should be "next in line", for exploratory purposes, after the areas that the PDVSA has been exploring.

<sup>49</sup> This index is based on Van Meurs (1997) and it reflects the attractiveness of fiscal institutions for investors in the oil sector. See the Appendix for details.

That being so, why has Venezuela not changed its institutional setting in order to make a greater effort in the oil sector? Using a framework of intergenerational accounting for fiscal burdens, Fernandez et al. (2005) found that future generations will be worse off, in the respect that their fiscal burden will be higher, with the current rate of extraction than with an optimal rate of extraction.<sup>50</sup> Consequently, it seems that the lower effort does not seem justified by intergenerational concerns.

Alternatively, it could be argued that Venezuela could not expand its production capacity due to her membership of OPEC. Nevertheless, as argued in the Appendix, it does not appear that OPEC countries were coordinated in this period.<sup>51</sup> Moreover, looking at the actual 11 members in 2001, only Iran, Kuwait, Libya, and Venezuela were producing less than in 1973. Therefore, most OPEC countries returned to the production levels prior even to the period when the conditions of the market changed, but Venezuela was not one of them.<sup>52</sup>

Following the argument of looking not only oil policy but also the diversification strategy, an additional course of action after the reality faced by oil-producing countries in 1986 would have been to add value to oil exports. This paper does not try to assess industrial policies. Rather, it focuses on industry that is related to the oil sector and the possibility of increasing exports value per capita by developing downstream by-products or upstream suppliers. The reason for exploring this possible strategy for increasing oil-related export is that, in most of the countries analyzed here, the oil sector is still dominated by a stated-owned oil company. Therefore, the possibility of developing connected sectors depends on oil policy.

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<sup>50</sup> The optimal rate is derived from an extraction model estimated with the Venezuelan parameters for the oil sector based on Deacon (1993) and Medina (1997).

<sup>51</sup> Again, the reader is referred to Smith (2005) and Almoguera and Herrera (2005), which formally test OPEC behavior.

<sup>52</sup> If Venezuelan oil production had been the same in 2001 as in 1973, assuming that else remained constant, oil fiscal revenue per capita would have been 4% higher than in 1960, instead of 7% lower as shown in Table 1.

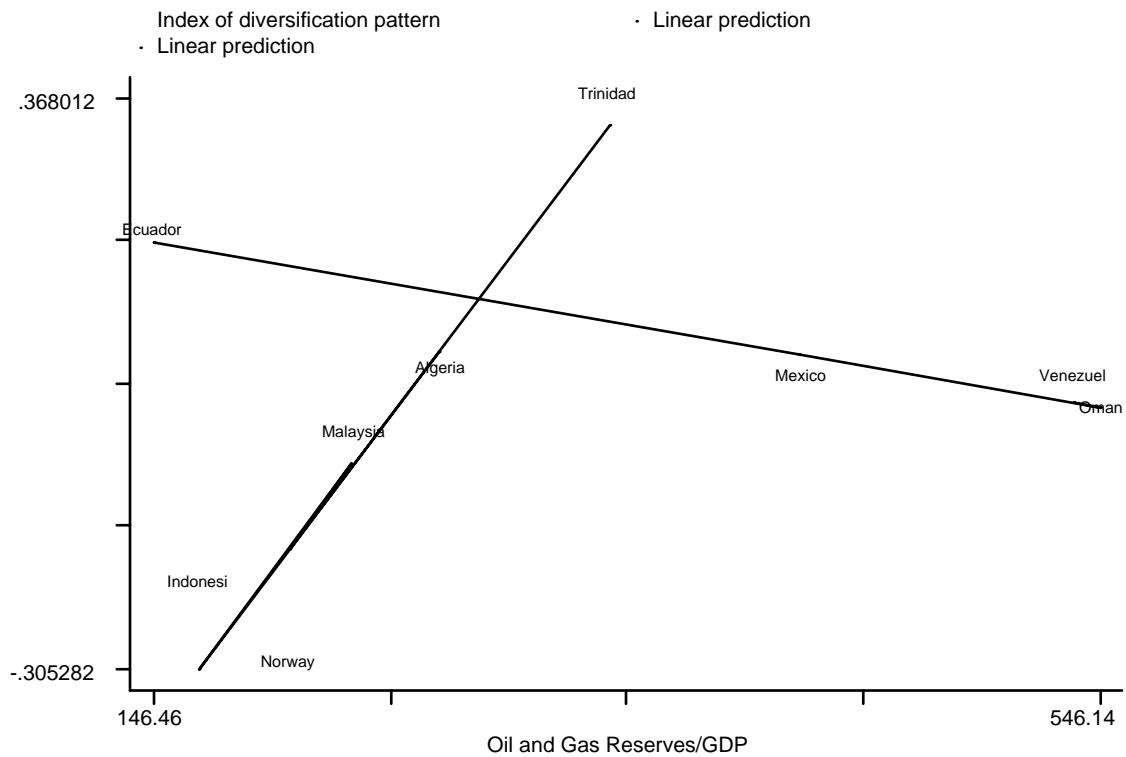
**Figure 13. Resource abundance and export concentration**



Source: Author’s calculations based on EIA (2004), World Bank (2003) and Lederman and Maloney (2004)

As argued by Lederman and Maloney (2003), a policy of diversification was important for countries whose exports are concentrated in only a few products. Their result supports the idea that concentrating on export reduces growth. However, this concentration is not related to oil richness. In Figure 13, an index of concentration is plotted against a measure for oil richness: reserves divided by GDP. The graph shows that there is no clear relationship between oil richness and concentration on export. Further, the diversification of exports does not imply diversification “away” from the sector. Therefore, policies might have varied according to the differing characteristics of each country.

**Figure 14: Specialization pattern**



Author's calculations based on UNSD (2004), World Bank (2003) and EIA (2004)

To see the different strategies followed by different countries, an index for the diversification pattern is constructed for the group of countries with the greatest abundance.<sup>53</sup> In it, the change in net exports per capita in 28 different categories of goods for each country is compared to the relationship of those sectors with the oil sector in the US. These relationships are based on the implied multipliers of the Input-Output matrix of the US.<sup>54</sup> Then a correlation was calculated between that multiplier and the change in net exports experienced by each country in those 28 sectors for the period studied. A positive diversification index implies that the pattern followed was around sectors related to the oil

<sup>53</sup> The criterion for abundance is based on the fact that the country is in the top 25<sup>th</sup> percentile in the ratios of reserves to GDP and reserves to population.

<sup>54</sup> The main reason for using the US matrix is that there are no matrices with a unified methodology (like those of GTAP) for these countries. The US is used instead because of its mature oil sector. Oil has been produced in the US for more than a century. It was the largest producer until 1973 and is still the 3<sup>rd</sup> largest oil producer in the world.

The relationship between non-oil sectors and the oil sectors is based on multipliers from an input-output matrix. See the Appendix for details.



industry. A negative index implies that the pattern followed was around sectors not related to that industry. In Figure 14, we plot that index against the relative oil richness.

At first sight, there is no clear relationship. However, the reader will note that two lines are drawn. All the countries in the upward sloping line increased their non-oil net exports per capita. All the countries in the downward sloping line decreased their non-oil net exports per capita. These relationships seem to indicate that, for the nine countries in this sample, which include Venezuela, the countries that increased their non-oil net exports followed a pattern suited to their endowments. Countries with less oil reserves followed a pattern of diversification away from oil, while countries with higher reserves followed a pattern around the oil sector. By contrast, countries that followed a pattern of diversification that was not in accordance with their endowments were not able to increase their non-oil exports per capita. Among those countries is Venezuela.

Of course, a further issue that should be considered is whether or not an increase in net exports is desirable, but a resolution of this issue lies beyond the scope of this chapter.<sup>55</sup> The relevant issue here is why Venezuela followed a pattern that is not connected with oil, in contrast to, for example, Trinidad and Tobago. In the 1990s, Venezuela embarked upon a program of structural reform, similar to those followed by other Latin American countries. These programs proposed the opening of the economy to the international markets, the removal of distortions, and the establishment of institutions needed to achieve macroeconomic stability (such as central bank independence), among other measures. However, in Venezuela, not all the reforms could be implemented.<sup>56</sup> Further, these programs lacked policies that nowadays are seen as necessary in the process of diversifying the economy.<sup>57</sup>

In a review of the effects of the oil sector on the Venezuelan economy, Clemente et al. (2005) estimated whether being linked to the oil sector has an effect on productivity. The authors found that companies that use oil and oil derivatives as an input in their production

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<sup>55</sup> For instance, all the countries but Algeria in the upward-sloped line have a positive GDP per capita growth, and the average growth was 2.10%. Of the countries in the negative-sloped line, two have positive rates (Mexico and Oman) and two have negative rates (Ecuador and Venezuela). Their average GDP per capita growth was 0.44%.

<sup>56</sup> For a complete description of reform programs in Venezuela and their successful or failed implementation, see Gonzalez et al. (2004a).

<sup>57</sup> Hausmann and Rodrick (2003). In Trinidad and Tobago, these policies were adopted in one form or another. For a review of the economic performance of Trinidad and Tobago, as well as the policy implemented; see Artana et al. (2004), Barclay (2003), and Berezin et al. (2002).

process have lower productivity. This is mostly due to policy decisions. Domestic prices of oil derivatives are subsidized in Venezuela, as a result of past policies, and this is an area in which policy updates have been inhibited. As a result, domestic prices are around 1/4 of international prices. This subsidy affects the productivity of consumers of oil derivatives negatively.

In addition, Clemente et al. explored the effect on productivity of being a supplier to the oil sector and found not only negative effects in productivity but also negative spillovers to other firms that use products made by firms that supply the oil sector. This is because the PDVSA's purchasing policies were not designed with a strategy of export diversification in mind. Usually, the products of local suppliers were more expensive and of lower quality, but government intervention forced the PDVSA to buy a certain amount of local products. Hence, there were no incentives for firms to become more productive or to sell to international markets.

Subsidizing the domestic prices of oil products and obliging the PDVSA to buy a certain amount of local products were policies that deviated from the original goal of the "sowing of oil" principle<sup>58</sup> However, the main point is that these instruments were not designed to increase the value of oil-related exports. Therefore, we may conclude that, in the case of Venezuela, there was no intention of pursuing that aim.

Summarizing the period, even though production grew in Venezuela, it seems that the expansion was modest and there was no attempt made to link the oil sector with the rest of the economy. The main reason behind these problems seems to be institutional. The issue thus arises as to why Venezuela did not change its institutional setting in order to take advantage of the oil sector. Changes were made, but these changes were modest. It seems that the reason for making only modest changes is that the whole system of institutions was still based on the policy orientation of "preservation". Because of the *Nationalization Law*, oil production, and even refining, was reserved for the state. For the private sector to participate, each contract had to be approved by Congress.

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<sup>58</sup> Both policies were used to distribute the rents generated by the oil sector. Of course, they were not necessarily ends sought by the original proponents of the principle. Urbaneja (1992) and Gonzalez et al. (2004b), among others, have claimed that since the 1970s, policy outcomes have deteriorated. Urbaneja (1992), in particular, has argued that it was due to the perception on the part of policy makers that massive rents were being generated by the oil sector in the 1970s. These rents generated the impression that cost-benefit analysis for policy making was less necessary.

An examination of why those policy guidelines were not changed lies beyond the scope of the present investigation and would better be conducted in the context of a debate on Venezuelan political economy.<sup>59</sup>

## **6. Concluding remarks**

Changes in the oil fiscal revenue per capita resembled those of the Venezuelan GDP per capita throughout the last century. After three decades of sustained growth, oil fiscal revenue collapsed in the 1980s and it has not recovered since.

We have argued that the collapse was due to the fall in oil exports per capita, which was driven mainly by the fall in oil production per capita. Although other factors might have played a role, such as oil prices, oil quality, and production costs, it is clear that changes in oil production per capita are correlated to those in oil exports. Therefore, to understand the reasons behind the collapse in oil fiscal revenue it is important to study the factors that drive oil production in Venezuela.

We have argued that, overall, looking back at oil policy, the policy followed between 1914 and 1958 seemed to be on the right track. However, it is difficult to argue against the policy implemented between 1958 and 1973. Probably, what seemed to be a reasonable assessment of the environment, given the information available, led to a short-run policy consistent with that assessment. However, it might have had long-term negative consequences.

Following those two periods, oil policy played a fundamental role in explaining the collapse of oil production. Oil policy was then driven by two principles: preservation and the sowing of oil. Taken together, the two principles implied (i) that oil extraction should be relatively low, in order to keep oil stored for the future; and (ii) that the rents generated by the oil sector should be invested in other sectors to diversify the economy away from oil.

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<sup>59</sup> One hypothesis is that for those changes to take place would require an important consensus in Congress, but that it was difficult to achieve such a consensus. Although it is not clear that a constitutional reform was needed in order to pursue a different oil policy, it is accepted that at least changes in “organic” laws were required. In order for them to be passed or changed, organic laws required the approval of two-thirds of the members of Congress.

Some authors have proposed that after 1989 is precisely the time when political fragmentation started in Venezuela and it became more difficult to generate consensus. See Gonzalez et al. (2004b) and the chapter in this book by Monaldi and Penfold

These principles, though apparently appropriate in the context that prevailed in the international oil markets up to 1980, became less so after changes in policies by net oil-importing countries and oil companies in response to the price crises of the seventies. After the crises, energy use became more efficient and oil was sought and found in non-traditional places. 1986 is considered to be the year in which this new reality became apparent, at the time when oil prices collapsed.

After 1986, different oil-producing countries took different routes. From a sample of oil-producing countries that was analyzed, it emerged that countries that decided to expand their oil sector as well as to increase their oil exports through a broader view of the sector (i.e. including suppliers and users and expanding those sectors) fared better. In this regard, Venezuela increased oil production in absolute terms, but relatively less than the leading countries. The evidence seems to indicate that given the nature of the oil sector in Venezuela and the institutional framework in place at the time, a better fiscal arrangement was needed in order to generate higher growth. The main reason for this is that the principles that were described above continued to guide oil policies, because most of the laws governing the sector had been written by that time. This does not entail that no attempts were made to pursue a different policy. We have described some efforts to do so. However, there was resistance and it was not possible to attain the consensus required to change the relevant laws.

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## **Appendix I: Oil related statistics 1960-1973**

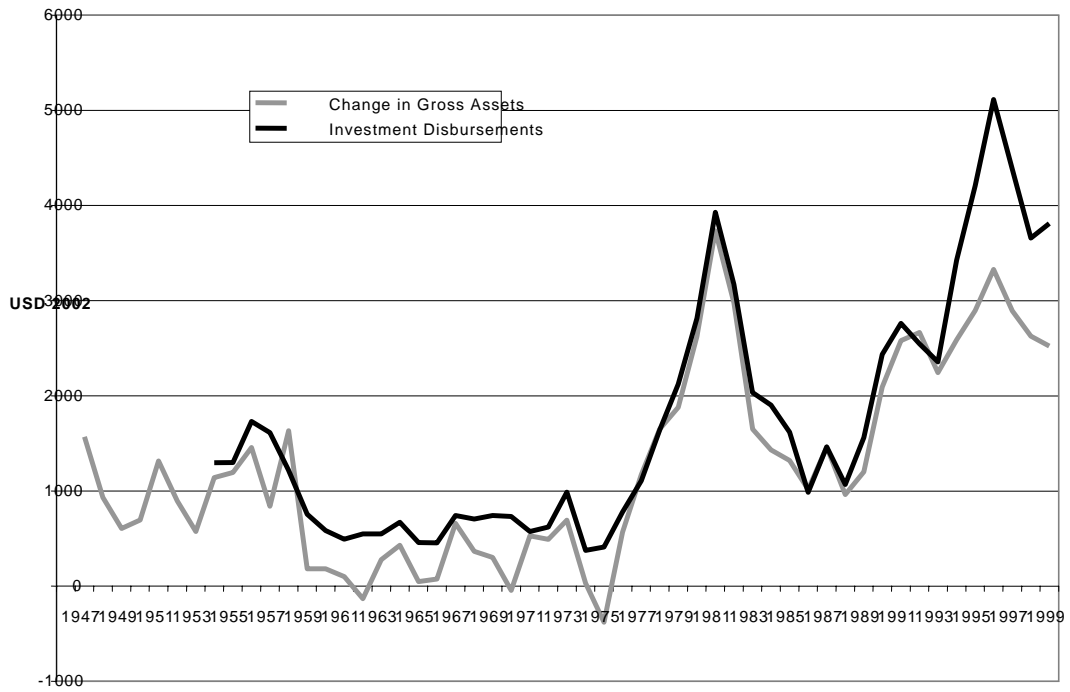
This appendix present a series of statistics related to the oil sector with the aim of supporting the arguments of Section 3.

### **Investment in the Venezuelan oil sector between 1960 and 1973**

Figures A-1 present different concepts of investment in monetary value. As seen from the figure, even though between 1960 and 1973 there are periods in which the change in net asset is negative, the disbursements are positive. Figure A-2 presents physical measures of investment and assets in production. As seen in the figure, in that period oil wells were completed and the number of producing wells increased.

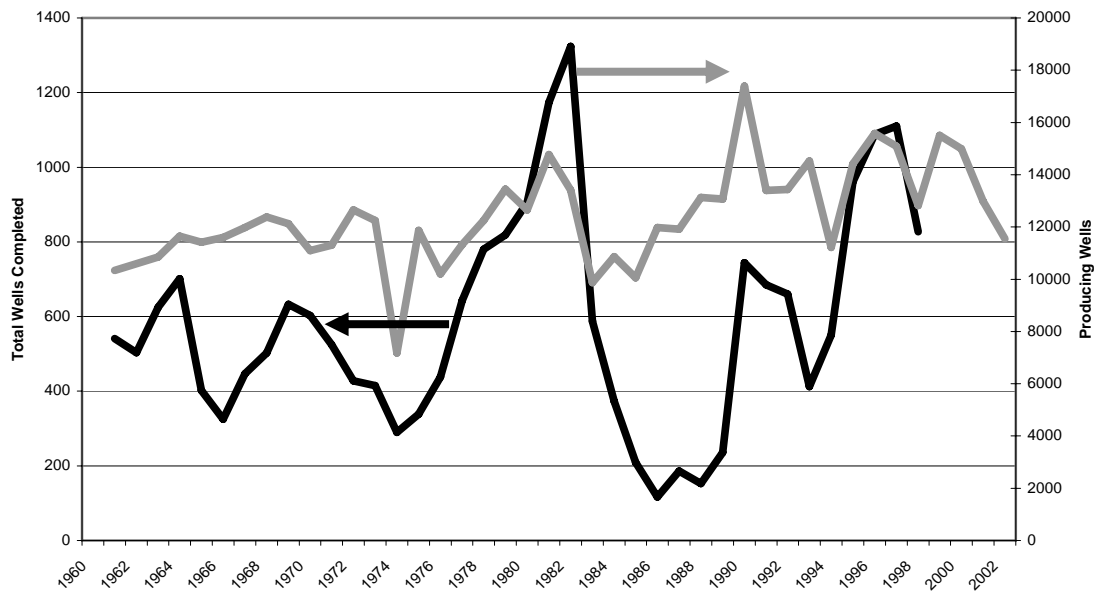
**Figure A -1**

**Difference in Investment Concepts**



**Figure A -2**

**Investment Concepts**





### Productivity of the oil sector in OPEC member countries (including price differentials)

We here present data on productivity in the oil sector. Figure A-3 presents the evolution of productivity by oil well in Venezuela. The graph shows the decline in productivity between 1960 and 1973, which shows that firms were investing even though wells were less productive.

Figure A -3



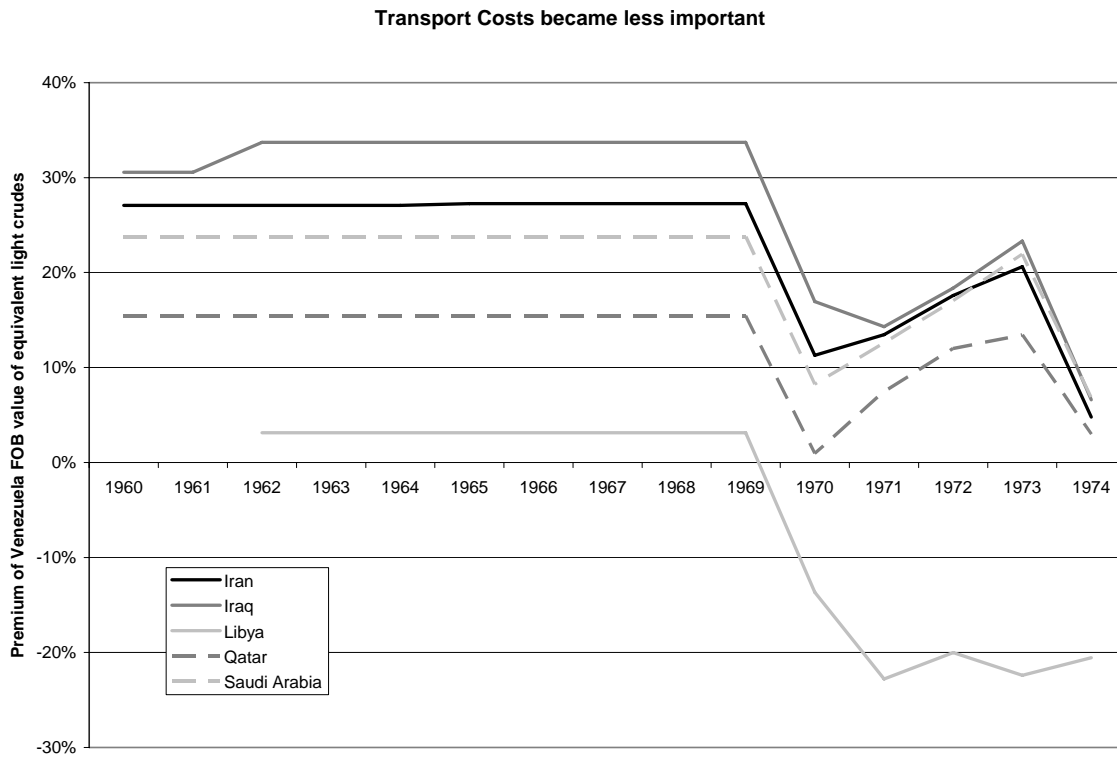
Table A-1 presents a comparison of productivity among OPEC producers. Clearly, the wells less productive in Venezuela than in other countries.

Table A-1: Productivity per oil well at OPEC

	Algeria	Indonesia	Iran	Iraq	Kuwait	Libya	Nigeria	Qatar	Saudi Arabia	United Arab Emirates	Venezuela
61-74	1017	344	12686	11381	4892	2688	1958	4363	8117	6019	299
75-88	1150	379	18164	11533	3269	1541	2737	3505	11580	4085	190
89-02											

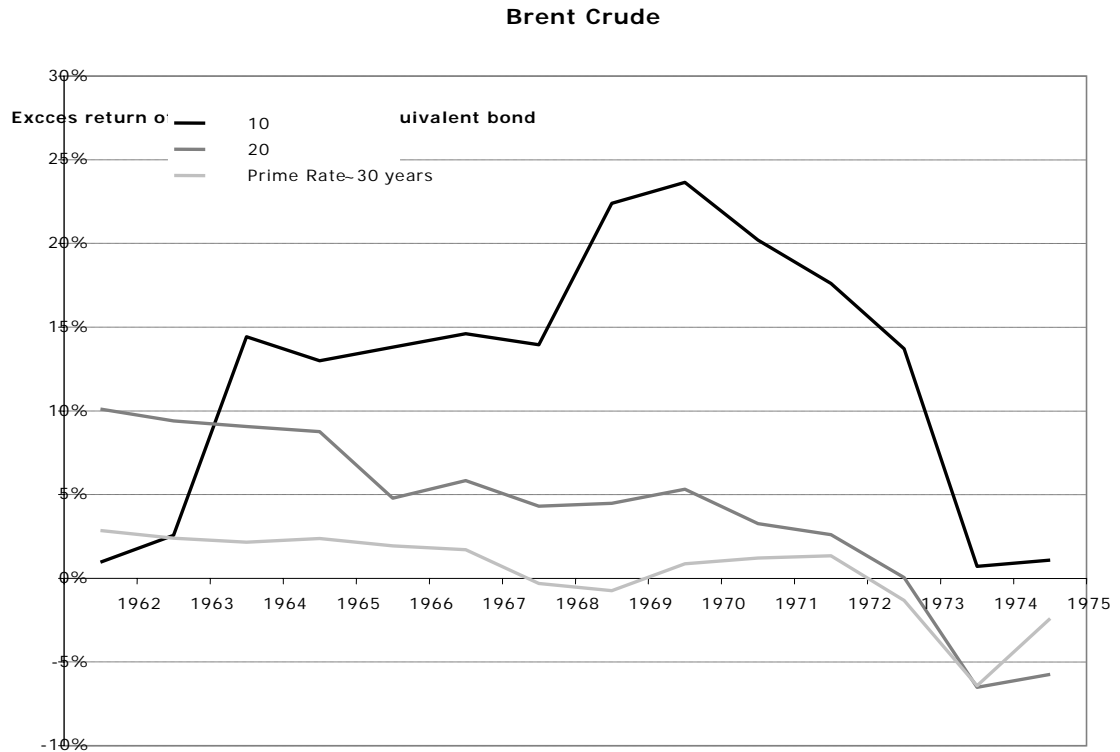
Figure A-1 presents the premium of the Venezuela FOB values of light crude compared to other OPEC countries. It could be argued that Venezuela has an advantage in location. However, the graph shows that transport cost became less important.

**Figure A -4**



**Returns on oil**

Figure A-5 present the excess return of an investment strategy on keeping a barrel of oil in the ground for 10, 20, and 30 years as opposed to extracting it, selling it, and the investing in a financial instrument. In this case, we use US Treasury bonds and the prime rate. As seen in the graph, between 1962 and 1972, the best strategy was to keep the oil in the ground.



## Appendix II: OPEC behavior

The next table presents the behavior of OPEC country members over time, specifically for the following periods: 1961-1973, 1974-1988 and 1989-2003. The correlations are made on the first difference of oil production. First differences are used because for all countries, the production figures are I(1). It can easily be seen that the highest correlation or joint movement corresponds to the production of the period (1974-1989), with 21 positive and significant coefficient correlations. Therefore, the establishment of quotas from OPEC could explain the contraction of Venezuelan oil production at that time.

In contrast, for the period (1990-2003), the number of positive and significant coefficient correlations falls to 16. In addition, seven coefficients are negative and significant, which were not present in the previous period. This shows that OPEC countries have less coordination than before and that the lost of market share of some countries members means an increase of market share for other OPEC countries. This situation is similar to the first period, when production quotas had yet to be established in OPEC.

**Table A-2: Correlation Matrix - OPEC Countries Production**

Período (1961-1973)											
	Algeria	Indonesia	Iran	Iraq	Kuwait	Libya	Nigeria	Qatar	Arabia Saudita	EAU	Vzla
Algeria	1										
Indonesia	0.237	1									
Iran	-0.3856	0.5404*	1								
Iraq	-0.421	0.2501	0.3051	1							
Kuwait	-0.1174	-0.6593*	-0.5042*	-0.5006*	1						
Libya	0.1373	-0.2932	-0.4880*	0.1816	0.0928	1					
Nigeria	-0.3073	0.2871	0.5899*	-0.03	0.0749	-0.4930*	1				
Qatar	0.0236	-0.0417	-0.1332	0.0716	-0.3019	-0.0599	-0.5287*	1			
Arabia Saudita	-0.0874	0.6211*	0.7883*	0.326	-0.5485*	-0.6950*	0.5010*	-0.0677	1		
EAU	-0.5082*	0.4275	0.8370*	0.5927*	-0.3828	-0.3861	0.5692*	-0.1403	0.8001*	1	
Venezuela	-0.074	-0.1459	-0.2703	0.29	-0.0849	0.5361*	-0.4044	-0.1638	-0.4397	-0.2845	1

\*10 % statistic significance

Período (1974-1988)											
	Algeria	Indonesia	Iran	Iraq	Kuwait	Libya	Nigeria	Qatar	Arabia Saudita	EAU	Vzla
Algeria	1										
Indonesia	0.1748	1									
Iran	0.3006	-0.0252	1								
Iraq	0.5194*	-0.1031	-0.0117	1							
Kuwait	0.5012*	0.1497	0.0678	0.6879*	1						
Libya	0.6598*	0.1722	0.1073	0.6569*	0.5526*	1					
Nigeria	0.3433	0.2764	-0.019	0.6610*	0.5167*	0.4898*	1				
Qatar	0.383	0.4067	-0.1087	0.3977	0.5472*	0.4586*	0.4864*	1			
Arabia Saudita	-0.112	0.7679*	-0.3666	0.0701	0.1738	0.0863	0.4384	0.4488*	1		
EAU	0.3712	0.5443*	0.1977	0.4792*	0.3503	0.3757	0.5776*	0.277	0.5766*	1	
Venezuela	0.2115	0.2442	-0.1472	0.2422	0.6349*	0.3781	0.4560*	0.5885*	0.4358	0.1141	1

\*10 % statistic significance

Período (1989-2001)											
	Algeria	Indonesia	Iran	Iraq	Kuwait	Libya	Nigeria	Qatar	Arabia Saudita	EAU	Vzla
Algeria	1										
Indonesia	-0.1409	1									
Iran	0.5109*	0.4195	1								
Iraq	-0.4659*	-0.3576	-0.3024	1							
Kuwait	-0.1258	-0.5159*	0.0548	0.5706*	1						
Libya	0.5903*	0.3445	0.4309	-0.6167*	-0.5461*	1					
Nigeria	0.4323	0.3002	0.8326*	-0.0614	0.0085	0.2978	1				
Qatar	0.2918	0.0063	0.2289	0.3714	0.1899	0.1864	0.2641	1			
Arabia Saudita	0.5958*	0.4125	0.5336*	-0.7383*	-0.4590*	0.8569*	0.357	0.2401	1		
EAU	0.6202*	0.5418*	0.7642*	-0.4510*	-0.3499	0.7624*	0.6025*	0.4228	0.7824*	1	
Venezuela	-0.0575	0.5282*	0.2936	-0.0944	-0.1497	0.5151*	0.3307	0.21	0.4079	0.4438*	1

\*10 % statistic significance



**CHAPTER 4:**  
**Public Investment and Productivity Growth in the Venezuelan  
Manufacturing Industry**

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**Abstract**

This paper uses expenditures from the Venezuelan Intergovernmental Decentralization Fund (FIDES) to estimate the effect of public investment on the productivity of Venezuelan manufacturing firms. Because FIDES allocations have been assigned to states since 1993 through a stable mathematical rule, changes in FIDES expenditures come from the interaction between the parameters of the allocation rule and changes in national revenues. This effect is exogenous at the state level and also generates sufficient variation over time so as to allow us to estimate its effect on firm-level productivity. Our estimates indicate an elasticity of productivity with respect to public capital investment of .32-.4, economically a very significant effect. Our results suggest that the decline in the public capital stock is an important part of the explanation for the Venezuelan economic collapse.

We are grateful to Phillipe Aghion, Ricardo Hausmann, and Roberto Rigobon for comments on an earlier version of this paper, as well as to Lenin Balza, Maria Esther Caballero, Leonardo Ortega, and Reyes Rodríguez for excellent research assistance. The usual disclaimer applies.

## **1. Introduction**

Between 1977 and 2001, Venezuelan per worker GDP declined by 36%. During the same time period, the Venezuelan public sector disinvested significantly in its public assets, leading to a decline in non-oil public sector capital stock per worker of 29.1%.

Did this decline in public capital contribute to the collapse in economic growth? Figure 1 shows the time series for non-oil GDP and the non-oil public capital stock, both measured in relation to the number of workers in the non-oil sector. The figure shows clearly that per worker GDP peaks in 1977, and had already declined precipitously by the time that the public capital stock starts declining after 1983. Thus it would appear implausible to explain the initial decline in GDP growth as a result of the decline in the provision of public capital. If anything, it appears that the decline in public investment may be part of a lagged response to the economy's deterioration. However, the Figure also shows that after 1983 both the public capital stock and non-oil GDP continued declining steadily. If we believe that the public capital stock enters positively into the production function, it is plausible that the decline in public capital that occurs after 1983 contributed to the decline in non-oil productivity and production from the late 80s on.<sup>1</sup>

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<sup>1</sup> This decline is not a result of asset sales to the private sector. Venezuela was one of the least aggressive privatizers in the regions during the nineties. Only two large SOEs were sold to the private sector, the state telecommunications firm, which was sold for \$955 million in 1991, and the state-owned airline VIASA,

Such a story would rely on the existence of a strong causal link going from public investment to productivity. The existence of such a link is far from established in the empirical literature. Although there are good theoretical reasons to expect public capital to have an effect on productivity (Arrow and Kurz (1970), Ogura and Yohe (1977)), empirical results are at best mixed. Evidence from the United States presents strong time-series and cross-state correlations between public infrastructure and productivity (Aschauer (1989), Munnell (1990)). However, Hulten and Schwab (1991), Tatom (1991) and Holtz-Eakin (1994) have argued that these results disappear when the time-series data is first-differenced or when fixed effects are introduced in panel data regressions, suggesting that they were due to spurious correlations between non-stationary variables (in the time series) and endogeneity or misspecification (in the cross-section). Fernald (1999), however, found that the construction of the interstate highway system led to a considerable increase in the productivity of transport-intensive industries, consistent with the hypothesis of the existence of a causal link from infrastructure to productivity.

The cross-country evidence is similarly mixed. On the one hand, authors such as Easterly and Rebelo have found that public transport and communication investment are positively correlated with growth, but Devarajan, Swaroop and Zou (1996) and Canning (1999) have argued that infrastructure is overprovided in many developing countries (though Esfanhani and Ramírez (2003) have contested this). Recently, Calderón and Servén (2003b) have argued that a

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which was sold for \$145 million in the same year, and which was later dismantled. Adjusting for these two sales makes no appreciable difference to our public capital stock series.



substantial part of the growth in the output gaps between East Asia and Latin America can be traced back to the cutbacks in infrastructure spending that occurred in Latin America as a result of the fiscal adjustment programs precipitated by the debt crisis in the eighties.

All of these estimates are confronted by a daunting empirical problem. Precisely because of the political forces in action to determine the allocation of investment projects, spending on infrastructure is likely to be an endogenous variable, making identification of its effect on productivity growth difficult. If governments are more likely to invest in prosperous and economically developed regions, then there will be a spurious positive correlation between investment in infrastructure and productivity growth; if policymakers try to use public investment to compensate for the backwardness of existing regions or to help out regions in crisis, in contrast, there will be a downward bias in the least squares estimate of the effect of infrastructure investment on productivity growth. It will be extremely difficult to find exogenous and excludable instruments for investment in infrastructure. For example, Calderón and Servén (2003) have used urban population and population densities as well as lagged values of infrastructure stocks to estimate the effect of infrastructure on per worker GDP. However, if investment in infrastructure is endogenous lagged infrastructure will be correlated with any persistent productivity shocks while population and population densities may have a direct effect on production or be correlated with omitted variables.

This paper addresses the question of endogeneity in the estimation of the effect of public infrastructure spending on productivity by using state-level

variations in infrastructure investments carried out by the Venezuelan Intergovernmental Decentralization Fund (Fondo Intergubernamental para la Descentralización) established in 1993 to finance local infrastructure projects carried out by state and municipal governments in Venezuela. The FIDES was created simultaneously with the approval of a 1993 law establishing a national value-added tax on goods and services. The political negotiation leading to the adoption of the law led the caretaker administration of Ramón J. Velásquez (1993-1994) to accept the distribution of 15% of collected VAT revenues directly to state and municipal governments through FIDES, with the condition that these resources be devoted to investment projects that would be co-financed with the local government's own resources. Since its creation, the 15% proportion of total VAT revenues to be distributed to regions has remained constant.

What is interesting about FIDES for our purposes is that it establishes that each state and local government receives a fraction of total national VAT revenues that is a function of its population (45%), its land area (10%), and a compensation index designed to benefit less-well off states (45%). This compensation is in turn built as a composite of the inverse of its share of revenues plus one minus the state-level Human Development Index.<sup>2</sup>

---

<sup>2</sup> FIDES resources allocated to state  $i$  at time  $t$  are given by the equation:

$$FID_{it} = 0.15 \times VAT_t \left[ 0.45 \times \frac{POP_{it}}{\sum_i^N POP_{it}} + 0.10 \times \frac{L_i}{\sum_i^N L_i} + 0.45 \times CI_{it} \right] \quad (1)$$

where  $VAT_t$  represents national VAT collection at time  $t$ ,  $POP_{it}$  is state  $i$ 's population at time  $t$ ,  $L_i$  is state  $i$ 's land area,  $LA_{it}$  its receipts of transfers from the Special Economic Allocations Fund,  $S_{it}$  its receipt of transfers from the *Situado Constitucional*,  $HDI_{it}$  its Human Development Index (which is between 0 and 1), and  $F_{it}$  its receipts from the part of FIDES that is allocated according to population and land area, and

In practice, variations in FIDES allocations over time come from variations in national level oil and non-oil revenues. These changes have differential effects on public investment across states because the rule that is used to allocate FIDES allowances across states is nonlinear. Changes in national VAT revenues, for example, affect not only the total of resources to be distributed among states but also the share that each state gets of those resources. In other words, these changes generate a source of variation in public investment that is both exogenous at the state level and not collinear with a pure time effect. The source of identification is thus the interaction between a variable which is exogenous at the state level (national variation in revenues) and a rule whose parameters have been unchanged since its adoption.

The rest of this paper proceeds as follows. Section 2 describes the FIDES law. Section 3 discusses our empirical methodology and some issues with our estimation strategy. Section 4 presents our results. Section 5 concludes.

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$$CI_{it} = \frac{1}{\left[ \frac{LA_{it} + S_{it} + F_{it}}{\sum_{i=1}^N LA_{it} + S_{it} + F_{it}} \right]} + (1 - HDI_{it}) \quad (1')$$

$LA_{it}$  refers to resources disbursed according to the Special Economic Allocations Law of 1996, which depend on royalties and state-level refining and oil production.  $S_{it}$  are disbursements carried out according to the *Situado Constitucional*, a rule for distributing among local and state governments one-fifth of total government revenues (including VAT revenues):

$$S_{it} = 0.2 \times (VAT_t + NVAT_{it}) \left( 0.3 \frac{1}{23} + 0.7 \frac{POP_{it}}{\sum_i^N POP_{it}} \right). \quad (3)$$

Changes in  $VAT_t$  affect  $FIDES_{it}$  not only directly but also through the induced effect on the denominator of  $CI_{it}$ , which establishes its nonlinearity. Changes in  $NVAT_t$  as well as oil royalties will also affect  $FIDES_{it}$  nonlinearly through the effect of  $S_{it}$  and  $LA_{it}$  on the denominator of  $CI_{it}$ . All of these effects will be exogenous at the state level and different from a pure time effect because of the rule's nonlinearity.

## **2. The Intergovernmental Decentralization Fund and the Special Economic Assignments Law.**

The Intergovernmental Decentralization Fund, which we will refer to by its Spanish acronym FIDES (Fondo Intergubernamental para la Descentralización) was created in November of 1993 as a result of the political discussion regarding the institution of the value added tax in Venezuela. The VAT reform, originally introduced by the Carlos Andrés Pérez administration before Congress in 1989, had met significant political opposition and had been sidetracked. When Pérez was impeached in 1993, the caretaker administration of Ramón Velásquez negotiated with Congress the approval of this law, subject to the proviso that 15% of VAT revenues would be directly allocated to regional governments for the carrying out of public investments.

The law contemplates a broad definition of areas in which the FIDES may serve to pay the cost of public investments. Particularly important is the list of areas in which these investments can be financed by FIDES, which includes “Projects of productive investment that promote the sustainable development of the community, states and municipalities,” and “works of infrastructure and activities within the framework of national development plans” (FIDES, 2005, Article 22) Although these provisions allow for a broad definition of the type of investment projects, the law does specifically state that these resources must only be used for “programas y proyectos” (programs and projects), a term that in Venezuelan legislation is equivalent to capital expenditures. Projects typically financed include construction of schools, repairs to roads and acquisition of vehicles for use by the local police force.

The fact that these resources are indeed devoted to public investment projects may have to do more with the organizational details of the fund than with the letter of the law. Indeed, the 1999 Venezuelan constitution also requires states to devote at least 50% of their state revenues towards public investment, but no state government in Venezuela currently obeys this prescription. The FIDES law, however, requires the directory of the fund to approve the list of investment projects and to only disburse the funds after approval and subject to coparticipation of the state or local government in funding the project.

### 3. Empirical Strategy

We will use a panel of manufacturing firms derived from the National Institute of Statistics' *Encuesta Industrial* to estimate the effect of FIDES financed public investment on firm-level productivity between 1996 and 2001. We will estimate a firm-level production function:

$$y_{it} = \alpha_0 + \alpha_1 k_{it} + \alpha_2 l_{it} + \alpha_3 a_{it} + \omega_{it} \quad (1)$$

Where  $y_{it}$  is the log of real value added,  $k_{it}$  is the log of the capital stock,  $l_{it}$  is employment, and  $a_{it}$  is the log of the firm's age measured in years.  $\omega_{it}$  is the firm level productivity, which is determined according to:

$$\omega_{it} = \eta_i + \beta p_{it} + \varepsilon_{it} \quad (2)$$

so that firm-level productivity is composed by a firm-specific effect, the productivity effect of the stock of public infrastructure,  $p_{it}$  and a white noise term.

We do not observe the stock of public infrastructure. However, we do know that it evolves according to:

$$p_{it} = (1 - \delta)p_{it-1} + i_t \quad (3)$$

Where  $\delta$  is the rate of depreciation and  $i_t$  is public investment in infrastructure. Let public investment in infrastructure be the sum of FIDES and non-FIDES investment. The availability of greater resources from FIDES will impact public investment in infrastructure in two ways. First of all, according to the FIDES law, states must put down a minimum share of their own resources towards financing of these projects. Furthermore, the availability of FIDES may allow state governments to carry out projects that they would not otherwise have carried out with their own resources. On the other hand, states may simply use FIDES to carry out projects that they would have carried out anyway, so that the availability of FIDES resources may reduce non-FIDES investment. The total effect of FIDES resources on investment may thus be greater than or less than one.<sup>3</sup> We summarize it in the multiplier  $\gamma$ , so that investment in infrastructure is:

$$i_{it} = \gamma f_{it} + n_{it} = \gamma f_{it} + n_{i0} + (n_{it} - n_{i0}) \quad (4)$$

Where  $f_{it}$  is FIDES (or FIDES-induced) investment,  $n_{it}$  is infrastructure investment that is unrelated to FIDES and  $n_{i0}$  is its unconditional mean  $E(n_{it})$ . Note that since  $\delta f_{it}$  includes the direct and indirect effect of FIDES expenditures,  $n_{it}$  is by definition uncorrelated with  $f_{it}$ .

---

<sup>3</sup> The importance of these effects is the main reason that we do not follow an IV strategy in this paper, and prefer to estimate the reduced form coefficient of productivity on FIDES investment. Attempts to instrument realized FIDES expenditures with budgeted expenditures yielded strong evidence of non-excludability of the instrument.

Taking first-differences of (2) and using (3) and (4) gives us:

$$\omega_{it} - \omega_{it-1} = \beta n_{i0} - \beta \delta \eta_i - \beta \delta \omega_{it-1} + \beta \gamma f_{it} + \beta (n_{it} - n_{i0}) + \varepsilon_{it} + (1 - \beta \delta) \varepsilon_{it-1} \quad (5)$$

Equation (5) tells us that changes in productivity are a combination of five terms: a firm-specific fixed effect  $\beta n_{i0} - \beta \delta \eta_i$ , a “convergence” effect  $-\beta \delta \omega_{it-1}$  that depends on the initial level of productivity and is caused by the depreciation of public infrastructure, the effect of FIDES investment, captured by  $\beta \gamma f_{it}$ , and a linear combination of white-noise terms  $\beta (n_{it} - n_{i0}) + \varepsilon_{it} + (1 - \beta \delta) \varepsilon_{it-1}$  that can be treated as a sole disturbance. This gives rise to the specification that we will present in the following section:

$$\omega_{it} = a_0 + a_1 \omega_{it-1} + a_2 f_{it} + \chi_i + v_{it} \quad (6)$$

where the expected value of  $a_2$  equals  $\beta \gamma$  and is positive, and

$v_{it} = \beta (n_{it} - n_{i0}) + \varepsilon_{it} + (1 - \beta \delta) \varepsilon_{it-1}$ . Note that  $f_{it}$  is uncorrelated with the error term  $v_{it}$ , so that  $a_2$  can be estimated consistently by panel methods as long as the fixed effect  $\chi_i$  is differenced away. Note also from the definition of  $v_{it}$  that the disturbance in this regression will be autocorrelated.

Equation (6) represents a dynamic panel that can be estimated by the techniques of Arellano and Bond (1991). An alternative and simpler specification arises if we are willing to assume that the depreciation rate of public infrastructure is negligible. Here (5) becomes:

$$\omega_{it} - \omega_{it-1} = b_0 + b_2 f_{it} + \chi_i + v_{it} \quad (7)$$

which can be estimated through conventional panel estimators, provided that a correction for autocorrelation is made.

In practice, our estimation strategy will be carried out in two steps. In the first step we will estimate  $\omega_{it}$  by the Olley-Pakes (1996) semi-parametric method that allows to obtain consistent estimates of  $\alpha_0, \alpha_1, \alpha_2$  and  $\alpha_3$  that take into account the endogenous determination of firm-level capital and its likely correlation with productivity shocks arising from two forces: (i) the fact that firms that experience a positive productivity shock are likely to invest more, and (ii) the fact that firms that experience a positive productivity shock are less likely to exit. The Olley-Pakes methodology consists of three steps. In the first step, we estimate the production function semi-parametrically as a function of  $k_{it}, l_{it}, a_{it}$  and private investment  $c_{it}$ . The basic idea is that since investment is an increasing function of productivity then controlling for private investment will allow us to recover a consistent estimate of the coefficient on  $l_{it}$ . In the second step we estimate the probability of survival as a non-parametric function of  $k_{it}, a_{it}$ , and  $c_{it}$ . Using this estimate of the probability of survival, we can control for selection bias effects and estimate the production function coefficients on  $k_{it}$  and  $a_{it}$  by non-linear least squares. When we have all the parameter estimates for (1) we can simply calculate  $\omega_{it}$  and go on to estimate (6) and (7) through an Arellano-Bond or fixed-effects estimator.

One important observation about our data is that our indicator of FIDES expenditure refers to the funds allocated in yearly budgets, and not the fraction of those funds that was actually spent. We consider the budget allocations to be the correct variable for our estimation strategy because, in contrast to realized expenditures, budget allocations are strictly determined



by the FIDES rule and thus truly exogenous. It is also true that the FIDES law generated an entitlement for regions to use these resources, so that the budgeted allocations were, unlike other items, in effect available to be spent by the regions provided that their projects satisfied the technical requirements imposed by the FIDES Board of Directors. The fact that  $f_{it}$  measures budget allocations implies that our estimate should be interpreted as the total effect on a region's productivity of providing resources to that region to spend on infrastructure. This total effect, which is captured by the product of the parameters  $\gamma$  and  $\beta$  multiplying  $f_{it}$  in (6) and (7), is different from the production function coefficient  $\beta$  that other studies commonly seek to estimate. That said,  $\gamma\beta$  may be the more relevant parameter for policy purposes, as it captures the expected effect of providing a region with resources that must be spent on public investment projects. This is the effect that a multilateral bank that finances an infrastructure project, a national government deciding whether to transfer funds to regional governments for public investment, or a voter deciding whether to support higher taxes in order to finance public investment would all be interested in.

#### **4. Estimation Results**

Table 1 shows the results of our estimates of equation (7) using autocorrelation-corrected fixed effects panel estimation. Note that we do not present random effects or cross-sectional estimates because our argument for exogeneity refers to the changes over time in FIDES allocations, which are

generated by the interaction of the allocation rule and changes in national revenue, and not to the cross-sectional differences. The latter would simply be a reflection of the political choices made at the time at which the rule was originally set. All of our estimates include a set of year dummies. The dependent variable is constructed as outlined in the previous section; the independent variable of interest is the log of budgeted FIDES expenditures as a fraction of Gross State Product. The latter is estimated using UNDP's (various years) estimates of state-level income.

The estimates of Table 1 show a significant effect of FIDES investment on productivity. In the estimation with no controls, the estimate implies an elasticity of 0.4 of output to public investment. This is remarkably similar to Fernald's (1999) estimate of the elasticity of manufacturing productivity to the construction of the US interstate highway system of .38. The value of the coefficient diminishes somewhat with the introduction of controls for the firm's capital share, ownership by residents and ratio of exports to production, as well as the state share of manufacturing in Gross State Product: when all 4 controls are introduced (column 5) the elasticity estimate falls to .32 and its statistical significance dips to 10%. Two of the controls are significant: the ownership share of residents and the share of exports in firm production. Interestingly, the significance of these coefficients appears to be picking up an interaction with FIDES investment: when we introduce a full set of interaction terms these are strongly significant (at 1%) and significance of both FIDES investment and the ownership and export variables disappears. This suggests that the effect of FIDES on productivity occurs through its effect

on the productivity of nationally-owned firms and firms that produce for the domestic sector ( as opposed to those that produce exportables).<sup>4</sup>

Similar results arise from the Arellano-Bond estimation of equation (6). The coefficient estimate is somewhat lower (.32). However, note that given that the estimated specification has a lagged disturbance term, the coefficient on FIDES investment reflects the short-run elasticity, whereas the long run elasticity would be equal to .49 ( $0.323/(1-0.345)$ ). In the Arellano-Bond estimation the significance of FIDES investment is much higher and remains robust to the introduction of controls. It loses statistical significance, as before, only when a full set of interaction terms is introduced. In this case we also find a negative significant interaction with the share of exports in gross production and the share of resident ownership. The interaction with the capital share is now also significant (at 10%).

As noted in the previous section, implementation of the Olley-Pakes algorithm requires estimation of a survival probability function. In order to do this, it is necessary to have data on entry and exit of firms. However, the *Encuesta Industrial* is a random survey in which a firm may exit the sample because it is no longer operating or because it was no longer surveyed. When estimating survival probabilities, we take advantage of the fact that in the *Encuesta Industrial's* sample all plants of more than 100 employees are always covered. In other words, the *Encuesta* becomes a census for plants with more than 100 employees. We thus estimate the survival probability

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<sup>4</sup> This effect could be due to the fact that FIDES investment is allocated to more local (small) type projects decided by the state governments.

function for firms with more than 100 employees and then use the coefficients from that function to correct for selection bias for all firms. Note that this simply makes use of the implicit assumption made when one estimates the production function (1) for the whole sample, which is that small and large firms have the same parameters in their production function. However, the doubt may naturally arise about how important the approximation error is that is induced by this method. In Tables 3 and 4 we present the results of carrying out all three steps (instead of just the second one) of the Olley-Pakes algorithm restricted to plants of more than 100 employees. The coefficient on FIDES is still positive and the point estimate of the regression with no controls is similar in magnitude but is now statistically insignificant. The interaction term between FIDES investment and domestic ownership does remain significant (at 5%), but the interaction with exports is no longer so. In the Arellano-Bond estimates (Table 4) a similar pattern emerges: positive albeit insignificant coefficient estimates on FIDES, with two of the interactions significant: that with the capital share (at 5%) and that with exports (at 10%).

There are two possible ways to interpret the weakness of the coefficient when one passes to the restricted sample. One is as a signal that the application of the Olley-Pakes algorithm to the broader sample is inappropriate. The other one is as an indication that the effect of FIDES expenditure is relevant only for small firms. Consistently with this hypothesis, splitting the broader sample between large and small firms (using

the 100 employees threshold) delivers significant coefficients only for the sample of small firms under both specifications.

One common criticism of the Olley-Pakes approach is that it relies on investment to proxy for unobservable shocks to productivity. Levinsohn and Petrin (2003) have argued that materials inputs may be a better proxy for unobservable shocks as they respond to the entire productivity term – instead of just to the “news” that investment may be capturing. In order to check the robustness of our approach to the method used to estimate productivity, we reestimate our regressions of Tables 1 and 2 using the Levinsohn-Petrin methodology, where we have chosen firm electricity consumption as our proxy for materials use. Results are displayed in Tables 5 and 6. The correlation between the Levinsohn-Petrin and the Olley-Pakes estimates of productivity is .9568, so it is not surprising that our results are similar. Indeed, the elasticity estimate becomes somewhat stronger in the fixed effects specification, increasing to .44 (as opposed to .40 using Olley-Pakes) in the baseline estimation of column 1, but slightly weaker in the Arellano-Bond specification, where it falls to .44 (from .49 in the Olley-Pakes specification) of column 1, Table 6. All of the basic results are, however, unchanged: the sign on the FIDES variable remains positive and significant until the full set of interactions is introduced, when the significance is picked up by the interactions between FIDES investment and domestic ownership on the one hand and exports (with a negative sign) on the other.

One possible explanation of our effect is that productivity-enhancing investments are migrating from areas with low infrastructure investment to

areas with high infrastructure investment. While our estimate would still be appropriate as a measure of the effect on a state's productivity of undertaking higher levels of public investment, we could not use it to infer the effect of greater public investment on *national* productivity, as part of the increase in productivity enjoyed by high public investment states would be offset by declines in productivity suffered by low public investment states. In order to control for this effect, we present estimates of our baseline specification adding a control for average FIDES investment in neighboring states. The results of this exercise are shown in Tables 7 and 8. While the effect of neighbors' FIDES investment on a state's productivity is not significantly positive in any of the specifications, the coefficient on home state FIDES investment remains statistically significant, with a somewhat greater elasticity than in the baseline exercise.

## **5. Concluding Comments**

This paper has used expenditures of the Venezuelan Intergovernmental Decentralization Fund (FIDES) to estimate the effect of public investment on the productivity of Venezuelan manufacturing firms. Because FIDES allocations are assigned to states through a rule that divides national VAT receipts according to the states' population, territorial expansion and initial level of development, and as that rule has remained stable since the Fund was created by law in 1993, changes in FIDES expenditures come from the interaction between the parameters of the allocation rule and changes in national revenues. This effect is exogenous at the state level and also

generates sufficient variation over time so as to allow us to estimate its effect on firm-level productivity.

The estimates in Tables 1 and 2 indicate an elasticity of productivity with respect to public capital investment of .32-.4. Economically, this is a very significant effect. In 2001, the ratio of the stock of public capital to GDP was 0.615, so that the estimated effects would imply a short-run rate of return to infrastructure investment of .52-.65 and a long-run rate of return (i.e., the partial derivative of steady-state income to changes in infrastructure spending) of .80. This evidence suggests that cutting investment in infrastructure does appear to be a very bad deal both from a fiscal viewpoint as well as from the perspective of society as a whole.

In Figure 2, we use the .32 elasticity estimate to simulate what the economy's path of non-oil GDP would have been, according to equations (1) and (2), if the public capital stock had stayed constant at its 1983 value. The simulated capital stock is higher than the historical capital stock for two reasons: the direct effect of the increase in the public capital stock, equal to  $\beta dp_i$ , and an indirect effect through its effect on capital accumulation, which we take to react with an elasticity of  $1/(1-\alpha)$ , where  $\alpha$  is the capital share. The effects are striking. We find that per capita GDP would be 37% higher than its present value if the public capital stock had not declined. It would still be less than its 1978 peak, but only by 12% instead of the actual 36%. Our exercise thus suggests that the decline in the public capital stock is an

important part of the explanation for the Venezuelan economic collapse.<sup>5</sup>

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<sup>5</sup> There are two important caveats to this calculation. To the extent that the elasticity of productivity to the public capital stock is different in manufacturing than in the rest of the economy, this calculation may give an inaccurate estimate of the counterfactual scenario of a constant public capital stock. The second one is that this calculation takes our estimated parameters as estimates of  $\beta$ , which could in reality be smaller if  $\gamma > 1$ .



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Table 1: Fixed Effects with AR(1) disturbances (All Firms)

Dependent Variable	Change in Productivity					
	1	2	3	4	5	6
FIDES	0.3972 (2.28)**	0.3966 (2.28)**	0.3512 (1.97)**	0.3412 (1.91)*	0.315 (1.76)*	0.0522 (0.23)
Capital Share (rK/wL+rK)		-0.0214 (0.18)	-0.0199 (0.16)	-0.0224 (0.19)	-0.0211 (0.17)	-0.2295 (0.81)
Development (Manuf VA/PIB)			0.0001 (1.14)	0.0001 (1.15)	0.0001 (1.17)	0.0007 (1.94)*
Residents (Percent Ownership of Residents)				0.0015 (2.03)**	0.0015 (2.02)**	-0.0026 (1.49)
Export (Exports/Production)					-0.099 (1.82)*	0.1482 (1.62)
FIDES*Capital Share						0.1924 (0.80)
FIDES*Development						-0.0004 (1.57)
FIDES*Residents						0.0038 (2.61)**
FIDES*Export						-0.6051 (3.31)**
Constant	-4.8788 (0.87)	-6.7615 (1.04)	-6.5284 (1.05)	-7.1096 (1.12)	-6.9898 (1.08)	-8.7605
N	5675	5669	5669	5668	5668	5668
R <sup>2</sup>	0.0745	0.0751	0.0755	0.0765	0.0774	0.0828

Absolute value of t statistics in parentheses. All specifications include time dummies. \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%

Table 2: Arellano-Bond (All Firms)

<b>Dependent Variable</b>	<b>Productivity</b>					
Lagged Productivity	0.3452229 (8.82)***	0.3490881 (8.89)***	0.3461752 (8.83)***	0.344972 (8.82)***	0.3446922 (8.82)***	0.3367109 (8.71)***
FIDES	0.3233016 (3.59)***	0.3261382 (3.61)***	0.3148505 (3.49)***	0.3159334 (3.50)***	0.3141896 (3.49)***	0.1698891 (1.33)
Capital Share (rK/wL+rK)		-0.1785324 (1.56)	-0.1747917 (1.53)	-0.1754684 (1.54)	-0.1717127 (1.51)	-0.4338046 (2.37)**
Development (Manuf VA/PIB)			0.0001271 (1.31)	0.0001299 (1.34)	0.0001318 (1.37)	0.00018 (0.91)
Residents (Percent Ownership of Residents)				0.0009647 (1.51)	0.0009526 (1.49)	-0.0006611 (0.63)
Export (Exports/Production)					-0.1236608 (1.34)	0.1364423 (2.16)**
FIDES*Capital Share						0.2718932 (1.95)*
FIDES*Development						-0.0000202 (0.16)
FIDES*Residents						0.001618 (1.78)*
FIDES*Export						-0.6259281 (3.16)***
Constant	-0.1234322 (8.46)***	-0.1160632 (2.94)***	-0.1209379 (8.02)***	-0.1214537 (8.05)***	-0.1202148 (7.98)***	-0.1167837 (7.63)***
Sargan test of over-identifying restrictions	0.1098	0.112	0.1183	0.1205	0.1233	0.1624
Arellano-Bond test that average autocovariance in residuals of order 1 is 0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Arellano-Bond test that average autocovariance in residuals of order 2 is 0	0.1094	0.1296	0.1298	0.1253	0.1275	0.1975
<b>N</b>	5366	5359	5359	5358	5358	5358

Absolute value of t statistics in parentheses. All specifications include time dummies. \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%. Last three rows list p-values for rejection of null hypothesis in each of the three tests.

Table 3: Fixed Effects with AR(1) disturbances (Large Firms)

<b>Dependent Variable</b>	<b>Change in Productivity</b>					
FIDES	0.4515 (1.57)	0.4452 (1.54)	0.1492 (0.50)	0.1419 (0.48)	0.056 (0.19)	-0.2816 (0.75)
Capital Share (rK/wL+rK)		-0.1327 (0.77)	-0.1501 (0.87)	-0.1466 (0.85)	-0.1146 (0.67)	-0.4972 (1.18)
Development (Manuf VA/PIB)			0.0007 (3.64)***	0.0007 (3.65)***	0.0008 (3.99)***	0.0017 (2.98)***
Residents (Percent Ownership of Residents)				0.0012 (1.13)	0.0011 (1.04)	-0.0041 (1.52)
Export (Exports/Production)					-1.1222 (4.77)***	-0.6622 (1.08)
FIDES*Capital Share						0.3488 (0.98)
FIDES*Development						-0.0007 (1.64)
FIDES*Residents						0.005 (2.16)**
FIDES*Export						-0.466 (0.86)
Constant	-1.4577 (0.63)	-1.535 (0.66)	-1.8033 (0.77)	-1.9026 (0.81)	-1.9665 (0.81)	-1.8052 (0.73)
N	2129	2129	2129	2129	2129	2129
R <sup>2</sup>	0.0818	0.0822	0.0899	0.0905	0.1039	0.1095

Absolute value of t statistics in parentheses. All specifications include time dummies. \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%

Table 4: Arellano-Bond, Large Firms

Dependent Variable	Productivity					
	0.2827831 (5.78)***	0.2828891 (5.78)***	0.287732 (5.92)***	0.2891572 (5.95)***	0.2971224 (6.14)***	0.2905152 (6.05)***
Lagged Productivity						
FIDES	0.229978 (1.48)	0.2347314 (1.51)	0.1763094 (1.13)	0.1786343 (1.14)	0.1754602 (1.13)	0.2206786 (0.95)
Capital Share (rK/wL+rK)		-0.1491047 (0.95)	-0.1650096 (1.05)	-0.1611685 (1.03)	-0.1291719 (0.84)	-0.5573552 (2.15)**
Development (Manuf VA/PIB)			0.0005431 (3.32)***	0.0005481 (3.36)***	0.0006146 (4.02)***	0.0008068 (2.39)**
Residents (Percent Ownership of Residents)				0.001026 (1.16)	0.0008955 (1.03)	0.0012311 (0.69)
Export (Exports/Production)					-1.122256 (3.43)***	-0.6420202 (1.35)
FIDES*Capital Share						0.4084824 (1.98)**
FIDES*Development						-0.000134 (0.64)
FIDES*Residents						-0.0003442 (0.21)
FIDES*Export						-0.4467807 (1.67)*
Constant	0.0056813 (0.19)	0.0022151 (0.07)	-0.0534271 (1.28)	-0.0907628 (3.82)***	-0.0787124 (3.33)***	-0.077976 (3.26)***
Sargan test of over-identifying restrictions	0.0623	0.0582	0.0689	0.0677	0.0825	0.0709
Arellano-Bond test that average autocovariance in residuals of order 1 is 0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Arellano-Bond test that average autocovariance in residuals of order 2 is 0	0.208	0.2149	0.2	0.1778	0.1448	0.1606
<b>N</b>	2083	2083	2083	2083	2083	2083

Absolute value of t statistics in parentheses. All specifications include time dummies. \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%. Last three rows list p-values for rejection of null hypothesis in each of the three tests.





**Table 5: Levinsohn and Petrin productivity, Fixed Effects Specification**

<b>Dependent Variable</b>	<b>Change in Productivity</b>					
FIDES	0.4347 (2.52)**	0.4361 (2.54)**	0.3947 (2.24)**	0.3869 (2.19)**	0.3626 (2.05)**	0.1532 (0.68)
Capital Share (rK/wL+rK)		0.0238 (0.20)	0.0252 (0.21)	0.0232 (0.19)	0.0243 (0.20)	-0.1264 (0.45)
Development (Manuf VA/PIB)			0.0001 (1.05)	0.0001 (1.05)	0.0001 (1.07)	0.0007 (2.05)**
Residents (Percent Ownership of Residents)				0.0012 (1.63)	0.0012 (1.62)	-0.0024 (1.40)
Export (Exports/Production)					-0.0919 (1.71)*	0.1537 (1.69)*
FIDES*Capital Share						0.139 (0.59)
FIDES*Development						-0.0004 (1.72)*
FIDES*Residents						0.0034 (2.33)**
FIDES*Export						-0.6009 (3.32)***
Constant	-5.5104 (1.08)	-8.0843 (1.26)	-7.7791 (1.27)	-8.2375 (1.33)	-8.1668 (1.28)	-10.2563 (1.34)
N	5684	5678	5678	5677	5677	5677
R <sup>2</sup>	0.0763	0.0773	0.0776	0.0783	0.079	0.0841

Absolute value of t statistics in parentheses. All specifications include time dummies.

\*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%

**Table 6: Levinsohn and Petrin productivity, Arellano-Bond Specification**

<b>Dependent Variable</b>	<b>Productivity</b>					
Lagged Productivity	0.3334 (8.48)***	0.3386 (8.59)***	0.3369 (8.55)***	0.336 (8.55)***	0.3353 (8.54)***	0.3252 (8.37)***
FIDES	0.2937 (3.37)***	0.2955 (3.38)***	0.2876 (3.30)***	0.2886 (3.31)***	0.2872 (3.30)***	0.1521 (1.23)
Capital Share (rK/wL+rK)		-0.003025 (0.03)	-0.001877 (0.02)	-0.001814 (0.02)	0.0017444 (0.01)	-0.161235 (0.86)
Development (Manuf VA/PIB)			0.000106 (1.09)	0.0001067 (1.10)	0.0001085 (1.12)	0.0001115 (0.58)
Residents (Percent Ownership of Residents)				0.0005535 (0.89)	0.0005418 (0.87)	-0.001064 (1.05)
Export (Exports/Production)					-0.125673 (1.35)	0.1508573 (2.39)**
FIDES*Capital Share						0.1669408 (1.21)
FIDES*Development						1.066E-05 (0.09)
FIDES*Residents						0.001596 (1.81)
FIDES*Export						-0.64819 (3.25)***
Constant	-0.094156 (6.79)***	-0.078467 (2.08)**	-0.074866 (1.99)**	-0.090918 (6.34)***	-0.089681 (6.26)***	-0.085959 (5.91)***
N	5374	5367	5367	5366	5366	5366
Sargan test of over- identifying restrictions	0.036	0.040	0.044	0.044	0.046	0.051
Arellano-Bond test that average autocovariance in residuals of order 1 is 0	0.000	0.000	0.000	0.000	0.000	0.000
Arellano-Bond test that average autocovariance in residuals of order 2 is 0	0.084	0.115	0.113	0.108	0.112	0.192

Absolute value of t statistics in parentheses. All specifications include time dummies. \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%. Last three rows list p-values for rejection of null

**Table 7: "Voting with Feet" Specification, Fixed Effects**

<b>Dependent Variable</b>	<b>Change in Productivity</b>					
FIDES	0.5298 (2.75)***	0.5218 (2.71)***	0.4762 (2.42)**	0.4828 (2.46)**	0.4544 (2.31)**	0.1916 -0.78
FIDES Investment in neighboring states	-0.5111 -1.59	-0.4807 -1.5	-0.479 -1.49	-0.489 -1.52	-0.4833 -1.51	-0.4396 -1.37
Capital Share (rK/wL+rK)		-0.0159 -0.13	-0.0144 -0.12	-0.0132 -0.11	-0.0122 -0.1	-0.2311 -0.81
Development (Manuf VA/PIB)			0.0001 -1.14	0.0001 -1.13	0.0001 -1.15	0.0007 (1.97)**
Residents (Percent Ownership of Residents)				0.0015 (2.03)**	0.0015 (2.02)**	-0.0024 -1.42
Export (Exports/Production)					-0.0994 (1.83)*	0.1437 -1.57
FIDES*Capital Share						0.2019 -0.84
FIDES*Development						-0.0004 -1.62
FIDES*Residents						0.0037 (2.53)**
FIDES*Export						-0.5956 (3.25)***
Constant	-4.3538 -0.77	-6.2092 -0.95	-6.0041 -0.96	-0.4257 -0.98	-0.3988 -0.91	-0.1632 -0.36
N	5675	5669	5669	5668	5668	5668
R <sup>2</sup>	0.0751	0.0757	0.076	0.0769	0.0777	0.083

Absolute value of t statistics in parentheses. All specifications include time dummies.

\*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%

**Table 8: "Voting with Feet" Specification, Arellano-Bond**

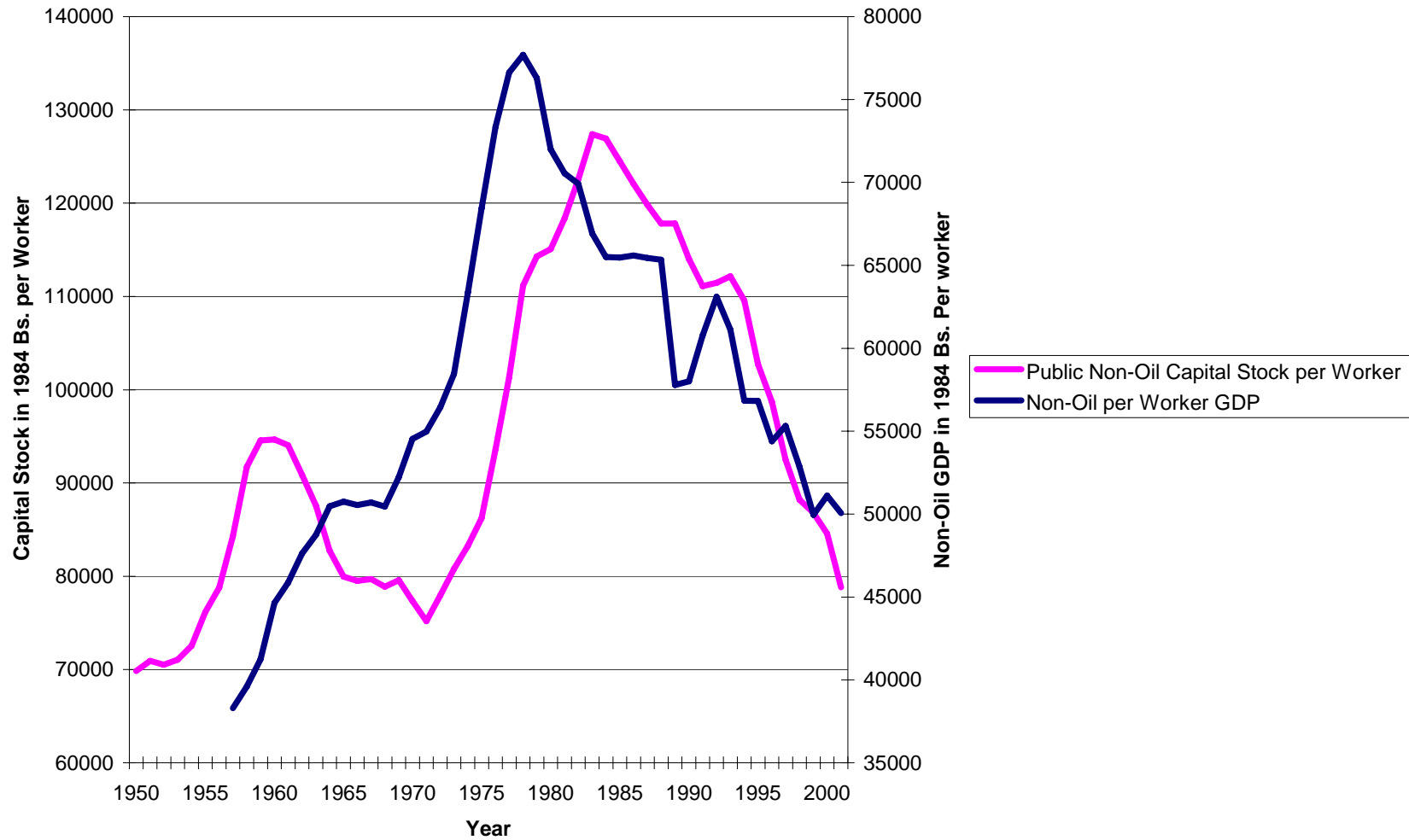
<b>Dependent Variable</b>	<b>Productivity</b>					
Lagged Productivity	0.3442 (8.80)***	0.348 (8.87)***	0.3453 (8.81)***	0.344 (8.80)***	0.3437 (8.80)***	0.3363 (8.70)***
FIDES	0.3152 (3.50)***	0.318 (3.52)***	0.307839 (3.41)***	0.3083 (3.42)***	0.3063 (3.40)***	0.168 (1.32)
FIDES Investment in neighboring states	-0.164926 (0.86)	-0.168299 (0.88)	-0.150619 (0.79)	-0.163088 (0.85)	-0.169047 (0.88)	-0.091899 (0.48)
Capital Share (rK/wL+rK)		-0.180127 (1.58)	-0.176336 (1.54)	-0.177154 (1.55)	-0.173434 (1.52)	-0.435452 (2.38)**
Development (Manuf VA/PIB)			0.000123 (1.27)	0.000126 (1.30)	0.000127 (1.32)	0.000179 (0.90)
Residents (Percent Ownership of Residents)				0.000979 (1.53)	0.000967 (1.52)	-0.000623 (0.59)
Export (Exports/Production)					-0.124212 (1.35)	0.134533 (2.11)**
FIDES*Capital Share						0.272587 (1.96)*
FIDES*Development						-2.1E-05 (0.17)
FIDES*Residents						0.001587 (1.73)*
FIDES*Export						-0.621865 (3.14)***
Constant	-0.1017 (3.48)***	-0.1039 (3.55)***	-0.1012 (3.49)***	-0.1001 (3.45)***	-0.0981 (3.38)***	-0.1048 (3.65)***
N	5366	5359	5359	5358	5358	5358
Sargan test of over-identifying restrictions	0.110	0.112	0.118	0.120	0.123	0.161
Arellano-Bond test that average autocovariance in residuals of order 1 is 0	0.000	0.000	0.000	0.000	0.000	0.000
Arellano-Bond test that average autocovariance in residuals of order 2 is 0	0.111	0.131	0.132	0.127	0.130	0.199

Absolute value of t statistics in parentheses. All specifications include time dummies. \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%. Last three rows list p-values for rejection of null hypothesis in each of the three tests.



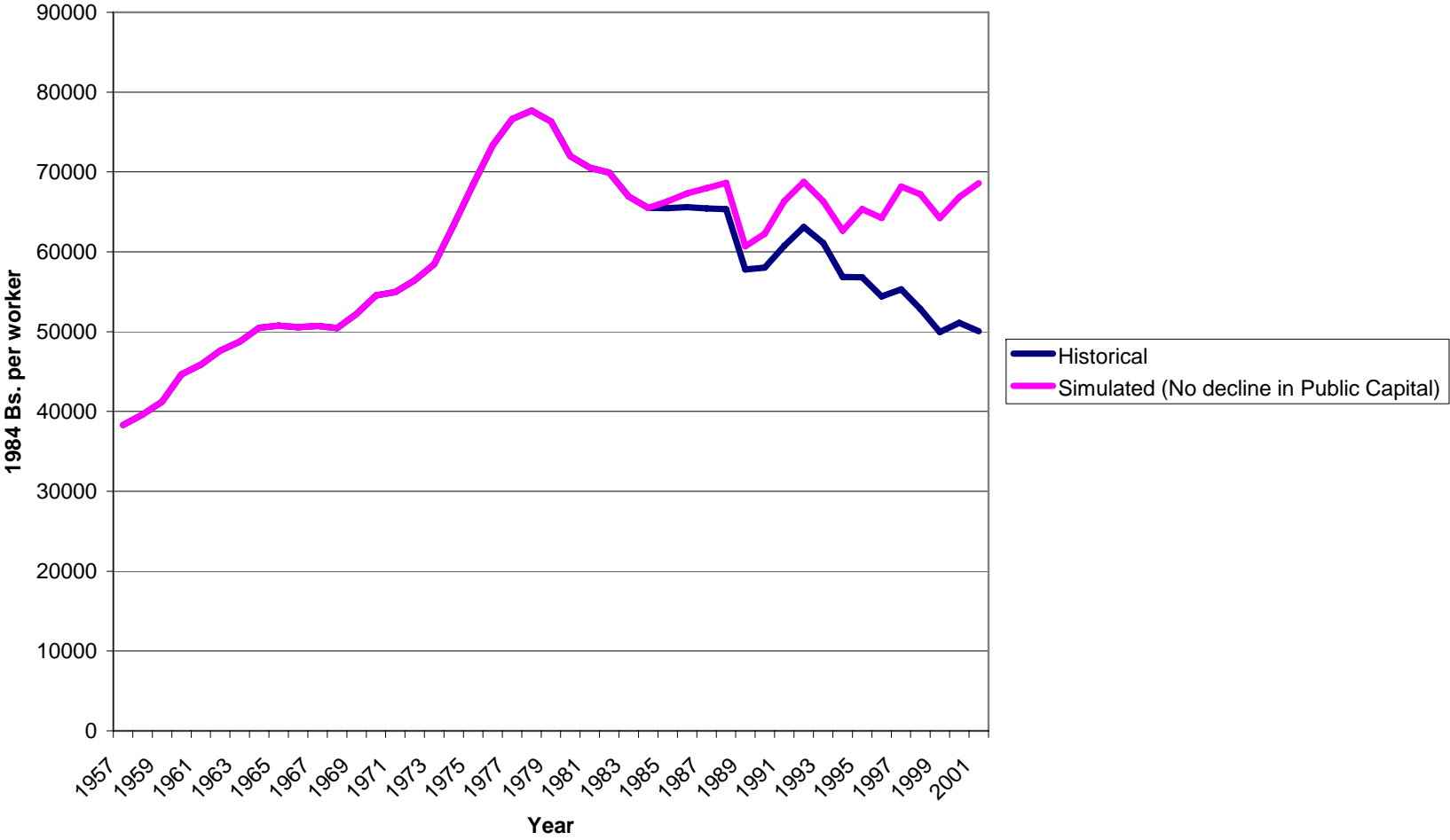


**Figure 1: Public Capital and Non-Oil GDP, 1950-01**



Source: Own Estimates based on BCV (2000), BCV(Various Years), Baptista (2002) and Ministerio de Energía y Minas (Various Years)

**Figure 2: Historical and Simulated per Worker GDP, Scenario of No Decline in Infrastructure Investment**





**CHAPTER 5:**  
**The Incidence of Labor Market Reforms on Employment in the Venezuelan Manufacturing Sector**  
**1995-2001**

**Omar Bello (\*)**  
**Adriana Bermúdez (\*\*)**

**Abstract**

In this paper we provide evidence on the incidence of labor regulations on employment in the Venezuelan manufacturing sector. We use a panel data set of manufacturing firms processed by Pineda and Rodríguez (2006) for the 1995-2001 period. During the second semester of 1997 important changes in labor regulations took place which fully impacted in 1998. We studied the effect of such changes on employment in that sector. Following Gruber (1997), we averaged the variables in our data set for two periods: 1995-1997, and 1998-2001. We performed that procedure for both a balanced panel and an unbalanced panel of firms. Using those averages we estimate regressions in differences for blue collar workers, for white collar workers, and for all workers. In order to avoid endogeneity problems, we used different labor regulation cost indices calculated by Bermúdez (2006). Our result indicated that the cost of labor regulations had a negative effect on the generation of employment.

Key words: Labor demand; Wages, Compensation and Labor Costs; Severance Pay; Labor Law  
JEL Classification: J23; J3; J65; K31

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**1- Introduction**

During the last 30 years Venezuela has experienced disappointing labor market results. The real

average wage has declined sharply from Bs. 3,499 in 1980 to Bs. 865 in 2003. (measured in 1997 prices)<sup>1</sup>. Over time minimum wages have become more binding as the difference between the average wage and median wage has diminished with respect to the minimum wage. A larger portion of Venezuelan workers are thus earning wages at or below the level of minimum wages<sup>2</sup>. Despite the drop in real wages, there has been an increasing trend in unemployment since 1980. Another sign of the deterioration of the labor market is the sharp decrease in the formality rate since 1993<sup>3</sup>.

There are some indications that the Venezuelan regulatory environment –and particularly labor regulations- could be an important factor explaining the adverse outcomes in the labor market. Studies such as Márquez and Pagés (1998), Botero et al. (2003), Heckman and Pagés (2000 and 2003), and World Bank (2007) have created indices that capture the cost of labor regulations in cross-country comparisons using one or two observations per country. In all of these studies Venezuela is found to have one of the most burdensome and expensive labor regulations when compared to other countries in Latin American and the rest of the world.

An important feature of Venezuela's labor market is that there have been several changes in regulations in the last thirty years<sup>4</sup>. The case of Venezuela should be interesting to labor economists worldwide because: 1) the structural labor reforms in Venezuela have not been studied empirically; 2) some of those changes have not been applied to all sectors or firms at the same time, and 3) some of the regulations have been changed more frequently than in other countries<sup>5</sup>. For example while in the US the federal minimum wage has not been modified since 1997, in Venezuela it has been modified at least annually since that year

Márquez et al. (1995) and Orlando (2000) have documented the effects of some of those regulations in Venezuela in terms of the impact on labor cost at a single point in time. Those authors show that due to those interventions in the labor market there is a difference between wage and marginal cost of labor. Marquez et al. (1995) calculated that in 1994, the yearly cost of a worker earning the

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<sup>1</sup> Nominal wages deflated using consumer's price index base 1997.

<sup>2</sup> Evidence of this has been found by Freije (2003), IADB (1999) and Kristensen and Cunningham (2006).

<sup>3</sup> Venezuela is the country that experienced the fastest growth in the informality rate in LAC during the period 1990-2001 according to the ILO.

<sup>4</sup> Venezuela's labor market regulations have a long tradition. The first Venezuelan Labor Law (1936) gave the government the mandate to implement a minimum wage. This occurred earlier than in the United States where the minimum wage legal framework, the Fair Labor Standards Act, was approved in 1938.

<sup>5</sup> Lora and Pagés (1996), Lora (2001) reported that there were very few labor reforms in Latin American countries between the mid eighties and 1999 -including Venezuela - but Bermúdez (2006) reported important and drastic structural changes in Venezuelan labor regulations, especially between 1990 and 1994, in addition to the more commonly known labor reform of 1997.

minimum wage was 118 percent greater than the annual wage while for a worker earning ten minimum wages that figure was 46 percent higher than the wage. Orlando (2000), using the 1997 labor regulatory legal framework, estimated that for a worker with five year of tenure the yearly labor cost was 73 per cent higher than the annual wages.

Bermúdez (2006) describes, quantifies, and analyzes in detail the changes of labor laws and regulations for the period 1975-2005. Those regulations include several minimum wage changes; payroll taxes such as: INCE, social security, unemployment insurance, and national housing policy contributions; different bonuses such as: vacation bonus, child-care bonus, participation in the firm's profit bonus, indexed bonus and several non-indexed bonuses; and some direct dismissal costs such as: advance notice, seniority payments, and severance payments. In addition, there have been several periods during which dismissals have been banned for low wage workers. She found that all these labor regulations in Venezuela have made the process of hiring and firing workers for large firms costlier and more difficult than for smaller firms. Notice that those changes in regulations constitute variations to labor costs that are exogenous to firms. Summarizing, she found two stylized facts regarding Venezuela's labor market: it is heavily regulated, and the mandated labor cost implied by those regulations has increased over time.

In this paper, we estimate the impact of changes in some of the Venezuela's labor markets regulations on manufacturing sector employment during the 1995-2001 period. Specifically in 1997 a reform of the Organic Labor Law<sup>6</sup> took place which changed seniority and severance payments, and the concept of wage used in the calculation of those costs. Additionally, some mandated bonuses began to be considered as wages and thus to figure in the calculation of several payments and payroll taxes. Furthermore during this period, in 1999, a new indexed food bonus was established which represents about 45% of the minimum wage cost for firms with more than 50 workers. All of these changes significantly increased the labor costs associated with hiring permanent workers, and particularly for those with low levels of skills. We use a panel data set from the Venezuelan Manufacturing Sector Survey (VMSS) processed by Pineda and Rodríguez<sup>7</sup> (2005) for the 1995-2001 period<sup>8</sup>.

Following Gruber (1997) we averaged the variables on our data set for two periods: 1995-1997, and 1998-2001. We performed that procedure for both a balanced panel and an unbalanced panel of

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<sup>6</sup> The Organic Labor Law approved in 1997 is still in effect.

<sup>7</sup> This panel data set from the Venezuelan Industrial Survey is available at <http://frdriguez.web.wesleyan.edu>

<sup>8</sup> The universe of this survey is firms in the manufacturing sector with more than five workers. Notice that under the definition used by Venezuela's National Statistics Institute the informal sector consists of all workers who have a job in firms with less than five employees, or who are "self-employed" non-professional (or independent) workers. Therefore, this survey only covers manufacturing firms in the formal sector.

firms. Using those averages we estimated regressions in differences for blue collar workers, white collar workers, and all workers using firm employment as a dependent variable and average wages and other controls as independent variables. In order to avoid an endogeneity problem in our estimations, we used different labor regulation cost indexes calculated by Bermúdez (2006), which are independent of employers' choices.

The rest of the paper is organized as follows. In the next section, we explain the most important aspects of Venezuela's labor market regulations. We emphasize the changes that took place in minimum wages, seniority and severance payments, and the inclusion of mandated bonuses in place at that time within the concept of wages, starting in 1997. The third part shows some facts on Venezuela's manufacturing sector. In the fourth section we present our estimations. In the last part, we comment on our results and make some final considerations.

## **2- Labor market reforms in Venezuela during the period 1995-2001<sup>9</sup>**

The main structure of the labor regulation in Venezuela is established in the Organic Labor Law and its ruling statutes, but there have been numerous other regulations such as decrees, statutes, and Supreme Court rulings that have affected labor costs throughout time. The most important elements of labor costs affected through labor regulations during the period 1995-2001 were: minimum wages, mandated bonuses and job security costs.

### **2.1 Minimum wages and non-indexed mandated bonuses**

In Venezuela wage setting through decrees was rarely used between 1974 and 1985, but since 1985 it has been used annually. In fact, in every year between 1995-2001, with the exception of 1995, the minimum wage was increased by a government decree (see table 2.1). The minimum wage has been set at different levels for different kind of workers (apprentice, concierges, vs. the rest), and has also it has been set differently for different kinds of sectors (urban vs. rural sectors). Since 2000, it also has been differentiated by firm size so that firms that employ 1-20 workers pay a minimum wage that is lower than the one set for firms that employ 21 or more workers.

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<sup>9</sup> This section is based on Bermudez (2006) who describes in detail the principal labor market reforms from 1975 to 2005.

**Table 2.1**

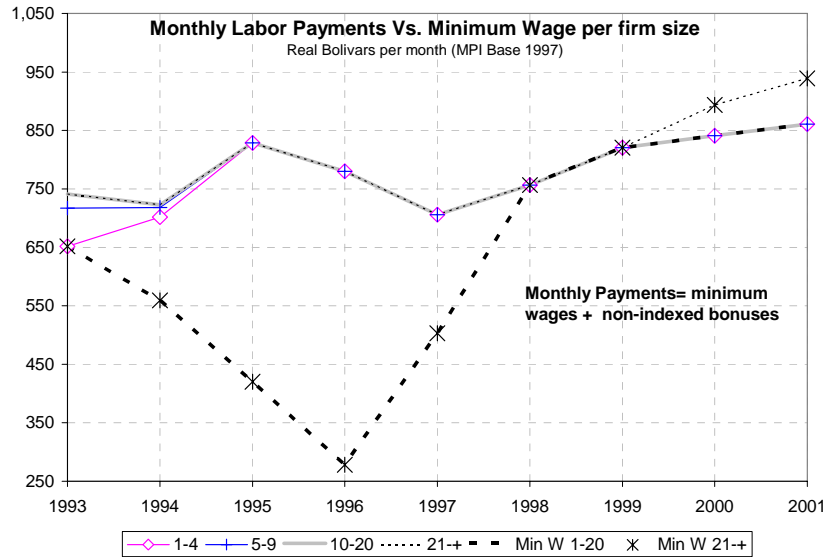
VENEZUELAN MINIMUM WAGES AND GENERALIZED WAGES INCREASES 1994-2001											
Beginning	Decreases of Monthly Minimum Wage (Bolivars per month)							Decreases of General Increase of Wages		Gazette	
Date	Urban 20-	Urban 21+	Rural 20-	Rural 20+	Apprentice	Domestic	Concierge	Urban	Rural	No.	Date
04/30/94	15,000.00	15,000.00	12,500.00	12,500.00			15,000.00	0	0	35,441	04/15/94
02/28/96	22,020.00	22,020.00	20,010.00	20,010.00				0	0	35,900	02/13/96
06/20/97	75,000.00	75,000.00	68,000.00	68,000.00				0	0	36,232	06/20/97
05/01/98	100,000.00	100,000.00	90,000.00	90,000.00	75,000.00		75,000.00	0	0	36,399	02/19/98
05/01/99	120,000.00	120,000.00	108,000.00	108,000.00	90,000.00		90,000.00	0	0	36,690	04/29/99
05/01/00	132,000.00	144,000.00	129,600.00	129,600.00	108,000.00		144,000.00	15%-10%	0	36,985	07/03/00
05/01/01	145,200.00	158,400.00	142,560.00	142,560.00	118,800.00		158,400.00	0	0	37,239	07/13/01

The labor statutes have regulated not only minimum wages but also the concept of wage. This fact is extremely important since it defines the amount to be used to calculate other labor costs such as seniority and severance payments. One of the most important structural changes in the reform of the Organic Labor Law carried out during 1997 comes from the changes in this definition. Since June of 1997 firms have had to include other bonuses (including government mandated or mutually arranged bonuses but not the child care bonus) within the concept of wage, therefore drastically impacting other non-wage labor costs.

Figure 2.1 shows the real minimum wage (using the manufacturing price index) for firms with 1-20 workers and for firms with 21 or more workers, as well as the minimum mandated monthly payment per firm size once we add the mandated non-indexed bonuses to the minimum wages for those workers earning minimum wages. Even though the change in the monthly payments between 1996 and 1998 was not very extreme that was not the case for the jump in real minimum wages during the same period given the fact that the government mandated bonuses began to form an integral part of the minimum wage<sup>10</sup>.

**Figure 2.1**

<sup>10</sup> The magnitude of the total annual mandated non-indexed bonuses as a proportion of gross annual minimum wages began to increase sharply after 1994. Those bonuses represented on average 97.24%, 180.49% and 40.29% of gross annual minimum wages for years 1995, 1996 and 1997 respectively.



In order to complement wage revenues with other types of income Venezuelan governments intensively used the policy of mandated bonuses such as transportation bonuses or food bonuses per workday, especially during periods following acute macroeconomic crises. The idea behind this policy design was to raise labor compensation without having any impact on severance payments, seniority premiums, on any other payroll taxes or costs directly related to the wages (such as vacation bonuses, workers' participation in firm's profit, etc). Since 70.6% of the total monthly income was previously excluded from the wage used to calculate other non-wage labor costs, we would expect a significant effect on employment for workers earning the minimum wage or a wage close to the minimum..

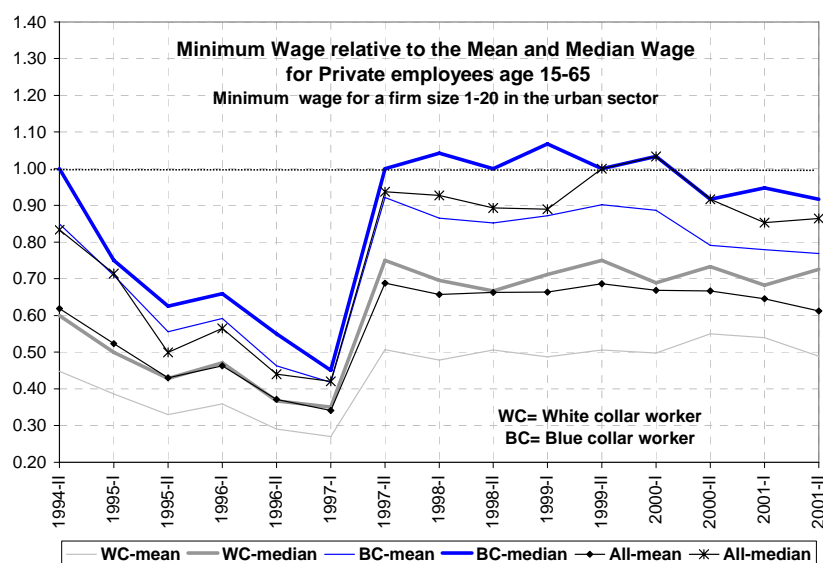
To have an idea of the potential impact of this change in regulation, it is important to note that just before the reform a worker perceiving a minimum monthly urban wage of Bs. 22,020, should have also been perceiving from the mandated bonuses an additional monthly income of Bs. 52,980 (that is Bs. 28,600 by Decree 1240, Bs. 11,000 by Decree 617 and Bs. 13,380 by Decree 1824)<sup>11</sup>, and thus the total monthly income perceived by this worker should have been Bs. 75,000 of which only 22,020 should have been used to calculate the rest of the labor cost.<sup>12</sup>

<sup>11</sup> Decree 617 established a bonus per workday due to the loss of the worker's purchase power. Decree 1240 established a bonus to cover transportation and food expenses per workday, and Decree 1824 established a new bonus to complement the other two bonuses and the monthly wage so that the minimum monthly total worker's income would have been Bs. 75,000. The World Bank (1998) reported that about 47.6 of all workers in the formal sector (28.7% of all workers in the economy) received the transportation and food bonuses, so almost the same percentage of people should have been receiving the income compensating bonus.

<sup>12</sup> When the Organic Labor Law entered into effect those bonuses began to be part of the minimum wage, so that the new minimum wage was established at Bs. 75,000. Despite the fact that the 1997 Organic Labor Law had a provisional rule

Two other important changes were introduced with the new 1997 Labor Law related to the wage concept: First, it established an explicit limitation to the percentage of monthly earnings that employers could pay to workers –for example through mutually arranged bonuses- without affecting the rest of labor costs. It also established . Second, it modified the concept of wage to be used for the specific calculation of severance and advanced notice payments in the case of dismissal for unjustified reasons<sup>13</sup>.

**Figure 2.2**



The minimum wage has had an increasing importance in Venezuela’s wage distribution. Compared to other Latin American countries Venezuela’s minimum wage is closer to its average and median wages and is thus a binding constraint for more employees.<sup>14</sup> Figure 2.2 shows the behavior of the ratio of minimum wage to the median and mean wage for white collar and blue collar employees who were full time workers in the private sector (40 hours or more per week) as reported in the National

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establishing that until a *special Law* was published -concerning the wages to calculate payroll taxes- the monthly wage of Bs. 15,000 would replace the phrase “minimum wages” in all statutes that had defined any contribution, payroll tax or penalty as a function of minimum wage, the very next day the labor law entered into effect a new “*special law*” was published setting the new minimum wage at Bs. 75,000. Thus in just 3 days – for those earning minimum wages- the wage used to calculate the rest of labor cost jumped from Bs. 22,020 to Bs. 75,000, a nominal increase equivalent to 240.59%. In addition, on 08/01/1997 a lawsuit was filled at the Supreme Court against the Labor Minister’s ruling regarding this “special Law” but it was not until 05/24/2000 that the Court ruled in favor of the plaintiff, see Bermúdez (2006) for more on this.

<sup>13</sup> We will explain more on this later when we review the changes in the job security costs.

<sup>14</sup> See Márquez and Pagés (1998), IADB (1999), Heckman and Pagés (2003), and Kristensen and Cunningham (2006). Bermudez (2006) found that the minimum wage has been more binding in the private sector than in the public sector. During 1998 the national urban minimum wage represented 89.3 percent of the median wage in the private sector whereas it only represented 66.3% of the median wage in the public sector.

Household Surveys. As we can see there is a different behavior in those ratios between 1995-97 and 1998-2001, as there is a clear difference after 1997 in the behavior of the ratios for blue and white collar workers.

Between 1997 and 2001 minimum wages in Venezuela have been increased annually, commonly using the previous year's consumer price index. However, during the same period the average manufacturer price index has been lower than the average consumer price index. Thus for the manufacturing sector the relative increase in real minimum wages has been more pronounced than for other sectors in the economy. Furthermore, some sectors within the manufacturing industry have experienced heavy competition from imported goods –such as the shoes, apparel and textile industries– given the real appreciation of the Bolivar.

Binding wage floors can have a significant influence on wage distribution and the costs faced by employers. There is a broad consensus<sup>15</sup> that employment is likely to be reduced if minimum wages are set “too high”. High wage floors could create significant employment barriers in particular for low-productivity workers, with young people being more vulnerable. Payroll taxes and social contributions paid by the employer cannot be passed on to minimum wage workers by lowering their remuneration with binding –and enforced– wage floors. However employers might be able to shift taxes paid for minimum wage workers to higher-earning workers by lowering their wages. To the extent that minimum wages could cause labor costs and worker productivity to become misaligned, then they will probably result in lower employment for the groups which initially were supposed to be benefited by the measure.

Immervoll (2007) shows that in order to alleviate the costs of employing low-productivity workers, a number of countries have implemented measures to restrain non-wage labor costs specifically for workers whose wages are at or close to the legal minimum. This has not been the case for Venezuela, where total taxes and contributions paid for minimum wage workers have been increasing sharply, particularly after 1990.

Using Venezuela's Household Survey, Freije (2003) found evidence that workers whose initial salary was below the minimum wage were more likely to become unemployed or transition out of the labor force than workers whose initial wage was above the minimum, and that workers in that sector had a higher probability of unemployment than other workers. He also reported no evidence of a marginal effect of actual minimum wage changes upon employment dynamics. That is, he found that workers in the bottom end of the wage distribution appear to have more turnover than other workers, but

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<sup>15</sup> See Bell (1997), Maloney and Nuñez (2003), Arango and Pachón (2004), World Bank (2006) for some LAC countries cases, and an extensive empirical review by Neumark and Wascher (2006).



he found no evidence that minimum wage changes increase the probability of employment change among these workers.<sup>16</sup>

## 2.2 Mandated Indexed Bonuses

Venezuela has maintained a very complex system of mandated bonuses, which have not been applied to all firms in the same magnitude or at the same time. By their nature the mandated bonuses can be classified as non-indexed and automatically indexed bonuses, the last of which can have important implications for employer's expectations about labor costs in the future. The first type includes those bonuses that establish a subsidy in terms of a nominal measure, so that if that decree was not modified the real cost of those bonuses would be quickly eroded by inflation.<sup>17</sup>

The second type of bonuses include those that by design are automatically adjusted each time a new mandatory minimum wage is set, or each time that a new tributary unit<sup>18</sup> (TU) is reset at the beginning of each year, based on the previous year's inflation. Examples of such bonuses are the per-child daycare bonus –indexed using minimum wages- established in 1992, and the worker's indexed food bonus -using TU- established in September 98, and entering into effect at the beginning of 1999.

The 1998 decree<sup>19</sup> created the obligation just for firms with 51 or more employees and the workers who were benefited by this new program were those who earned up to 2 minimum wages, losing the benefit when they earned 3 minimum wages. This new regulation should have affected a high proportion of workers since in the second semester of 1998 approximately 60% of workers in the formal sector perceived wages at or below 2 minimum wages.

The decree clearly established that the bonus should not be included for the calculation of

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<sup>16</sup> The literature analyzing the effects of minimum wages is very extensive. Neumark and Wascher (2006) did an extensive review of the literature for the US economy as well as other countries (including developing countries) since the early 1990s. They found that nearly two-thirds of 102 studies gave a relatively consistent indication of negative employment effects of minimum wages, whereas only eight gave a relatively consistent indication of positive employment effects. From the 33 studies that they viewed as providing the most credible evidence; 28 (85 percent) of them found negative employment effects. Furthermore, when researchers focused on the least-skilled groups most likely to be adversely affected by minimum wages, they found that the evidence for disemployment effects seemed especially strong. Therefore, minimum wages may harm the least skilled workers more than is suggested by the net disemployment effects estimated in many studies.

<sup>17</sup> Some examples of these types of bonuses were the Decrees 617, 1240 and 1824 which in 1997 were integrated into the minimum wage.

<sup>18</sup> A tributary unit is a measurement that was created in 1994 by the Tax Code in order to automatically adjust the income brackets used to establish the marginal tax rate, and consequently the personal and business income tax. Also, it is used in almost all current decrees to set penalties for violations of different laws. This is a mechanism to adjust each decree automatically to inflation so that the penalties do not lose their value (or incentive) power to enforce the law. It is adjusted almost automatically at the beginning of each year using the previous year inflation.

<sup>19</sup> The decree was published on 09/14/1998 but it entered into effect in January 1999.

severance payments, payroll, etc., and allowed many forms of compliance with the regulation for all firms subjected to it. The employer could choose between setting up his own restaurant, contracting the service from a third party, or providing coupons (exclusively for payments of food at restaurants and food markets), but the provision of cash directly to the worker was not allowed. The coupon was set at a minimum value of 0.25 TU /workday and a maximum value of 0.50 TU /workday. Thus it opened a window of opportunity for firms to use this bonus as an income compensation mechanism without direct implications on other labor costs -rather than through wages increases- given that the use of this bonus by the employer (even if they had fewer employees or if workers were earning higher levels of wages) was not prohibited. For example, an employer could have paid a worker an amount of 4 minimum wages as normal wages (with total impact on other labor costs) and at the same time could have paid him additionally an amount equivalent to the upper-limit of the bonus. For firms with 51 workers or more the lower-limit of the rule implied that on average the food bonus represented approximately 45% of the minimum wage, while the upper-limit implied approximately a 90% of the minimum wage.

In Venezuela other indexed bonuses were in place during the period 1995-2001 . However, the structural change in the definition of wages and the new minimum wage significantly increased the cost of labor as these bonuses were calculated as a function of wages, especially for workers earning minimum wages, or wages near minimum wages. One of these bonuses was the child care bonus. This regulation established a child care bonus per child – between birth and five years of age- whose parents earned a monthly wage that was equal or inferior to the equivalent of 5 times the national minimum wages, if and only if they worked at a company that hired more than 20 workers. The bonus per child would be the equivalent of 38% of the minimum wage. Instead of paying the child care bonus the affected firms had the option of establishing, financing and maintaining a children’s day-care center where the children benefited would be taken care of.

The other two bonuses that were affected by the definition of wages –an in particular minimum wages- were the vacation bonus and the participation in firm’s end of the year profit bonus. The vacation bonus oscillated between 7 and 22 days equivalent of daily wages depending on the worker’s tenure. The participation in the firm’s profit bonus fluctuated between 15 and 120 days of daily wages depending on the firm’s size and the fraction of the year that the employee actually worked at the firm<sup>20</sup>.

Therefore the drastic modification in minimum wages also increased these mandated bonuses that were in place in 1997, increasing the relative cost of unskilled workers, especially minimum wage

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<sup>20</sup> For more details on these bonuses see Bermúdez (2006)

workers. This distortion was aggravated with the introduction of the new 1999 indexed food bonus. On the other hand, the introduction of a new indexed food bonus together with the increase in the child care bonus increased the labor cost differences between different sized firms which might have encouraged employers to downsize –or stop increasing the payroll - even further after 1998 given that it increased the labor cost of minimum wage workers for larger firms relative to the labor cost of the same type of workers in smaller firms.

### 2.3 Payroll taxes

In Venezuela the payroll taxes are made up by contributions to INCE<sup>21</sup>, social security, unemployment insurance, and the national housing program. Table 2.2 shows the main determinants of the labor cost of each of these programs. The Social Security statute is the most important in terms of the payroll cost given that it has the highest nominal rate, which in turn depends on the risk of employment in the firm<sup>22</sup>. The tax rate shown in Table 2.2 for social security is a contribution that is used to finance social insurance for labor related accidents, maternity leave, medical care, and retirement pensions, while unemployment insurance is regulated in a separate norm. The important changes made to payroll taxes during the period 1995-2001 have to do with the nominal tax rate of the unemployment insurance and the maximum taxable wages. The interaction between the nominal tax rate and the maximum taxable wage is important since that determines the actual effective tax rate on labor for these concepts, for different levels of wage.

A provisional norm established in the Labor Law reform of 1997 regarding the wage to be used for the calculation of payroll taxes affected the maximum taxable wage, returning it to a specific monetary value instead of a changing monetary norm<sup>23</sup>. The specific monetary value was changed 4 times: to Bs. 15,000 by the 97-Labor Law, to Bs. 75,000 and Bs. 90,000 by 2 “*special laws*” in 1997 and 1999 respectively, and Bs. 15,000 again by a Supreme Tribunal decision in 2000. These changes created a divergence between the effective rate and the nominal rate which persisted until Dec-2002, when the Organic Law of the Social Security System abolished the provisional rule of the 1997 Labor Law. These changes also affected the maximum taxable wage for the national housing program and the

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<sup>21</sup> National Institute for Educative Cooperation

<sup>22</sup> The risk of employment in the firm is established depending on the degree to which the firm’s workers are exposed to dangerous labor related accidents. Thus a chemical firm would be more risky than an apparel firm.

<sup>23</sup> See footnote 12 above for an explanation.

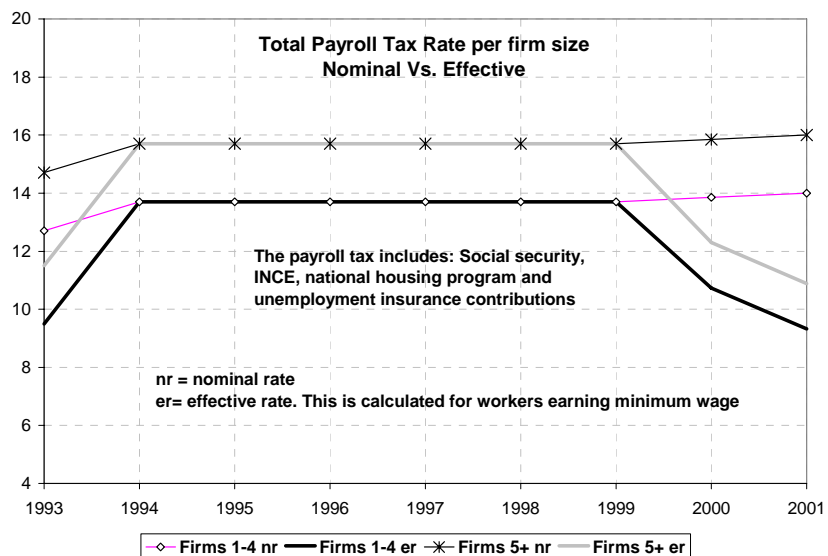
unemployment insurance system.

**Table 2.2**

Payroll Tax Policy 1995-2001	From	Employer (%) rate			Employee (%) rate	Maximum taxable Monthly wage
		Min. risk	Medium risk	Max. Risk		
<b>Social Security</b>	07/01/93	9	10	11	4	5 minimum urban wages
All employers	06/21/97	9	10	11	4	5 * 75000 Bs
	05/01/99	9	10	11	4	5 * 90000 Bs
By TSJ decision on 04/27/2000	04/28/00	9	10	11	4	5 * 15000 Bs
<b>INCE</b>						none
Firms with 5 or more employees	01/08/70	2	2	2	0.5% of annual participation of profits	none
<b>National Housing Program</b>	03/15/94	2	2	2	1	15 minimum wages
All employers	06/21/97	2	2	2	1	15 * 75000 Bs
	11/05/98	2	2	2	1	none
<b>Unemployment insurance</b>	07/01/93	1.70	1.70	1.70	0.50	5 minimum urban wages
All employers	06/21/97	1.70	1.70	1.70	0.50	5 * 75000 Bs
	04/19/99	1.70	1.70	1.70	0.50	20 * 75000 Bs
	05/01/99	1.70	1.70	1.70	0.50	20 * 90000 Bs
	10/22/99	1.70	1.70	1.70	0.50	5 * 90000 Bs
By TSJ decision on 04/27/2000	04/28/00	1.70	1.70	1.70	0.50	5 * 15000 Bs
	07/01/00	2.00	2.00	2.00	0.50	20 * 15000 Bs

The behavior of the total payroll tax to be paid by employers for workers earning minimum wages in a medium risk establishment -by firm size- is presented in Figure 2.3. As can be seen, during most of the period 1995-2001 the total nominal payroll tax was relatively stable and equal to the total effective rate, except during 2000 and 2001 when the Supreme Tribunal decided in favor of the plaintiff, and reverted to the “5 times Bs. 15,000” rule (nominal) which was clearly low compared to the existent minimum urban wages during those years - Bs. 132,000 and Bs. 145,000 respectively.

**Figure No. 2.3**



## 2.4 Job security costs: advance employment cessation notice, seniority and indemnity payments

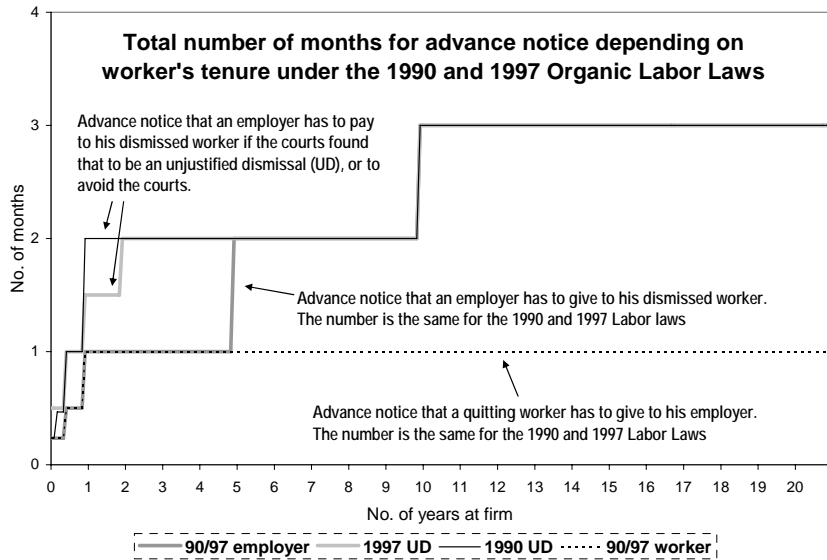
The other important reform carried out through the modification of the Organic Labor Law in 1997 has to do with job security costs. Venezuelan labor laws include 3 different employer costs in order to terminate a labor relationship: the advance notice period, the seniority fee, and an indemnity fee<sup>24</sup>. In general, the party wanting to end the labor relationship has to give the other party an advance notice period, which depends on worker's tenure -and if it is not given- the party that ends the relationship has to pay the other party an amount equal to the foregone wages during the advance notice period. The advance notice has been asymmetrical between workers and employers. Figure 2.4 show the advance notice periods as a function of tenure that: 1) a worker who quits for unjustified reasons<sup>25</sup> has to give his employer; 2) an employer has to give the worker in the case of firing for economic, technological or unjustified reasons<sup>26</sup>; and 3) an employer has to give to the worker in the case the firing is found by a

<sup>24</sup> The 1990 and 1997 Laws established that in the **unjustified** firing case the employer had to pay additional advanced notice –only for tenure levels lower than 5 years. Both laws established an indemnity to be paid in the case of an unjustified firing. Thus in order to apply the usual definition of severance payment and to compare the 1990 and 1997 laws we added the difference between the employer's advanced notice for unjustified firing and the normal employer's advance notice to the indemnity payments established in the laws to an "additional indemnity or traditional severance payment".

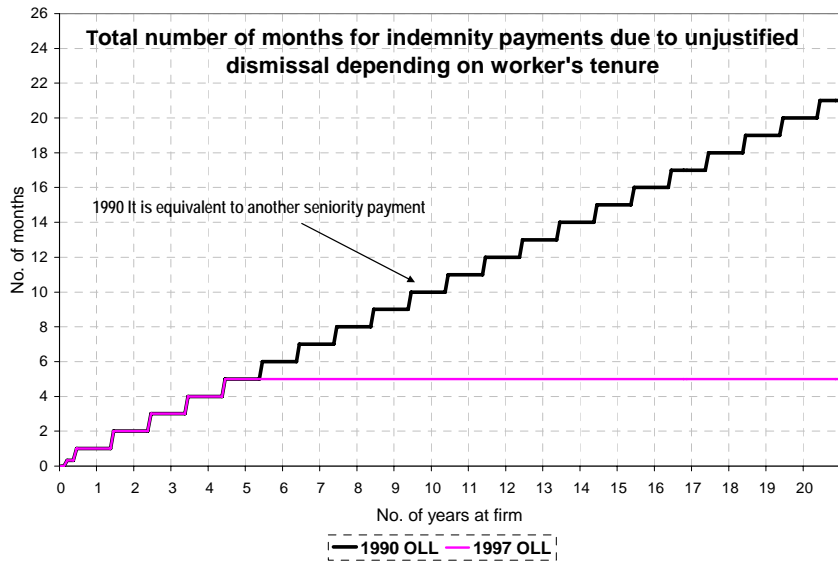
<sup>25</sup> To pursue a better job, for example. If the worker quits for justified reasons – for example sexual harassment- the worker can leave immediately and the employer would have to pay the advanced notice and indemnity for the case of an unjustified dismissal.

<sup>26</sup> The Labor Law in Venezuela has not included economic and technological reasons within the list of justifiable reasons to dismiss a worker, so it is at the Court's discretion to qualify the firing.

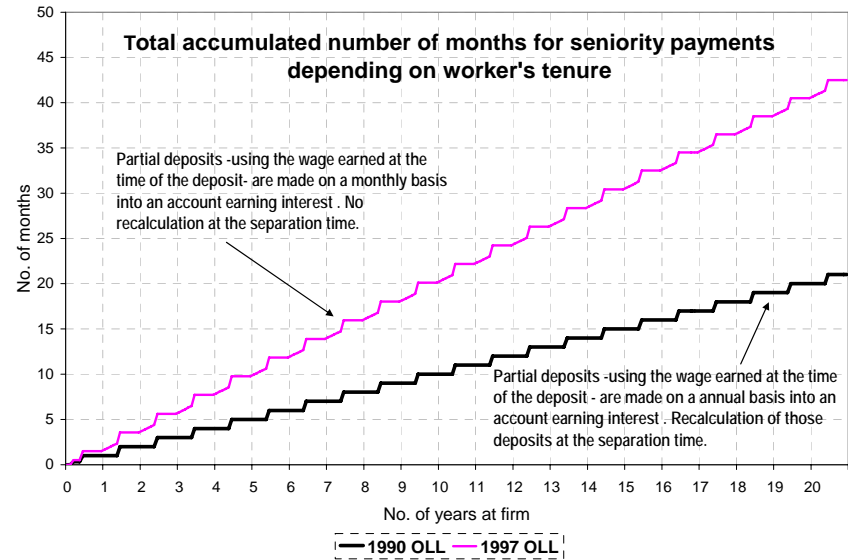
**Figure No. 2.4**



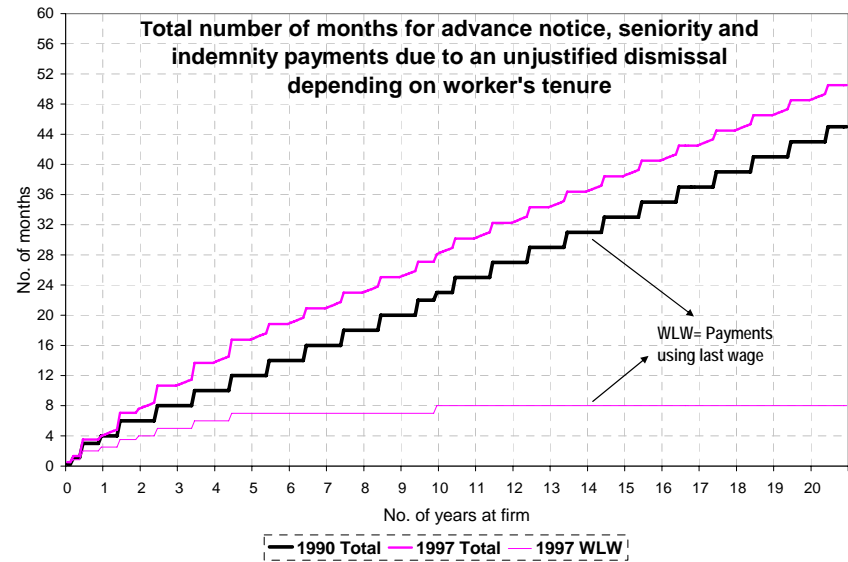
**Figure No. 2.6**



**Figure No. 2.5**



**Figure No. 2.7**



Court to be unjustifiable, or just paid by the employer to avoid going to court<sup>27</sup>.

The 1997 Labor Law significantly increased the number of months to be paid for total seniority, which has to be paid no matter the grounds for ending the labor relationship. Figure 2.5 shows the total number of monthly wages that a worker should have accumulated by the end of the labor relationship - depending on tenure. The seniority partial deposits have to be accumulated into an individual account earning an interest rate that was regulated by the Central Bank. Whereas the 1990 law established that partial deposits were to be made on an annual basis, the 1997 Law established it on a monthly basis.

If the dismissal is unjustified, or a Court qualifies it as unjustified or if the employer dismisses a worker and wants to avoid a Court procedure the employer has to pay an indemnity fee. The number of months to be paid for the concept of “indemnity” was kept the same up to 5 years of tenure, but it decreased sharply for higher level of tenure under the 1997 Law (see Figure 2.6). Figure 2.7 shows the total number of months to be paid under unjustified dismissal, and as we can see the 1997 law increased the number of months to be paid compared with the previous regulation in place. However, this simple comparative analysis is not completely satisfactory because while the total 1990 amount had to be paid using the last wage earned by the worker, under the 1997 Law only a portion of it had to use the last wage.

Under the 1990 Labor Law the wage used to calculate the total payments for seniority and the indemnity was the wage in place one month previous to the date in which the labor relationship ended. If the employer had made the partial annual deposits at the time of separation he had to recalculate the principal again and pay the difference. This ruling made the cost associated with the seniority and indemnity payments very volatile, unpredictable and uncontrollable for the employer, especially in times of high inflation, such as 1996. The main objective pursued by the Labor reform of 1997 was to change the timing of the wage to be used in the calculations, reducing the unpredictability of those payments in

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<sup>27</sup> When deciding to dismiss a worker -depending on the legal actions taken by the employee and the courts decisions- the employer knows ex-ante that he could face the following 4 cases depending on what he chooses to do:

- a) Pay the worker just the normal advance notice and the seniority payments, and the worker does not sue the employer;
- b) Pay the worker just the normal advance notice and the seniority payments, and the worker sues the employer but the courts decide that it was a “justified reason” in which case the employer does not have to pay anything else;
- c) Pay the worker just the normal advance notice and the seniority payments, and the worker sues the employer but the courts decide that it was an “unjustified reason”, in which case the employer would have to pay the forgone wages -from the firing up to the court decision- and reinstate the worker in his job, or pay the forgone wages, the indemnity for unjustified firing and the difference between the advance notice under unjustified reason and the advanced notice that the employer already paid; or
- d) Pay the worker the advance notice under unjustified reason, the seniority payments, and the indemnity payment, in which case the employer avoids the court procedure and the possibility of paying forgone wages, no matter the reason for dismissing the worker.

the future.

On the other hand, the new labor law modified the concept of wages to be used in the calculation of each of the elements of the job security cost (see Table 2.3). Thus the simple comparison of monthly wages in Figure 2.7 is misleading because we also have to take into account the wage used for the calculations, the timing of that wage, and the periodicity of the deposits, which in turn affects interest payments (see Table 2.3). As we can see there have been some regulatory changes in these aspects as well that make the direct comparison between the different Laws more difficult. Additionally, the fact that job security payments also take into consideration the participation in the firm's profits creates a difference in the job security payments as regards different firm sizes, even if the monthly wages were the same among them.

**Table 2.3**

<b>Cost of Job Security</b>										
Year of a regulatory change	Total number of monthly wages to pay					Wage used for the calculation	Interest	Concept of wage used for calculation		
	1 year	3 years	5 years	10 years	20 years					
<b>Employer's advance notice (this is only for the firing case)</b>										
1991	1.00	1.00	2.00	3.00	3.00	Month before ending labor relationship		Normal monthly wage		
1997	1.00	1.00	2.00	3.00	3.00	Month before ending labor relationship		Normal monthly wage plus monthly proportion of participation in firms profit plus monthly proportion of vacation bonus		
<b>Seniority payments (for both quitting and firing)</b>										
1991	1.00	3.00	5.00	10.00	20.00	Annual partial deposits with the wage at the time of the deposit, but at the dismissal time recalculate those deposits using wage of one month before ending labor relationship. Do not recalculate interest.	yes	Normal monthly wage plus monthly proportion of participation in firms profit		
1997	1.50	5.63	9.77	20.10	40.50	Monthly partial deposits with the wage at the time of the deposit. No recalculation at the end of the relationship.	yes	Normal monthly wage plus monthly proportion of participation in firms profit		
<b>Additional Indemnity payments (only for the firing under unjustified reason case(*))</b>										
1991	2.00	4.00	5.00	10.00	20.00	Month before ending labor relationship		Normal monthly wage plus monthly proportion of participation in firms profit		
1997	1.50	4.00	5.00	5.00	5.00	Month before ending labor relationship		Normal monthly wage plus monthly proportion of participation in firms profit plus monthly proportion of vacation bonus		
<b>Total number of months for Job-security payments for the firing under unjustified reason case</b>										
1991	4.00	8.00	12.00	23.00	43.00	(*) Includes the indemnity payment plus the difference between the employer's advance notice under unjustified dismissal minus the normal employer's advance notice				
1997	4.00	10.63	16.77	28.10	48.50					

In order to compare the job security costs derived from each Law our approach is to calculate the equivalent monetary value of each one for different tenure levels using a specific time series of wages,



following Bermúdez (2006). We took the monthly series of minimum wage and the mandated interest rate for seniority payments for the period 1975-2005 and calculated what would have been the job-security cost –for 2 cases, unjustified quitting and unjustified dismissing- if each of the regulations had been kept during the whole period 1975-2005. We are able to calculate for example how much an employer would have had to pay a quitting worker –or a dismissed one- during the whole period 1975-2005 if the 1990 Law (or the 1997 Law) had been in place during the whole period, assuming that each month the worker was hired on a permanent basis and then quit (or was fired) T years later<sup>28</sup>.

Figure A.1 in the appendix shows the behavior of the job security payments as a proportion of the **last wage** and the real job security payments (for T =1, 3, 5 and 10 years of tenure<sup>29</sup>) for both cases: an employee who quits and employee who is dismissed -both for an unjustified reason- for a firm with 51-100 employees. Figure A.1.a shows that while under the 1990 Law an employer had to pay the equivalent of 1.25 months using the **last wage** to a quitting employee with one year of tenure in 1995, under the 1997-Law he would have had to pay the equivalent of 2 months' wages. As we can see the job security cost for a quitting worker on average increased drastically with the 1997 Law compared to the 1990 Law, but the comparison of the job security cost for the case of unjustified dismissal under both laws would depend on the year of evaluation and the worker's tenure. On average the 1997 law implied that the job security cost increased for workers with less than 5 years of tenure, whereas for a higher level of tenure the 1997 Law tended to decrease the job security cost. For example in Figure A.1.g in the appendix the job security costs of the 1997 Law shifted down with respect to the 1990 Law.

So in general, when compared the 1990 Law with the 1997 Law increased job security costs for workers with up to 5 years of tenure, but reduced them only partially for those workers with tenure levels above 5 years. Figure A.2 shows the estimated job security costs for both cases –unjustified dismissing and quitting- for a firm with 51-100 employees but taking the valid period under which each law was under effect. Given that: 1) the median tenure for private workers oscillated between 1 and 2 years of tenure, 2) approximately 47% of private employees had tenure less than or equal to 1 year between 1994 and 1998 (see Table A.1 in the appendix) and 3) that there is a high correlation between the **real** job

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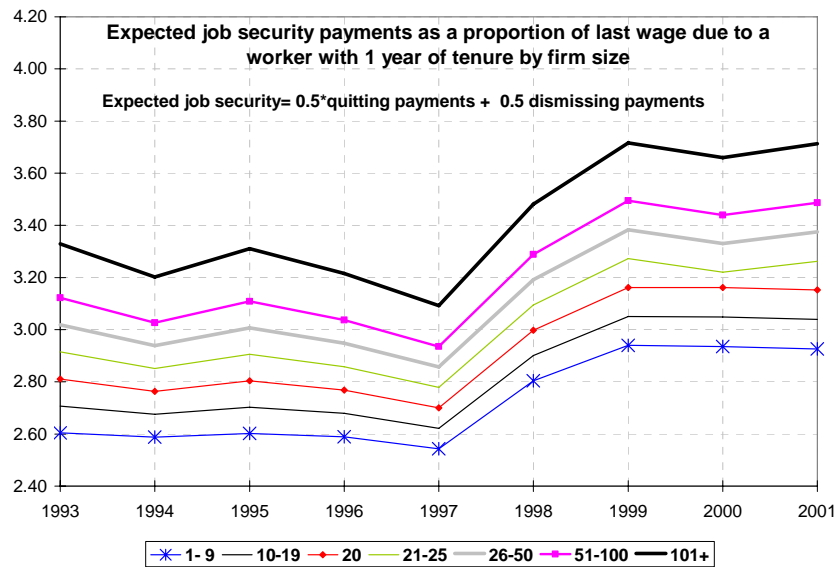
<sup>28</sup> For example, if a permanent employee was hired on 01/01/99, and on 12/15/99 he quit and gave advance notice to the employer working exactly up to 01/01/00 he would only receive seniority payments plus the interest on them on that date. In the case of unjustified firing we are assuming that on 01/01/00 the employer dismissed the worker and simultaneously paid him the advance notice for unjustified firing, the seniority payments and interests, and the indemnity payment. In both cases the employee would have worked exactly one year. The amounts paid on 01/01/00 will be presented in real terms, and also expressed as a ratio of the **last wage** earned by the worker on 12/01/99. This would be the one year tenure case paid on 01/01/00; doing this for each month of 2000 and averaging them we get the value for year 2000.

<sup>29</sup> We have assumed that worker's wage is only a function of the minimum wage and tenure. See Bermúdez (2006)

security costs for different levels of tenure –see Figures A.2.a through A.2.d in the appendix- we will use the one year tenure level worker as the representative worker for empirical purposes.

As we argued before, participation in the firm’s profits increases with firm size and therefore job security costs also increase with firm size as a result of the wage concept used for its calculation.(see Table 2.3 above)<sup>30</sup>. Thus the lines in Figures A.1 and A.2 in the appendix will shift up (or down) as firm size increases (or decreases). We estimated the job security costs for both cases –unjustified dismissal and quitting- for different firm sizes. Figure 2.8 shows the expected job security costs assuming that both cases have equal probability of 0.5.

**Figure No. 2.8**



The indicator of job security cost shows that the increase in the expected job security costs due to the 1997 Labor Law reform was dramatic. The reform made it more difficult for firms in general to adjust to labor demand as this reform tended to increase job security costs –in particular for low levels of tenure- but it has specially hindered labor demand adjustments for big firms. By avoiding worker movements from less to more productive units, this microeconomic inflexibility reduces aggregate output and slows down economic growth. Caballero et al. (2004-a) measured the microeconomic flexibility for the manufacturing sector by the speed at which establishments reduce the gap between their labor

<sup>30</sup> Unions also can increase the average wages for big firms relative to the average wages of smaller firms through collective agreements.

productivity and the marginal cost of such labor. The longer the persistency of the gap through time the more inflexible the economy was at the microeconomic level. They found that Venezuela was the most inflexible among 5 LAC economies, having slightly over 53.9 percent of adjustment within a year<sup>31</sup>. They also found that, with the exception of Venezuela, in the economies analyzed, large establishments (above the 75th percentile of workers) were substantially more flexible than small establishments (below the median number of workers)<sup>32</sup>. Caballero et al. (2004-b) found that labor market regulations<sup>33</sup>, and particularly job-security regulations, are among the institutional factors that reduce microeconomic flexibility by increasing adjustment costs. Job security regulations increase the costs of dismissals when firms experience negative shocks and, as a consequence, these regulations reduce the rate of firings during those periods. However, during good times given the difficulties of adjusting labor demand the optimal employment response to a positive shock is also being reduced, thus the overall effect is a reduction in the speed of adjustment to shocks.

## **2.5 Quantifying the effects of labor reforms on minimum mandated labor cost**

As we discussed previously, in Venezuela minimum wages are binding and private workers have been characterized by having low tenure levels given that during the period 1995-1998 the median tenure oscillated between 1 and 2 years. Thus we will use the urban<sup>34</sup> worker with 1 year of tenure as a representative worker for the manufacturing sector, assuming also that this worker earns a minimum wage. The indicator of expected minimum mandated labor cost takes into account all aspects of the labor costs that we have discussed up to the present. From the analysis of the labor regulations we found that the statutes have created different costs for different firm sizes, and have also differentiated the cost of

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<sup>31</sup> The authors found that even though Chile, Colombia and Brazil were more inflexible than the US these countries exhibited a relatively high degree of microeconomic flexibility with 72.4, 72.2 and 70.1 percent respectively of labor adjustment taking place within a year, compared to the 90 percent for the US, whereas Mexico ranked lower with about 58.1 percent of adjustment within a year.

<sup>32</sup> In Brazil, small establishments closed about 67 percent of their gap within a year, while large establishments closed about 80.8 percent; in Colombia, 67.5 and 79, respectively; in Chile 68.5 and 78.3; in Mexico 56.1 and 60.7; whereas in Venezuela the indicator was 52.9 percent for both sizes.

<sup>33</sup> Using a sample of 60 countries for the period 1980-1998 they took the indices of labor regulation created by Botero et al. (2003) and Heckman and Pagés (2000) together with different proxies for law-enforcement, and through a dynamic labor demand specification estimated the effects of job security regulations. They consistently found a relatively lower speed of employment adjustment in countries with extensive legal protection against dismissal, particularly when job protection was likely to be enforced. In countries with a strong rule of law they found that moving from the 20th to the 80th percentile of job security reduced the speed of adjustment to shocks by 35 percent and diminished annual productivity growth by 0.86 percent.

<sup>34</sup> The urban minimum wage is the relevant wage to be applied in the manufacturing sector. We assume that this employee work only during the day shift without overtime.

employees depending on the number of children 0-5 years old that each worker has. Therefore, taking into account all of these differences, we generated the monetary indicator of labor regulations in Venezuela. The total annual cost of a worker with one year of tenure will be calculated as:

***Total Annual Expected cost** = Gross annual minimum wages + mandated non-indexed bonuses + payroll taxes + participation in firm's profit bonus + vacation leave + vacation bonus + 0.5 total unjustified dismissal cost + 0.5 quitting cost and depending on firm size [child care bonus + indexed food bonus]*

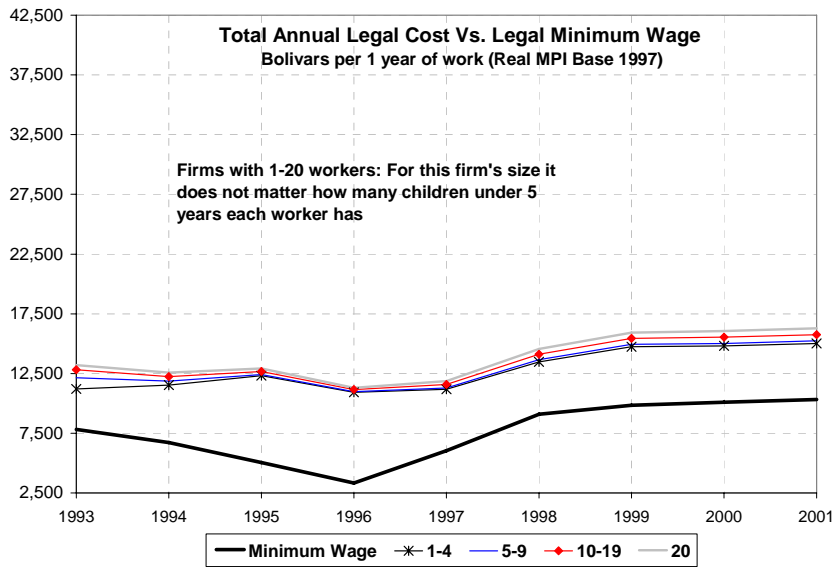
Figure 2.9 shows the time series of the real expected cost per one year of service of an employee earning minimum wage, depending on firm size and the number of children under 5 years old that the employee has. The real values are presented using the average manufacturing price index (base 1997), however for econometric purposes those values will vary for different sub-sectors within the manufacturing industry as well as by using each sub-sector price index.

As we can see there is a clear structural change in the total expected annual cost of a minimum wage worker in 1997 for all firm sizes. During the period 1998-2001 the total real cost of a minimum wage worker increased drastically when compared with the amounts paid during the period 1993-1996, especially for firms with more than 21 employees.

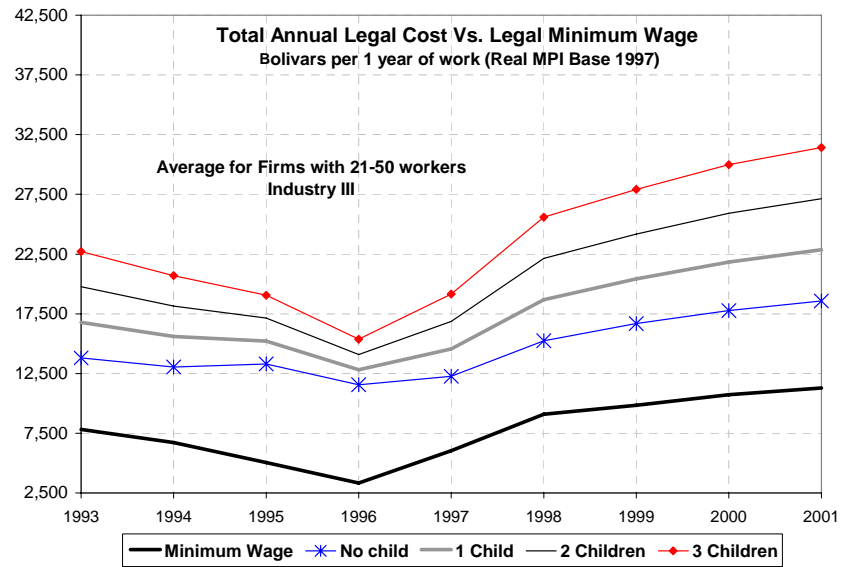
Even if we assume for now that none of the workers have children 0-5 years old, the differences in the cost structure between different firm sizes is so dramatic that it is possible that these differences are encouraging firm downsizing, the exiting of big firms and the entry of new firms at sub-optimal scales, or at scales of production that do not allow Venezuelan firms to compete internationally and nationally with foreign competitors. On the other hand, when we compare the annual cost of hiring a worker with children 0-5 years old it is clear that the cost to the employer is proportional to the worker's family load, so it is very possible that the child care bonus policy is creating another distortion by which employers will be discouraged to hire workers in childbearing age, workers with a big family load, or workers who potentially can become beneficiaries of this policy because they earn under 5 minimum wages.

Figure No. 2.9

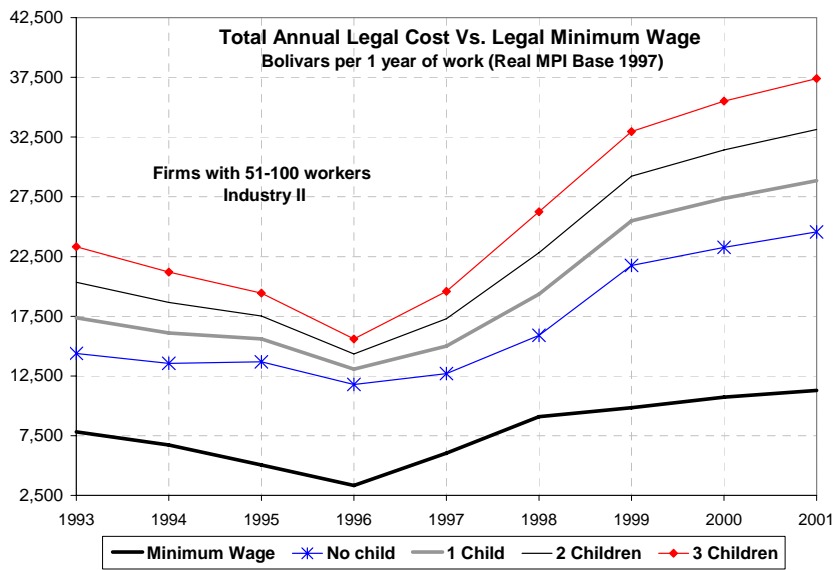
(a)



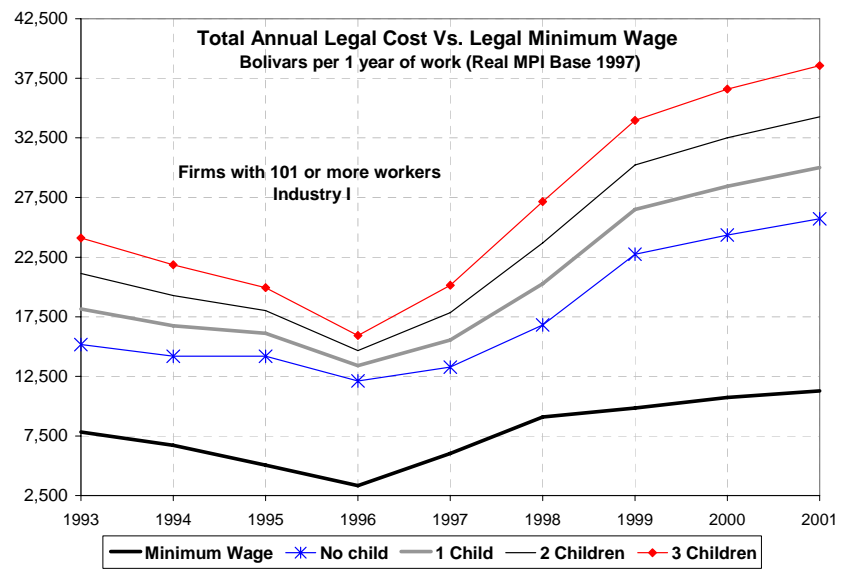
(b)



(c)



(d)



### 3. Venezuela's manufacturing sector: some facts.

In the last 30 years, the Venezuelan labor market has been characterized by a decrease in real wages, an increase in unemployment, and a relative reduction of the formal sector. Consistent with the fall in per capita GDP and productivity reported by Hausmann and Rodríguez (2006) and Bello and Restuccia (2002), the real average wage has been declining sharply since 1980. In 2003 the real average wage measured in 1997 prices was Bs. 865 whereas in 1980 the average real wage was Bs. 3,499<sup>35</sup>. Through time minimum wages have become more of a binding constraint since the gaps between the average wage and the median wage with respect to the minimum wage level have become smaller. A larger portion of Venezuelan workers are thus earning wages at or below minimum wages. Despite the drop in real wages there has been an increasing trend in unemployment since 1980. Another sign of the deterioration in the labor market is given by the sharp decrease in the formality rate since 1993.

Outcomes of the manufacturing sector have not been the exception, as is shown by the Venezuelan Manufacturing Sector Survey (VMSS)<sup>36</sup>. The observational unit of this survey is the establishment in the manufacturing sector with more than five workers and thus does not include the manufacturing firms in the informal sector. Establishments are classified in four categories depending on the number of workers they are hiring, see Table 3.1. The VMSS interviewed all establishments that belong to MI strata and LI strata. For the remaining groups the VMSS construct a representative sample.

**Table 3.1**

<b>GROUP</b>	<b>NUMBER OF WORKERS</b>
Group I: Large Industry (LI)	More than 100
Group II: Medium Industry (MI)	51 to 100
Group III: Small Industry (SI)	21 to 50
Group IV: Very Small Industry (VSI)	5 to 20

Source: INE

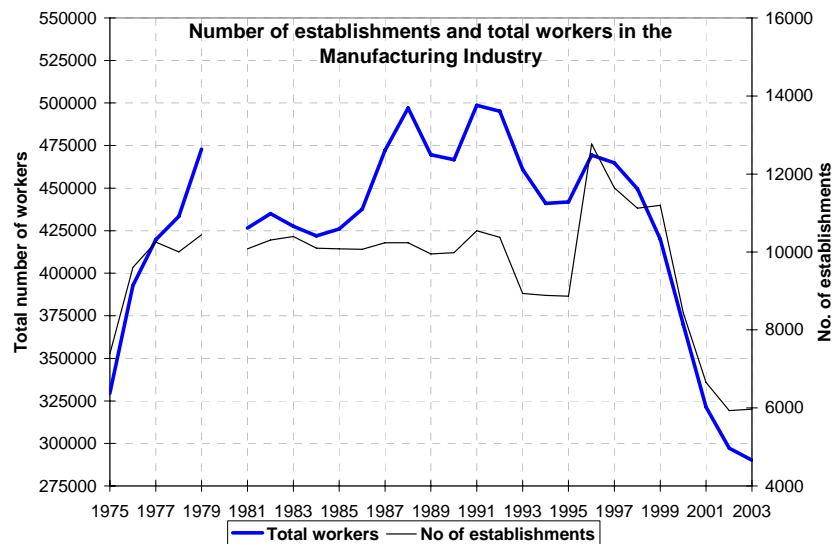
The aggregate data of the VMSS shows that between 1991 and 2003 employment has been declining sharply (see Figure 3.1). Employment in the manufacturing sector in 2003 was 58.18% of peak for this period. A reduction of employees took place in each of the different categories when we compare the extreme points of the period under analysis (see Figure 3.2). For the LI group maximum employment

<sup>35</sup> Nominal wages deflated using consumer price index base 1997.

<sup>36</sup> The VMSS is conducted by Venezuela's National Statistics Institute. Before 1975, four VMSS took place in the following dates: 1961, 1966, 1971 and 1974. Note that there was no VMSS in 1980

was attained in 1988. In 2003 the number of workers in this category represented 57.18% of this period's maximum employment. For the MI group employment grew until 1979, and the 2003 employment represented 61.49% of the 1979 level. For the SI the maximum employment was achieved in 1991, and by 2003 it represented only 55.42% of that level. It is important to note that the group that experienced an abrupt increase in the employment level was the VSI in the year 1996<sup>37</sup>, however this group has also experienced a persistent decline in employment after that year, so that employment during 2003 was only 39.12% of that achieved during 1996.

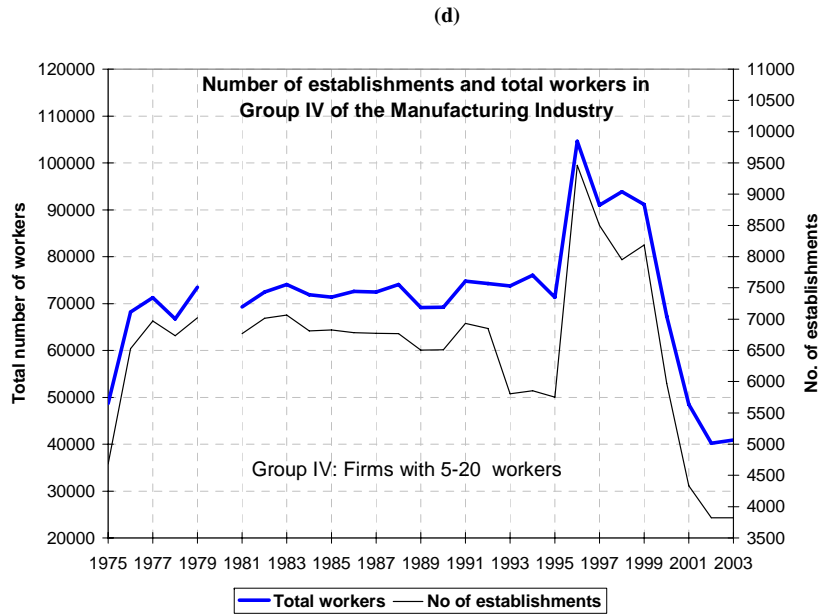
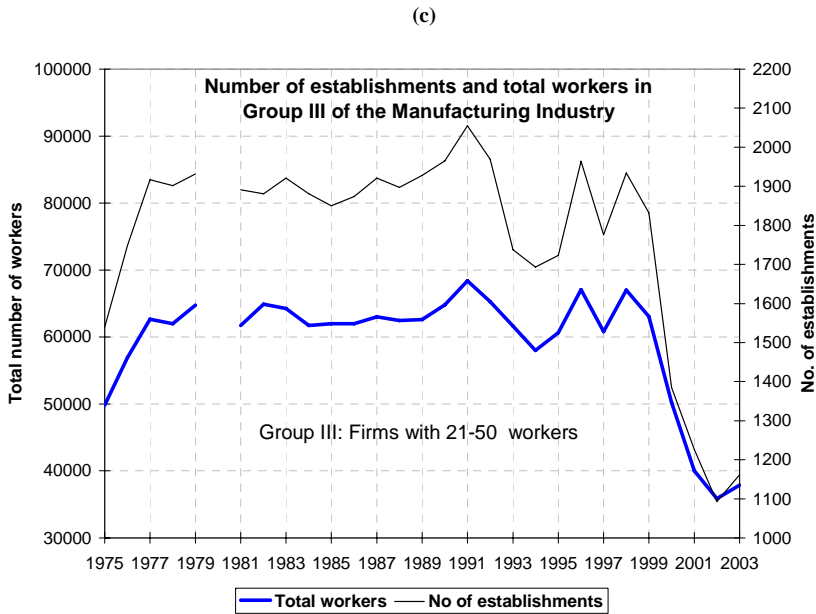
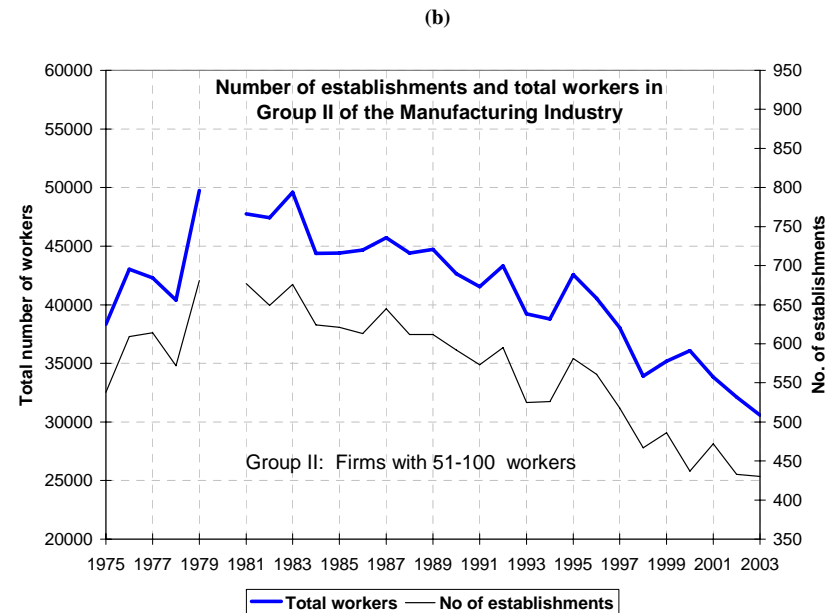
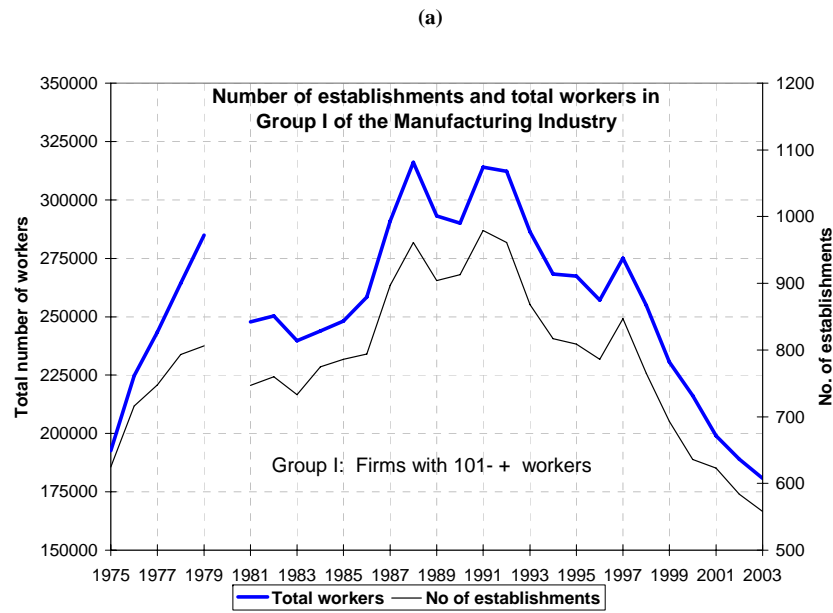
**Figure No. 3.1**



Figures 3.1 and 3.2 also exhibit the evolution in the number of plants by group from 1975 to 2003. Similar to employment at the end of the period the number of plants was smaller than at the beginning. This is the rule for each group. In the case of the LI, the number of plants grew until 1991, when it registered its period maximum (979). The 2003 number of plants of this group was 57% of the maximum (63.14% for the MI). Notice that the group that concentrated the most firms is the VSI. On average, during the 1975-2003 period 67.36% of the firms belonged to that sector. However on average the VSI produced 6.3% of total manufacturing production. Therefore, production per firm is very low in this sector. On the other hand LI accounts for 79.78% of manufacturing production.

<sup>37</sup> This behavior might be explained by the downsizing and division of incumbent firms rather than new entry in the manufacturing sector given that the differentials in labor costs between firm sizes began to grow in 1991. It takes time for firms to reduce employment levels or to reorganize.

Figure No. 3.2

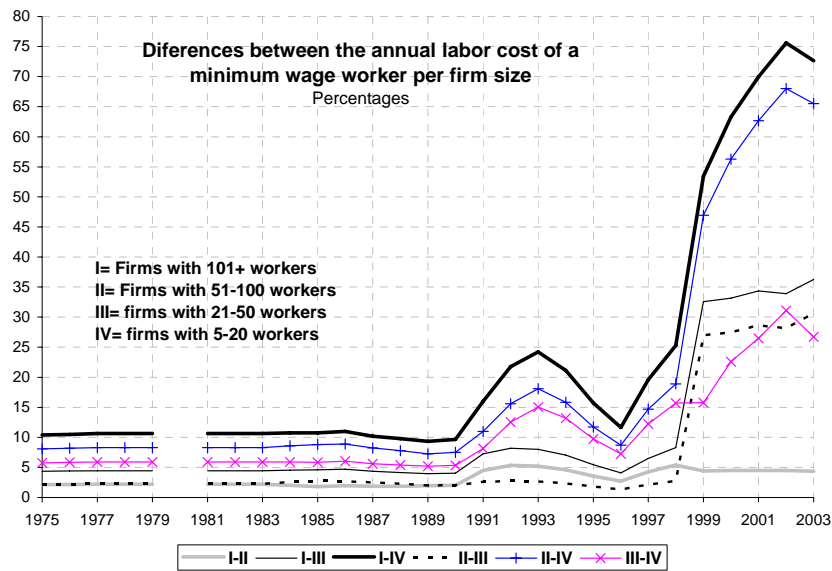




The net exit of establishments in the LI, MI and SI groups has not been compensated for by greater entry into the VSI, thus resulting in net job destruction<sup>38</sup> (see Figure 3.1). Whereas in 1991 there were 10,539 establishments operating in the formal manufacturing sector, generating 498,712 jobs, in 2003 the number of establishments was 5,970 and generated only 290,171 jobs. Thus 4,569 establishments exited the market destroying 208,541 jobs.

A potential and partial explanation for the entry-exit behavior of firms within different group sizes might lie in the distortions created by the disparities in the labor cost structures between different groups<sup>39</sup>. This could be illustrated by calculating the differences in the **minimum-mandated total labor cost** for a year of service of a minimum wage worker for different combinations of group sizes(see figure 3.3). Thus, for example in 2001 a firm in the LI (Group I) had to pay 70% more for a year of service of this type of worker than a firm in the VSI (Group IV). As we can see, the minimum mandated labor costs differences between group sizes became more pronounced after 1990 and skyrocketed after 1998.

**Figure No. 3.3**



As a percentage of employment in the formal sector, employment in the manufacturing sector (reported

<sup>38</sup> From the VMSS aggregate data during the 1975-2003 period the average number of workers per establishment for a firm with more than 101 employees was 326 workers, 73 for firms with 51-100 workers, 33 for firms with 21-50, and for a firm with 5-20 employees it was 11 workers.

<sup>39</sup> We can calculate those disparities by knowing: 1) the average number of workers per establishment per group size during that period; 2) the minimum-mandated-total annual labor cost per firm size for a worker that earns the minimum wage; 3) assuming that all workers have a probability of 0.25% of having one child age 0-5.

by the VMSS) decreased in importance between 1975 and 2002. In 1975 it represented 15.24% of total formal employment, by 2003 that figure had fallen to 6.27%. Between 1995 and 2001 the reduction in employment was very similar to the decrease experienced by the number of plants for all groups. When we compare employment and number of plants averages between the 1995-1997 period and the 1998-2001 period, for the LI group the reduction in employment was 18.2% while plant reduction was 18.9%, for the MI group those figures were 15.3% and 17%, for SI group they were 18.5% and 18%, and for the VSI they were 23.3% and 23.4%. This finding is similar to that of Bartelsman et al. (2004). Using another methodology, they found that the net employment decrease in the 1995-2000 period in Venezuela's manufacturing sector was mostly due to plant shut downs (in their estimates, 66% of the gross job losses were explained by firms exiting the market).

#### 4. Estimations.

We use a panel data from the VMSS processed by Pineda and Rodríguez (2006) for the period 1995-2001. From this data set we gathered information on employment, ( $E_{it}$ ), production ( $Y_{it}$ ), total labor cost ( $TLC_{it}$ ) and its components: wage and salary, ( $W_{it}$ ), other payments, ( $OP_{it}$ ), and complementary costs, ( $CC_{it}$ ). Other payments include earnings for working overtime, profit sharing, special bonuses, provision for severance payments caused during the year, and other compensations. Complementary costs include INCE payments, employer contribution to workers' Social Security and to workers' retirement funds. As we mentioned before, the VMSS has information at firm level, but it does not have any information at individual level. It does, however, contain information for the blue-collar worker group and the white collar worker group. An important feature of this data set is that it has information on the producer price index by sector at a three digit level of aggregation<sup>40</sup>. We use it to express labor costs and production in real terms to construct an additional control for the level of activity of the firm.

In addition, we use 5 variables as indicators of changes in labor regulations: 1) minimum wages, 2) seniority payments (quitting cost), 3) total unjustified dismissal cost (which includes seniority payments, advance notice and indemnity payments for unjustified dismissal) 4) other costs, and 5) the total annual expected cost derived in section 2.5<sup>41</sup>

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<sup>40</sup> This information comes from the Central Bank's Producer Price Index and was incorporated into the Industrial Survey Database by Pineda and Rodríguez (2006).

<sup>41</sup> **Other cost** = mandated non-indexed bonuses + payroll taxes + participation in firm's profit bonus + vacation leave + vacation bonus and depending on firm size [child care bonus + indexed food bonus]  
**Total Annual Expected cost** = Gross annual minimum wages + mandated non-indexed bonuses + payroll taxes +

Those real annual cost (expressed as indexes) were calculated on the assumption that a worker is earning the minimum wage. They reflect exogenous changes to firms' labor cost which are based on changes in the labor regulatory framework, so they are correlated with labor costs but they are not correlated with the error term. Those indexes were calculated depending on the classification based on firm size from the VMMS. Therefore they have three dimensions of variation: time, firm's size, and the industrial activity of the firm.

As we discussed before, in 1997 two important changes in labor regulations took place: a) the mandated bonuses became part of wages, and b) the modification on the legislation related to the severance and seniority payments. Notice that the former is the base for payments in b), and for payroll taxes. Therefore a) and b) were two different sources of variation for severance and seniority payments. Notice that 1998 was the first full year those changes took place. We would like to estimate the effects of those changes on employment. In order to do that, we implemented the following empirical strategy. We averaged each variable over the period 1995-1997 and the 1998-2001 period<sup>42</sup>. We ended up with two time observations for each firm in our panel. We used two panels to average the data, a balanced panel and an unbalanced panel. In the first one, we only included firms that were surveyed in each of the seven year periods. This panel had 670 firms. In the other one, we used an unbalanced panel –of 2578 firms– including those with at least one observation for each of the different periods: 1995-97, and 1998-2001. We took the averages using only the years in which the firms are surveyed. Taking averages in this way has a potential advantage; it could help to reduce errors in variables (Wooldridge, 2000), and it allows us to avoid the problem of not having data for some years for some firms since for some portion of the firms in our panel there is no information for at least one year. After that, we take first differences of the variables in our data set.

As was mentioned before, the VMSS is a census for the LI strata and the MI strata. For the remaining groups, random sampling techniques are used. So for the SI and VSI groups a firm might not be surveyed because it is no longer operating<sup>43</sup> or because it was not sampled. In the balanced panel, as we expected, firms from the LI and MI groups are overrepresented. In fact, 93.7% of the firms in the

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*participation in firm's profit bonus + vacation leave + vacation bonus + 0.5 total unjustified dismissal cost + 0.5 quitting cost and depending on firm size [child care bonus + indexed food bonus]*

<sup>42</sup> Notice that the second window is longer than the first window. In order to get same size windows, we re-estimated our models using a 1995-1997 window and a 1998-2000 window instead of a 1998-2001 window. In terms of sign and significance there were no changes in our results.

<sup>43</sup> We are not taking into account firms that exit the market in 1998 because we do not have any information for them between 1998 and 2001.

balanced panel belong to those strata<sup>44</sup>. We conducted our first set of estimations using a balanced panel.

The technique we used to process the data is similar to Gruber (1997), who estimated the change in the Chilean labor market outcomes due to an exogenous decrease in employer payroll taxes caused by the privatization of Chile's social security system. His results indicate that the incidence on employment of this policy was not statistically significant, but the incidence on wages was negative and statistically significant.

We estimated the following regressions separately for all workers, for blue-collar workers, and for white-collar workers<sup>45</sup>.

$$\Delta \log(E_i) = \beta_0 + \beta_1 * \Delta \log(W_i) + \beta_2 * \Delta \log(Y_i) + \varepsilon_i \quad (4.1)$$

$$\Delta \log(E_i) = \beta_0 + \beta_1 * \Delta \log(CC_i) + \beta_2 * \Delta \log(Y_i) + \varepsilon_i \quad (4.2)$$

$$\Delta \log(E_i) = \beta_0 + \beta_1 * \Delta \log(OP_i) + \beta_2 * \Delta \log(Y_i) + \varepsilon_i \quad (4.3)$$

$$\Delta \log(E_i) = \beta_0 + \beta_1 * \Delta \log(TLC_i) + \beta_2 * \Delta \log(Y_i) + \varepsilon_i \quad (4.4)$$

We do not use a time subscript in 4.1-4.4 because after we differenced the data we end up with one observation per firm. In the context of a panel data with time dimension equal to 2, a first difference regression is equivalent to estimate a fixed effects model. Notice that any of the cost measures in 4.1-4.4 are affected by exogenous changes in labor regulations as well as endogenous decisions by the firms about employment because they depend on the number of employees, and also depend on the type of contract offered to new employees. So, if we use data on those costs from the VMSS, there is a potential endogeneity problem. So, instead of those costs we use the indicators derived from changes in labor regulations outlined above.

Using the averages from the balanced panel, we estimate separate regressions for blue-collar workers, for white-collar and for all workers. Those estimations are reported in tables 4.1-4.3. For the case of all workers, the estimated coefficients for all labor regulation indexes, except for “*other cost index*” were negative and statistically significant<sup>46</sup>, even in the case that we control for the difference of real production. In the case of the blue collar workers, all coefficients were statistically significant and they have the expected signs, with the exception of the “*other cost*” index. It is important to notice that the

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<sup>44</sup> There was mobility among the different groups in the balanced panel. On average, 4% of the firms change groups between 1995 and 2001.

<sup>45</sup> Workers are the summation of blue-collar workers and white-collar workers. We do not include owners or firm's directors.

<sup>46</sup> We additionally use dummies for the different manufacturing sectors. Those estimated coefficients are not presented.

estimated coefficients for the “*total labor cost index*” are equal to the estimated coefficient for the “*minimum wage*”. In the case of the white collar workers none of the coefficients for the labor regulation indexes were statistically significant.

The regressions using the averages from the unbalanced panel are reported in tables 4.4-4.6. As shown in table 4.5, for blue collar workers over the two periods under consideration, each kind of labor regulation indexes, except for the other costs index<sup>47</sup> has a negative and statistically significant effect on average employment. Notice that the response for the unjustified dismissal cost index was greater than the response for the change of the real minimum wage index. When we add as a regressor – in any of those specifications- the difference of the average of real production in order to compensate for changes in employment due to changes in production in terms of sign and statistical significance, the parameters are very similar to the results in Table 4.4. For all cases, the estimated coefficient for the real production variable is positive and statistically significant. In 3 out of 5 specifications the coefficients related to labor regulations are bigger –in absolute value- in the unbalanced panel than in the balance panel while at the same time the coefficient of real production is smaller.

For the case of white collar workers, the estimated coefficients for the unjustified dismissal and seniority payments are statistically significant and with the expected negative sign, whereas the estimate for the difference of other costs has the wrong sign. As before, the slope for the real production is statistically significant and it shows a positive relationship. In this case, the coefficient for the difference of the real minimum wage is not statistically significant. It could indicate that wages and other labor costs for the white collar workers are not moving similarly to the minimum wage variation. It differs from the case of the blue collar worker regressions where the minimum wage was statistically significant in explaining employment changes.

## **5. Concluding remarks.**

The findings in this paper suggest that the changes in cost regulations that took place in the second semester of 1997 had a negative effect on manufacturing sector employment. The generalization of these

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<sup>47</sup> When we used a pooled regression the estimated coefficient for  $\Delta \log$  of real total cost, excluding seniority and severance real costs, was not statistically different from zero.

results for the whole economy has to be considered with care because the data covers only the manufacturing sector, and the panel data set is overrepresented with firms from LI and MI strata. The estimated coefficients for the labor regulations indexes for blue collar workers regressions have the expected negative sign and were statistically significant. This was not the case for the white collar regressions in the balanced panel. However in the unbalanced panel the coefficients for seniority payments and the unjustified dismissal cost index were negative and statistically significant for this type of worker. Bear in mind that all labor regulation indexes were calculated using a worker earning the minimum wage as a representative agent.

Notice that we processed the data in a way that the panel only includes firms that were surveyed in at least one year of the first period 1995-1997, and that also were surveyed in at least one year in the period 1998-2001. This allows us to focus on the employment outcomes of continuing firms. We therefore do not address the employment changes caused by incumbent firms exiting or new firms entering the market, an issue which should be dealt with in future research.

**Table 4.1**  
Dependent Variable:  $\Delta$  log of Number of Workers  
Balanced panel

$\Delta$ log of real total labor cost index	<b>-0.14</b>	<b>-0.12</b>		
	[0.03]***	[0.03]***		
$\Delta$ log of real unjustified dismissal cost index			<b>-0.08</b>	<b>-0.07</b>
			[0.01]***	[0.01]***
$\Delta$ log of real seniority cost index				<b>-0.09</b> <b>-0.04</b>

					[0.01]***	[0.01]***				
Δ log of real minimum wage cost index							<b>-0.14</b>	<b>-0.13</b>		
							[0.02]***	[0.02]***		
Δ log of real other costs index									0.01	-0.001
									[0.31]	[0.004]
Δ log of real production	<b>0.14</b>	<b>0.12</b>	<b>0.14</b>	<b>0.14</b>	<b>0.14</b>	<b>0.13</b>	<b>0.14</b>	<b>0.13</b>		<b>0.14</b>
	[0.02]***	[0.02]***	[0.02]***	[0.02]***	[0.02]***	[0.02]***	[0.02]***	[0.02]***		[0.02]***
Number of observations	670	670	670	670	670	670	670	670	670	670
F p-value	0	0	0	0	0	0	0	0	0.750	0

Notes: standard errors in parenthesis, \*\*\* significant at 1%, \*\*significant at 5%, \*significant at 10%.

**Table 4.2**  
Dependent Variable: Δ log of Number of Blue Collar Workers  
Balanced panel

Δ log of real total labor cost index	<b>-0.16</b>	<b>-0.15</b>								
	[0.08]**	[0.08]*								
Δ log of real unjustified dismissal cost index			<b>-0.09</b>	<b>-0.08</b>						
			[0.03]***	[0.03]***						
Δ log of real seniority cost index					<b>-0.1</b>	<b>-0.08</b>				
					[0.03]***	[0.03]***				
Δ log of real minimum wage cost index							<b>-0.16</b>	<b>-0.14</b>		
							[0.06]***	[0.06]***		
Δ log of real other costs index									0.053	0.04
									[0.10]	[0.10]
Δ log of real production	<b>0.14</b>	<b>0.14</b>	<b>0.14</b>	<b>0.14</b>	<b>0.14</b>	<b>0.13</b>	<b>0.14</b>	<b>0.13</b>		<b>0.15</b>
	[0.05]***	[0.05]***	[0.05]***	[0.05]***	[0.05]***	[0.05]***	[0.05]***	[0.05]***		[0.05]***
Number of observations	670	670	670	670	670	670	670	670	670	670
F p-value	0.043	0.002	0.026	0.001	0.002	0	0.003	0	0.596	0.01

Notes: standard errors in parenthesis, \*\*\* significant at 1%, \*\*significant at 5%, \*significant at 10%.

**Table 4.3**  
Dependent Variable: Δ log of Number of White Collar Workers  
Balanced panel

Δ log of real total labor cost index	-0.02	-0.01								
	[0.06]	[0.06]								
Δ log of real unjustified dismissal cost index			<b>-0.04</b>	-0.03						
			[0.02]*	[0.04]						
Δ log of real seniority cost index					-0.04	-0.04				

					[0.03]	[0.03]				
Δ log of real minimum wage cost index							-0.04	-0.03		
							[0.04]	[0.04]		
Δ log of real other costs index									0.1	0.09
									[0.07]	[0.03]
Δ log of real production	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>
	[0.04]***	[0.04]***	[0.04]***	[0.04]***	[0.04]***	[0.04]***	[0.04]***	[0.04]***	[0.04]***	[0.04]***
Number of observations	670	670	670	670	670	670	670	670	670	670
F p-value	0.160	0.006	0.145	0.003	0.086	0.002	0.315	0.005	0.219	0.004

Notes: standard errors in parenthesis, \*\*\* significant at 1%, \*\*significant at 5%, \*significant at 10%.

**Table 4.4**  
Dependent Variable: Δ log of Number of Workers  
Unbalanced panel

Δ log of real total labor cost index	<b>-0.08</b>	<b>-0.08</b>								
	[0.02]***	[0.02]***								
Δ log of real unjustified dismissal cost index		+	<b>-0.15</b>	<b>-0.13</b>						
			[0.02]***	[0.02]***						
Δ log of real seniority cost index					<b>-0.1</b>	<b>-0.09</b>				
					[0.01]***	[0.01]***				
Δ log of real minimum wage cost index							<b>-0.09</b>	<b>-0.08</b>		
							[0.02]***	[0.02]***		
Δ log of real other costs index									<b>-0.05</b>	<b>-0.01</b>
									[0.02]**	[0.02]**
Δ log of real production	<b>0.15</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.08</b>	<b>0.05</b>	<b>0.05</b>	<b>0.05</b>
	[0.06]***	[0.05]**	[0.05]**	[0.05]**	[0.05]**	[0.05]**	[0.06]***	[0.06]***	[0.06]***	[0.06]***
Number of observations	2023	2023	1883	1883	1883	1883	2023	2023	2023	2023
F p-value	0	0	0	0	0	0	0	0	0	0

Notes: standard errors in parenthesis, \*\*\* significant at 1%, \*\*significant at 5%, \*significant at 10%.

**Table 4.5**  
Dependent Variable: Δ log of Number of Blue Collar Workers  
Unbalanced panel

Δ log of real total labor cost index	<b>-0.27</b>	<b>-0.25</b>								
	[0.00]***	[0.00]***								
Δ log of real unjustified dismissal cost index			<b>-0.22</b>	<b>-0.20</b>						
			[0.00]***	[0.00]***						
Δ log of real seniority cost index					<b>-0.15</b>	<b>-0.14</b>				



				[0.03]**	[0.00]***					
Δ log of real minimum wage cost index						<b>-0.06</b>	<b>-0.14</b>			
						[0.05]**	[0.00]***			
Δ log of real other costs index								0.01	-0.01	
								[0.29]	[0.86]	
Δ log of real production	<b>0.12</b>	<b>0.06</b>	<b>0.04</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.12</b>	
	[0.03]***	[0.03]***	[0.03]***	[0.03]***	[0.03]***	[0.03]***	[0.03]***	[0.03]***	[0.03]***	
Number of observations	2578	2578	2578	2578	2578	2578	2578	2578	2578	2578
F p-value	0.001	0	0.005	0	0.004	0	0.03	0	0.772	0.05

Notes: standard errors in parenthesis, \*\*\* significant at 1%, \*\*significant at 5%, \*significant at 10%.

**Table 4.6**  
Dependent Variable: Δ log of Number of White Collar Workers  
Unbalanced panel

Δ log of real total labor cost index	-0.02	-0.05								
	[0.73]	[0.30]								
Δ log of real unjustified dismissal cost index			<b>-0.12</b>	<b>-0.11</b>						
			[0.00]***	[0.03]**						
Δ log of real seniority cost index					<b>-0.07</b>	<b>-0.06</b>				
					[0.02]***	[0.05]*				
Δ log of real minimum wage cost							-0.02	-0.03		
							[0.15]	[0.11]		
Δ log of real other costs index									<b>0.52</b>	<b>0.04</b>
									[0.05]**	[0.07]*
Δ log of real production	<b>0.03</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.04</b>
	[0.00]***	[0.01]**	[0.02]**	[0.02]**	[0.02]**	[0.00]***	[0.00]***	[0.00]***	[0.00]***	[0.00]***
Number of observations	2578	2578	2578	2578	2578	2578	2578	2578	2578	2578
F p-value	0.7303	0.008	0.013	0.006	0.02	0.008	0.149	0.006	0.002	0.007

Notes: standard errors in parenthesis, \*\*\* significant at 1%, \*\*significant at 5%, \*significant at 10%.

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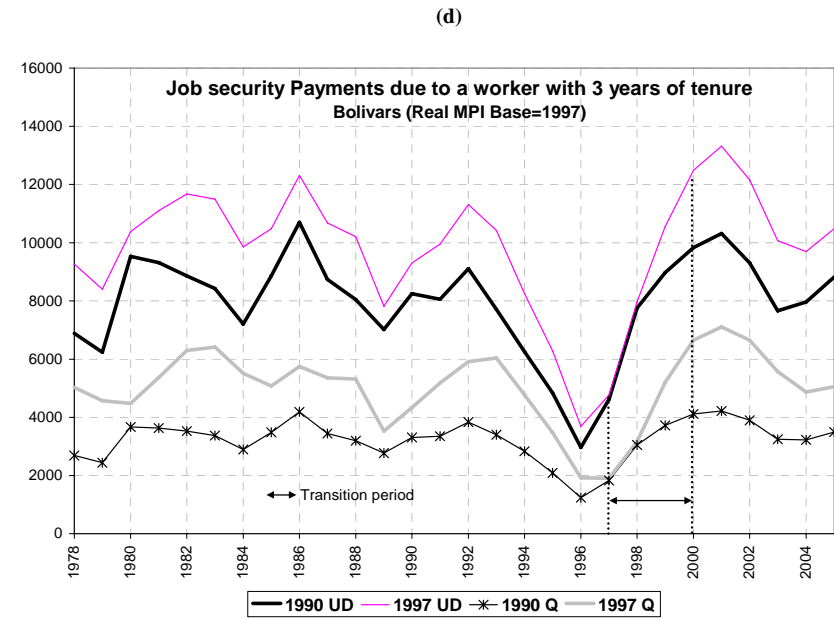
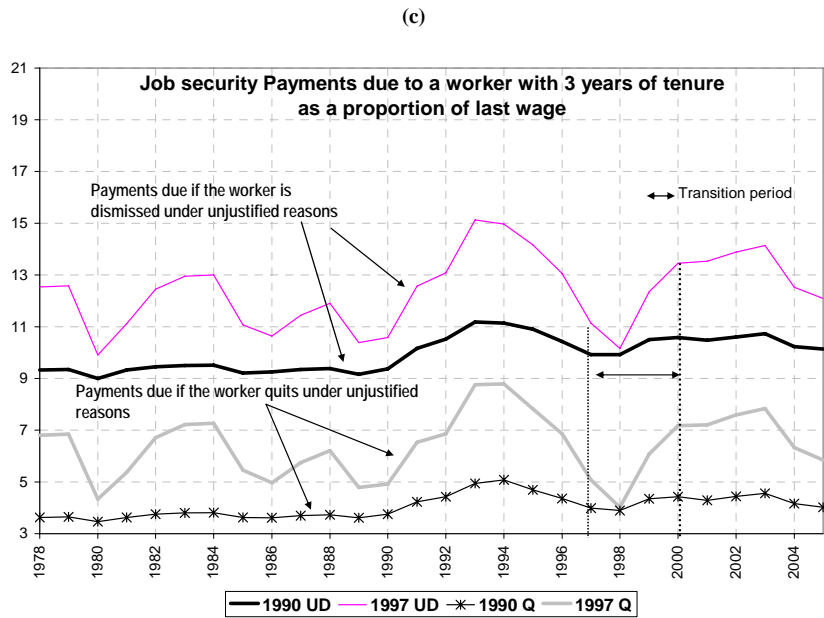
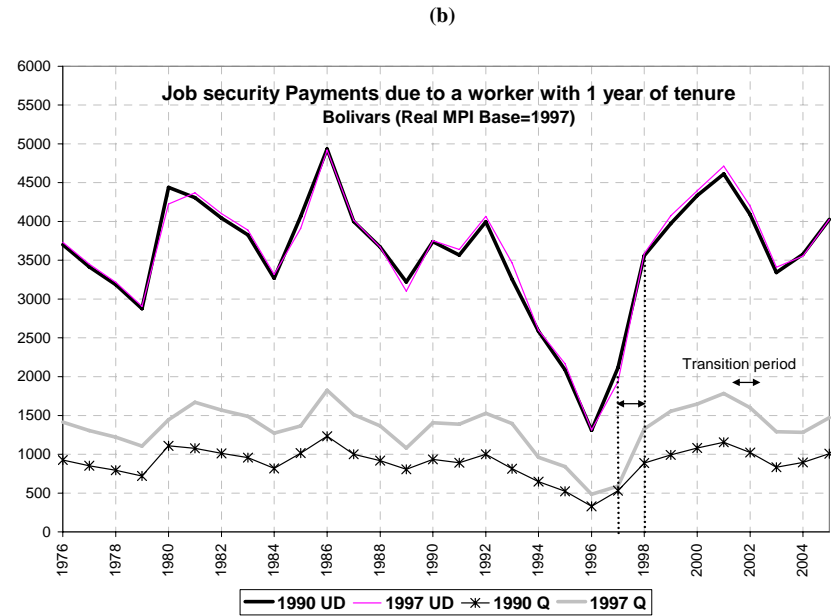
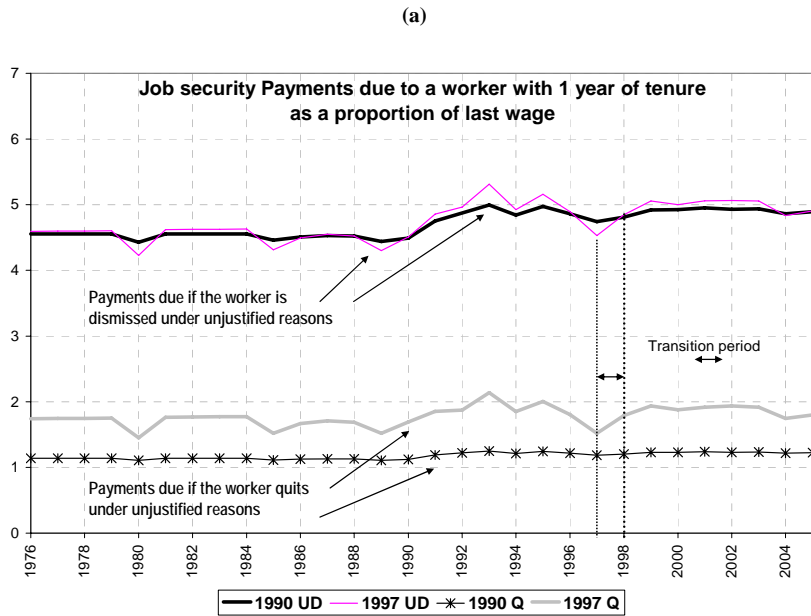
## **APPENDIX**

### **Table A.1**

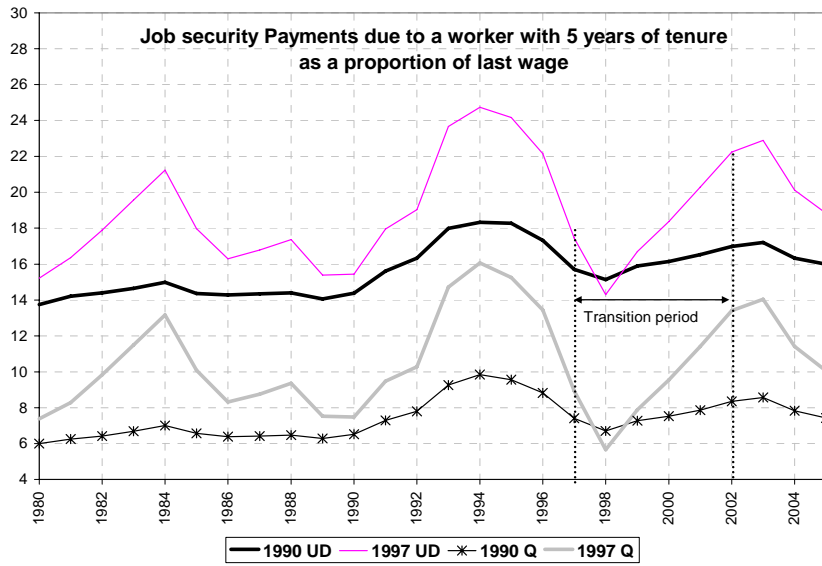
<b>Job Tenure in the Private Sector by Type of worker and Gender Number of years working at the same firm</b>									
Semester	Blue & white collar workers			White collar workers			Blue collar workers		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
	<b>Mean</b>								
1994-II	3.91	4.00	3.68	4.49	4.84	4.04	3.51	3.59	3.18
1995-I	3.54	3.59	3.44	4.09	4.36	3.74	3.15	3.20	2.98
1995-II	3.49	3.56	3.32	3.94	4.18	3.59	3.17	3.22	2.95
1996-I	3.40	3.49	3.20	3.72	4.02	3.30	3.18	3.21	3.06
1996-II	3.32	3.34	3.27	3.71	3.93	3.41	3.04	3.04	3.06
1997-I	3.38	3.39	3.34	3.88	4.18	3.49	3.03	3.01	3.13
1997-II	3.49	3.58	3.29	4.06	4.47	3.52	3.09	3.12	2.98
1998-I	3.50	3.57	3.35	4.18	4.66	3.56	3.07	3.08	3.07
1998-II	3.46	3.45	3.46	4.10	4.40	3.75	3.00	3.01	2.97
	<b>Median</b>								
1994-II	2.00	2.00	2.00	3.00	3.00	2.00	2.00	2.00	1.00
1995-I	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
1995-II	2.00	1.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
1996-I	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
1996-II	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
1997-I	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
1997-II	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
1998-I	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
1998-II	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
	<b>% of workers within each group with a tenure of 1 year or less</b>								
1994-II	43.86	44.04	43.45	35.32	33.24	38.07	49.70	49.35	50.99
1995-I	49.12	49.73	47.69	41.28	40.16	42.75	54.69	54.55	55.21
1995-II	48.70	50.03	45.38	40.49	40.25	40.85	54.52	55.28	51.59
1996-I	46.60	47.01	45.57	38.78	36.44	42.15	52.23	52.66	50.56
1996-II	47.99	49.37	44.61	38.92	38.19	39.91	54.40	55.03	51.77
1997-I	48.61	49.63	46.28	40.24	38.04	43.10	54.29	55.27	50.69
1997-II	50.34	50.44	50.09	41.35	37.88	45.95	56.60	56.84	55.73
1998-I	51.79	52.13	50.98	42.85	40.28	46.22	57.46	57.46	57.48
1998-II	51.79	52.40	50.34	43.09	40.42	46.31	57.92	58.09	57.17

Source: Venezuelan Household Surveys

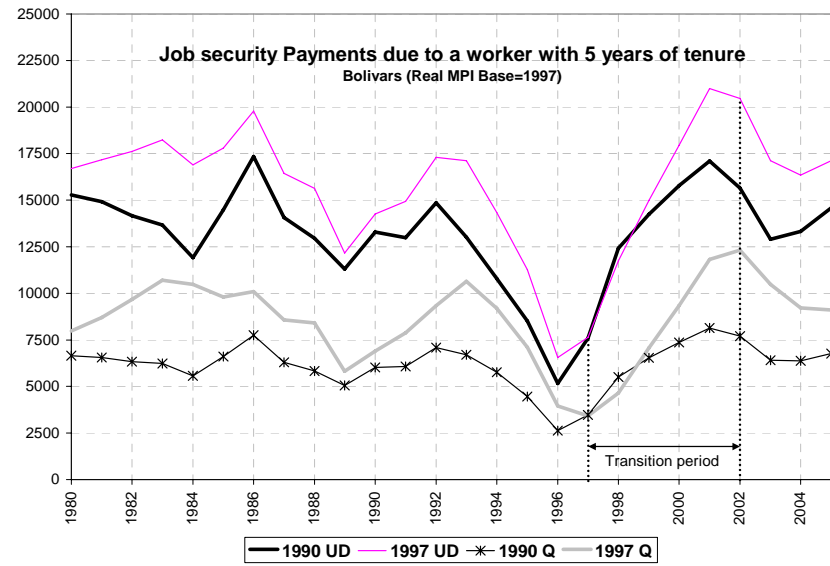
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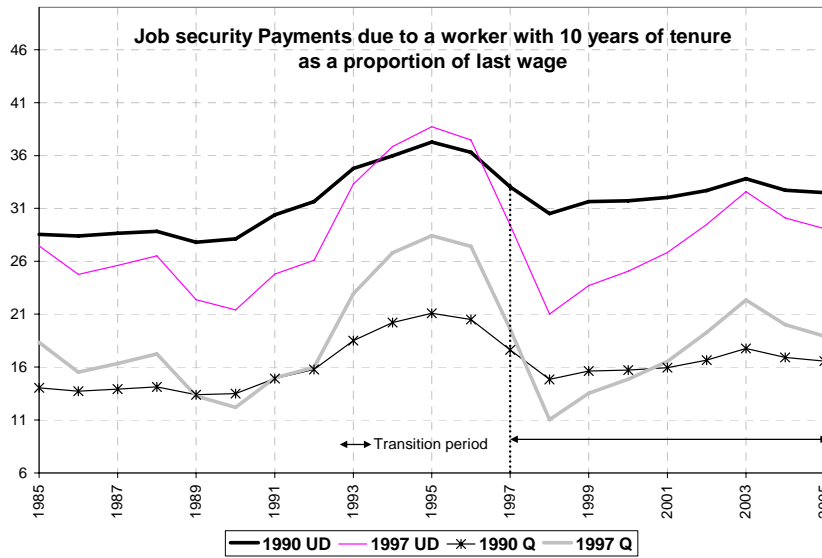
(e)



(f)



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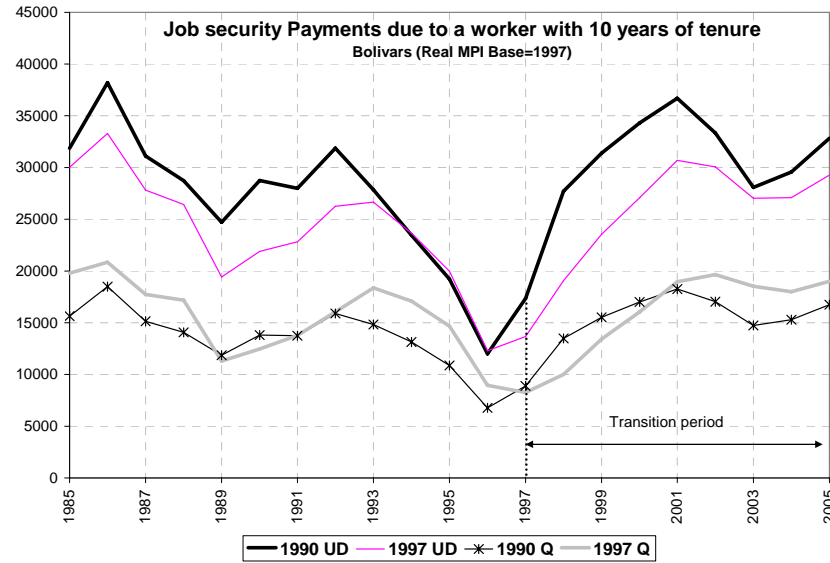
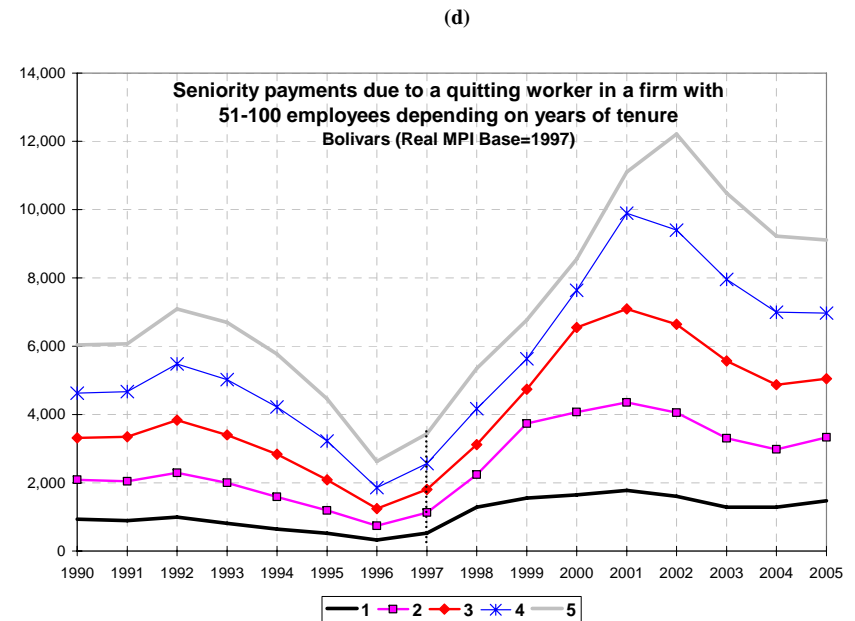
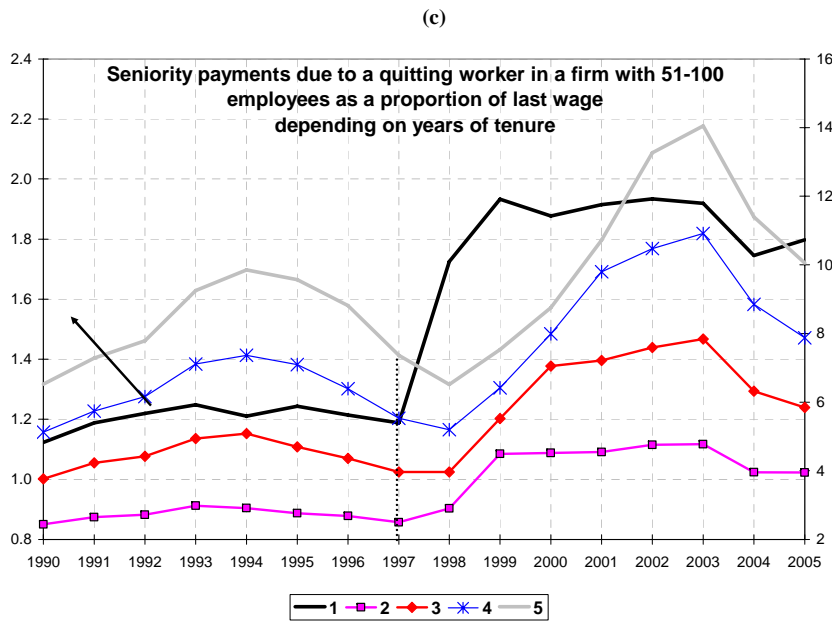
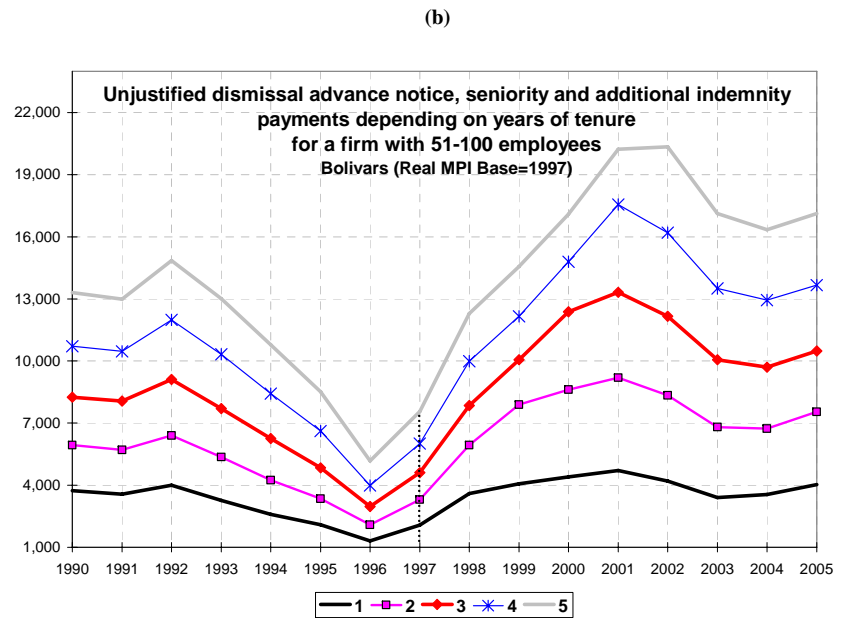
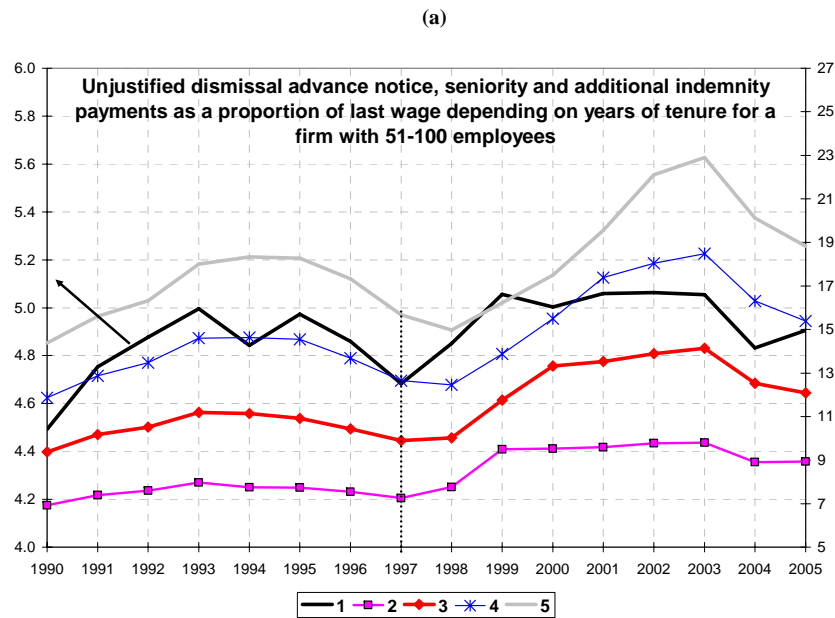


Figure No. A.2





**CHAPTER 6:**  
**Understanding Economic Growth in Venezuela: 1970-2005**  
**The Real Effects of a Financial Collapse**

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## 1. Introduction

The literature relating to the links between a country's degree of financial development and its per capita income level and rate of growth is large and long dating (Bagehot (1873), Hicks (1969), Schumpeter (1912), Robinson (1952), Lucas (1988)). The existence of a correlation was long ago documented (Cameron et. al. (1967), Goldsmith (1969), and McKinnon (1973)), however correlation does not imply causality. Most recently King and Levine (1993) showed that financial development and growth are not just contemporaneously correlated, but the first anticipates the second in a cross-section of countries. The size of the effect was shown to be large: a one standard deviation higher level of financial development –as proxy primarily by measures related to the size of the banking sector and the stock market relative to the economy- implies around one percentage point higher growth rates over long periods of time. Advances have been made in addressing the potential endogeneity of the size of the financial system to future growth prospects (Levine and Zervos (1998), and Beck, Levine and Loayza (2000)). The use of legal origins and financier's rights as instruments has been critical. The latest research has focused on identifying more direct channels or mechanisms through which finance affects growth. This has been pursued in the cross-country growth regressions setting (Beck et al. (2000)), using micro data (Rajan and Zingales (1998), Wurgler (2000), and Love (2001)), and through the natural-experiment approach (Jayaratne and Strahan (1996)).

Most of the literature on the real effects of financial development to date rests heavily on the comparison across countries. This, despite the fact that around one half of the variation of the traditional indicators of financial development comes from the time series within countries (Braun and Raddatz (2005)). Detailed country studies are needed to check that the main results on the literature are present in the time series, and to learn more about the

specific mechanisms at work. Venezuela, in this sense, represents a great opportunity for –as we will see- it has seen marked changes on its degree of financial development in the last four decades.

The paper begins showing that, no matter how you measure it, Venezuela’s degree of financial development today is extremely low. However, this was not always the case. In the following section we date and quantify the collapse in bank credit, and provide a brief description of the succession of events surrounding it. In the fourth section we document the large, negative effects the low level of financial development has had on Venezuela’s growth.

## **2. Venezuela’s Financial System Today**

When the size of its economy is taken into account Venezuela’s financial system is today one of the smallest and least developed in the world. Bank credit to the private sector amounts to just around 9% of GDP, ranking the country in position 132 out of the 157 countries where the figure is available for the 2000s<sup>1</sup>. The ratio is the lowest among the Latin American countries, and even lower than the median in Sub-Saharan Africa. This is not just due to the fact that Venezuela’s economy is relatively large; a figure of \$400 for per capita private credit still leaves the country well below the other mayor Latin American economies, and at one seventh the value for Chile. The total stock of around \$10 billion is 15% lower than Peru’s (whose economy is half the size), and 60% lower than Colombia’s.

These very low indicators are not easily explained with the importance of the oil sector in the economy. Even if we assume that the oil sector does not demand any domestic financial services -either directly or indirectly through the income generated, - and consider

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<sup>1</sup> The cross-country data for the size and efficiency of financial systems come from Beck et al (2006). The data for GDP and other economic country variables come from World Development Indicators. All figures in this section correspond to the average of the indicator between 1995 and 2004.

only the non-oil GDP (around 3/4 of the total), the stock of Venezuela's bank credit is still much lower than other countries'. Moreover, Venezuela still ranks in the lowest decile of private credit to GDP among the 30 economies that are more dependent on oil.

Is it the low level of per capita GDP, then? Figure 1 depicts the well know fact that the ratio of private credit to GDP increases with (the log of) per capita GDP. Indeed, per capita GDP alone explains around half the cross-country variation in private credit. According to this relation, Venezuela's banking sector should be 5.6 times larger than it actually is<sup>2</sup>. In percentage terms there is no other country with a more underdeveloped system relative to what this relation implies.

This degree of underdevelopment is not peculiar to the banking system. Out of the 54 countries for which data on equity markets is available, Venezuela's market capitalization to GDP of 5% surpasses only that of Bangladesh. With 5 dozen listed firms -that are worth on average around \$100 million each, - the market is only larger than that of Ecuador, Jamaica, and Trinidad and Tobago in Latin America. The relation between per capita GDP and stock market capitalization is again very significant (see Figure 2), implying that Venezuela's market should be 5.4 times larger than it actually is<sup>3</sup>. The number of listed firms per capita was expected to be 7.5 times larger based solely on the level of income in the country.

Overall, the composition of the financial system is not particularly different in Venezuela when compared to other countries. The banking sector and the stock market appear to be similarly underdeveloped when compared to other countries (see Figure 3).

The size of the private bond market in Venezuela is not even recorded by the Bank of International Settlements, and the total life and non-life insurance premiums are both negligible. Table 1 presents basic statistics about Venezuela's bond markets based on

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<sup>2</sup> This difference is statistically significant at p-values below 0.1%.

<sup>3</sup> This difference is statistically significant at p-values below 0.1%.

issuance data recorded in the SDC Platinum dataset. Total issuance is extremely small even by Latin American standards. Moreover, only around 40% of the capital raised via bonds is raised in the local market, where the average principal (\$17 million) is quite small, and the maturities (1.9 years) are extremely short.

Venezuela's financial underdevelopment is not only related to the size of its financial system but is also reflected in its efficiency. Even after controlling for its small size, banks' net interest margins of 16.5% are about two times too high, and the highest in the entire sample of countries<sup>4</sup> (see Figure 4).

These large margins have generated a virulent academic discussion on its determinants. A series of papers collected in Banco de Venezuela (2001) offer a number of possible explanations including high transformation costs, undercapitalization of banks, high risks, and collusive practices. The conclusions reached by the different authors are not particularly consistent, and for the most part have left the question unanswered. There is even disagreement as to whether the margins are high or not. Nevertheless, government officials appear to have favored the market power explanation. At least since 2001 the government has put pressure on banks to reduce their interest-rate margins in order to offer loans at lower interest rates and pay higher rates to depositors. This would help consolidate the recovery by stopping the capital flight and generating employment.

Figures 5a and 5b shed some light into the question. While overhead costs are extremely high and much larger than expected given the size of the banking system, the level of concentration in the industry is very low. Indeed, the banking sector in Venezuela has been traditionally quite dispersed and has only begun to consolidate since around 2000 following the resolution of the 1994 crisis and the authorization of foreign bank operations. This suggests that high costs, presumably due to the industry not taking advantage of the

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<sup>4</sup> This figure is statistically significant at 1%.

economies of scale in the sector, rather than market power are more likely to explain high margins. One should not overstress this conclusion, however. First, it has been difficult to document the existence of economies of scale in Venezuela's banking sector. This, despite the fact that economies of scale have long ago been documented in other banking markets and that the global wave of consolidation in the industry since the late 1990s has been taken as prima-facie evidence for these. Second, although concentration makes collusion more difficult, it may not preclude it. The fact that after the 2001 negotiations with the government banks indeed reduced loan rates and increased deposit ones is consistent with this view. Finally, in a system so dependent on lending to the government the scope for political economy explanations is wide. It is possible that an important part of banks' activity consist now in seeking rents from the government instead of lending to the public. Only around half the assets of the industry are lent to the private sector (see next section). If rents are indeed plentiful –as it seems they have been since the government has been willing to pay very high real rates to finance its deficits- competition in private lending may not be particularly worthwhile.

Interestingly, the inefficiency in the banking industry is not found in the stock market. Turnover although extremely low, is not lower than what the size of the market would imply (Figure 6).

The literature has identified a series of factors that explain the cross-country differences in financial development. These can be grouped in two: those related to the laws protecting the financiers and their enforcement, and those related to the availability and of the information on the borrowers. The level of Venezuela's financial development is more or less consistent with how it ranks on these measures (see Figures 7 and 8). While the degree of protection granted to both creditors and minority shareholders, and the quality of information

available to shareholders are quite low, there seems to be reasonably good information about borrowers.

Although these factors can form the basis for future reform, they come short in explaining Venezuela's low level of financial development for the country did not have a massively underdeveloped system before. Neither bank credit to the private sector nor stock market capitalization was significantly different than what was expected from its level of income per capita in the 1970s and 1980s. This is far from the usual picture since the level of financial development is quite persistent in time (see Figures 10 and 11). Indeed, the ranking of private credit to GDP across countries in the 1970s explains around 45% of the figure 30 years later, and the ranking of stock market capitalization in the early 1980s explains 65% of the figure today. This persistence and the initial values for Venezuela imply that the banking system and stock market should now be 4.5 and 5 times larger, respectively.

Abiad and Mody (2005) show that the time series variation in financial development can be tightly linked to specific financial-sector policies. Figure 9 depicts how these policies changed in the case of Venezuela. Aside from partial allowance of international capital flows, as of the late 1980s Venezuela still had directed credit policies, entry barriers into the banking system, interest rate controls, very weak financial regulation, and had not yet engaged in banking sector privatization. Although developed countries had by that time abandoned these policies altogether, the situation in Venezuela was not very different from that of the typical developing country. As a norm, less developed countries only began liberalizing their domestic financial systems in the early 1990s. Thus, the fact that up to that point Venezuela did not appear underdeveloped in relation to other countries of similar economic development is consistent with the policies that were being followed.

However, what is peculiar to Venezuela is that since the early 1990s (partial) reform efforts the policies have been all but consistent in time. This mirrors what happened in the



conduction of economic policy and the political system more generally. As we will see in the next section, it is also importantly the result of the way the 1994 banking crisis was managed. The role of politics in the evolution of the financial sector cannot be overemphasized. As the lively account of the 1994 crisis by De Krivoy (2000) shows, political will is critically required to create and sustain the building blocks of a sound financial system. This “will” depends importantly on the political economy game the players involved take part in (see Braun and Raddatz (2005, 2006)).

### **3. Venezuela’s Financial System Collapse**

When compared to other countries’, Venezuela’s financial system looks extraordinarily small and inefficient. What is more striking is that it also looks out of line with what one would predict based on the country’s income per capita and past performance, even when taking into account the importance of the oil sector and the fact that it is located in Latin America.

#### ***When did Credit Collapse?***

Figure 12 looks at the evolution of private credit and stock market capitalization to GDP in the time series. It is apparent that following a golden era since the mid-1970s, private credit falls abruptly in the late 1980s and again in the mid-1990s. Since then, the index has stabilized at a level of 8-9%, which is around half the 1960-1974 levels. The stock market index follows a similar pattern, standing today at significantly lower levels than in the 1980s. This is partly due to the fall in prices and the fall in the number of listed firms. The post-stabilization booms of the early 1990s proved short-lived.

The collapse of the banking system indicator is almost entirely explained by the evolution of private credit itself rather than by what happened to the denominator (Figure

13). While total GDP and non-oil GDP grew by 23% and 15% in the 1988-1998 period, real bank credit to the private sector collapsed by 54%. Prior to 1988 real private credit shows a stable relationship with non-oil GDP, with a highly significant estimated elasticity of 1.1<sup>5</sup>. This elasticity is very similar to that of the average country in since 1960 (1.07)<sup>6</sup>. For the 1989-2004 period, however, the elasticity is cut in half (0.53) and is no longer significant.

Figure 14 shows this break. The break in the link between the non-oil economy and the financial sector may have started around 1978 when despite continuing growth; real credit remained relatively constant for almost a decade. The break may have only deepened during the 1989 recession. The statistical tests performed are only supportive of a break in 1989<sup>7</sup>, however. Furthermore, when looked at more closely, the relation is largely driven by the evolution of the non-tradable component of the non-oil economy. Braun and Raddatz (2006) show that this is indeed the rule across countries: non-tradable sectors benefit much more from financial development than tradable ones, particularly when the economy is open to trade in goods and capital so that tradable industries have greater access to foreign financing. Thus, the financial stagnation decade is thus perfectly consistent the greatly reduced rate of growth in the non-tradable component of Venezuela's GDP. This does not establish causality, but lends support to the view that the break occurred in 1989 and not before. Of course, this does not preclude the possibility that the roots of the break are to be found in the period preceding the banking collapse (see, for instance, De Krivoy (2000)).

The situation has not gotten back to normal since; the period 1997-2004 does not look statistically different from 1989-1996 in terms of the non-oil GDP elasticity of real private credit. Interestingly, the elasticity of private credit with oil GDP is just 0.2 and not

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<sup>5</sup> This computation is done in logs and allows for a time trend.

<sup>6</sup> This is based on within variation in a yearly sample of 135 countries between 1960 and 2004.

<sup>7</sup> p-value lower than 0.1%

statistically significant. Oil-related growth does not seem particularly useful for the development of the domestic financial system.

It can still be the case that what happened to Venezuela's banking system can be explained with its dependency to oil or to its Latin American location. After all real oil prices fell by 22% in the 1988-1998 decade and the period includes the Argentine and Mexican collapses.

Figure 15 shows the evolution of private credit to GDP averaged over the Latin American and the group of oil-dependent countries. The evolution of private credit in Venezuela is very consistent with what was happening in these two groups prior to 1989. Starting in 1989 Venezuela's banking sector parts away with that of the comparable groups. Both series did grow slower in the early 1990s when compared to the 1960s and 1970s; however by 2000 they had both easily surpassed their previous record levels. For Latin America, the 1988-1998 decade was in fact the best ever in term of banking system deepening. The link to oil does not seem particularly relevant either: although real oil prices fell, this decrease was much smaller than that of 1980-1988 (60%) when real credit remained stable. Also, oil income actually increased by 26% during the period fueled by the surge in production.

### ***Brief Anatomy of the Collapse***

In order to explore what happened to Venezuela's banking system around the collapse we take a look at quarterly data for a number of indicators<sup>8</sup>. Figure 18 takes a look at real credit to the private sector and real assets, Figure 19 at the sources of financing used by banks, Figure 20 at reserves, and Figure 21 at interest rates.

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<sup>8</sup> These data come from IMF's International Financial Statistics.

Real deposits start falling sharply in mid 1987 when monetary policy turns very contractive in the face of increasing inflation. Initially the collapse in real deposits did not translate into a collapse in bank's assets. Up until December 1988 the fall in deposits was financed with foreign borrowing and capitalization (see Figure 19). Foreign financing dries-up following the balance of payments crisis of 1989. Fixed nominal lending rates and mounting inflation, and the inability to finance the loss of deposits start taking a big toll on bank profitability. Bank losses start showing up as reduced capital, so that the continuing fall in deposits finally traduces into a collapse in credit to the private sector.

Is then the collapse in private credit simply the reflection of the inability of banks to extend credit? Not likely. The fall in credit went much further than what can be explained simply with the behavior of deposits, foreign financing, and capital. Even after 1991, when both real deposits and assets bounced strongly and all but returned to their levels in the first half of the 1980s, private credit was still around 60% lower. The ratio of private credit to bank assets that had been very stable since the 1960s at 75% fell to around 55% in 1989 and remained there for the following three years (Figure 18). The banks' change in composition of assets towards Reserves and Central Bank paper -attracted by very high positive real rates following the end of the interest rate controls- fully explains the drop in the ratio of private credit to assets (Figure 20). Indeed, as the post-devaluation inflation receded, nominal rates remained quite high, and real rates turned positive through the 1991-93 period for the first time in more than 10 years.

By mid 1993 inflation starts getting out of control again and by mid 1994 real rates had gone back to the negative side. A huge increase in Central Bank credit to the banks - neutralizing their capital losses - and the following recapitalization compensated the fall in deposits that at that point was pretty modest. Lack of coordination in addressing the early collapse of Banco Latino deepened the lost of trust in the system. With the Central Bank

unwilling to keep lending large sums to troubled banks given the inactivity of the government, Fogape lacking sufficient funds, and sound banks missing the incentives to come to the rescue partly due to the lack of a legal framework for mergers and acquisitions, the crisis became systemic.

Private credit collapsed once again as banks shifted towards holding Central Bank paper and reserves (total reserves). New risk-weighted adequacy ratios, enacted as part of the 1994 Banking Law, boosted the incentive to invest in zero-capital requirement assets. During 1996 real deposits catch up and start falling sharply.

By mid 1996, when the crisis reaches its trough, banks were holding as much reserves as private credit. Since the recovery total reserves have remained between 20% and 40% of assets, and the behavior of real private credit has more or less mirrored that of real deposits as was the case before the late 1980s. The ratio of private credit to assets recovered its pre-1994/95 crisis level but never again reached the level of the 1960s, 1970s and most of 1980s. The ratio has been relatively constant at around 50% in the past 10 years.

### ***Why did Credit Collapse?***

A first potential generic explanation for the financial collapse is that growth caused the collapse in credit which then amplified the initial fall in growth. In Table 3 we explore this story by conducting Granger-causality tests for a number of yearly real activity aggregates in the last 40 years. These tests do not establish causality in the economic sense but do help at least in determining which sectors might respond more to the fluctuations of banks' private credit and what is the sequence of events. We focus on establishing causality in the Section 4. The tests consist on checking whether past values of private credit have significant explanatory power for activity over and above what is explained by the dynamics

of activity itself. Our particular specification uses real growth rates and includes two lags. We also tested with the variables in logs plus a trend obtaining very similar results.

For the entire 1963-2003 period one cannot reject that total GDP growth does not cause real private credit growth nor that private credit does not cause GDP (see the first row of Table 8). While the former is true also for each sub period (before and after the collapse), we do find some evidence that the financial deepening of the 1960s and 70s did contribute to (more precisely anticipate) the rapid growth during those years. The second row shows that this is particularly the case for non-oil GDP for which we cannot rule out Granger-causality for that (and also the entire) period. There appears to be significant feedback into the growth of the banking system for we can also reject the hypothesis of no causality going from non-oil GDP to private credit.

In the next two columns I split non-oil GDP into the tradable and the non-tradable components. We define agriculture, mining, and manufacturing as tradable and let the rest of the non-oil economy be the non-tradable part. The ability of both components in explaining future private credit is quite strong both before and after the collapse. The high degree of financial development before the collapse seems to have benefited the non-tradable sector much more clearly than the tradable one. In fact, while we easily establish causality from growth to private credit in both periods, it doesn't work the other way around. This is not surprising for most tradable firms (importers and exporters, in particular) are much more likely to have access to both supplier and bank credit from overseas. Traded goods can be used as collateral because they can be consumed by the foreign lender and their value does not correlate as strongly with the business cycle as that of non-tradable ones (see Braun and Raddatz (2006)).

In the next two rows we split value added in the manufacturing sector into two components based on the natural demand for external financing of different industries. In

order to do so we use split all the non-oil related industries according to the median of Rajan and Zingales (1998)'s measure of external finance dependence. The measure corresponds to the share of capital expenditure that is not financed with internal funds computed for U.S. listed firms through the 1980s, and aggregated into ISIC-3 industries. The actual use of external finance is associated with the desired amount in view that these large firms listed in (by most measures) the most developed financial market are not very likely to be particularly constrained. If this demand is a relatively stable technological or industry characteristic, we can use this measure not only for the U.S. but for other countries as well as an exogenous measure of the demand for external funds. Data on the growth of the different industries is obtained from UNIDO's Indstat dataset. We have excluded the oil-related industries (Petroleum Refineries and Miscellaneous Petroleum and Coal products) to make the conclusions robust to the evolution of the influential sector. Table 9 presents the measure for the different industries. Interestingly during the financial crisis period, private credit appears to Granger-cause growth in the highly external finance dependence sectors, something that is not found for the less dependent industries. Before the collapse the opposite seems to be true.

Overall the evidence is not very supportive of the growth collapse causing the credit collapse hypothesis. Although growth seems to have a positive effect on credit, this is mainly driven by the pre-crisis period, when credit was either expanding very fast or stagnating. The causality from growth to credit disappears in the crisis period when using the aggregate and non-oil GDP series. The causes of the collapse, then, appear to reside more on the banking sector and not –at least primarily- on what happened to the economy.

A second potential explanation for the credit collapse is the conventional crowding out story whereby a fiscal collapse increases the public-sector demand for funds, sharply raising interest rates. High rates discourage banks from lending to the private sector because

of informational asymmetries (moral hazard and adverse selection), and discourage private borrowers from taking on loans.

A number of facts –some of which we already documented- seem consistent with this hypothesis. First, both episodes of credit collapse are preceded by a couple of years of strong reversals in fiscal accounts. Second, these same episodes of increase demand for government financing coincide with periods in which foreign financing had become more stringent, leaving the domestic financial system as the only source of financing. Third, in the absence of significant changes in the supply of credit and more stringent foreign borrowing conditions, real rates were bound to rise significantly. And they certainly did. In fact, as we have seen, for the first time in many years they turned positive and remained very high throughout the 1989-1994 credit collapse period (Figure 21). Fourth, banks do not appear to have been unable but rather unwilling to lend to the private sector. Bank capital and assets declined far less than private credit. Fifth, banks indeed increased public-sector lending substantially. This explains almost entirely the fall in real private credit.

### ***How deep was the collapse?***

In Figure 16 I construct three benchmarks: the first one based solely on the pre-1989 relation between private credit and GDP in Venezuela (in logs, and allowing for a time trend and 2 lags for GDP), the second one based on the pre-1989 relation between Venezuela's private credit series with those of the average Latin American and oil-dependent country (in logs and allowing for a time trend), and the third one based on both relations. These benchmarks imply, respectively that by the mid 2000s Venezuela's stock of private credit should have been 4.4, 10.6, and 2.9 times larger than it actually was. The average of these values (5.9) is not very far from the magnitudes we obtained based solely on cross-country comparisons and the persistence of the indicators (4.5 and 5.6, respectively).



Using the third benchmark, Figure 17 asks how much of the misalignment is due to each of the mayor crises that form the collapse: the 1989 stabilization and the 1994 banking crisis. It turns out that each of the crises explains around half the deviation from the expected that we see today.

#### **4. The Real Effects of Venezuela's Financial System Collapse**

Venezuela's financial system was not always as underdeveloped as it is today. A couple of big crises starting in the late 1980s took the system from a level consistent with the country's economic development to what it is now. This, the main section of the paper, tries to determine whether the credit crunch had significant real effects on the economy. We exploit a number of different datasets to take a look at the issue from a number of different angles. To the time-series aggregate evidence of the last section we add evidence from cross-sectional manager's perceptions and expectations, industry panel, and listed-firms panel.

##### ***Perceptions –Survey Evidence***

The World Bank's Doing Business Survey is conducted in a large number of countries with the goal of determining the main conditions that either enable or constrain business. In each country it asks the views of managers of around 100 firms. In addition to recording the views on the mayor constraints faced in doing business, the dataset includes a number of characteristics of the firms and, importantly, the expectations about future investment and growth. One of the main subjects of the survey is financing. In this section we ask whether managers' perceptions about the importance of lack of financing are consistent with what the macro data show, and explore whether it matters for their future plans/expectations.

Table 3 shows that, when compared to other problems, overall managers do not perceive lack of financing as a mayor obstacle to doing business in Venezuela. Political instability, inflation, and crime seem to them much more important. Relative to other countries, both poor and rich, the position of financing in the rank is quite low. This does not mean that financing is unimportant in Venezuela; it just means that there are other mayor constraints. In fact, 31.3% of the managers surveyed responded that financing was a mayor constraint, a much larger figure than in the OECD (Table 4). Still, when compared to the average country, countries in Latin America and to countries of similar degree of development, Venezuelan managers do not feel particularly constrained by lack of financing.

The picture that emerges from Table 5, which shows the sources of financing used by the firms, is somewhat different. More consistent with the low ratio of private credit to GDP, bank financing accounts for a mere 15.5% of the total in Venezuela. This figure is 15 percentage points lower than what would be expected given the country's income level and its geographical region<sup>9</sup>. On the other side of the coin internal financing, which includes retained earnings and family financing, accounts for 60% of the total, 22.3 points larger than expected and also very significant in statistical terms.

At least in terms of the way they actually finance their operations, managers in Venezuela behave as if they were financially constrained. Perhaps they just do not express it directly because lack of financing is overshadowed by other important factors such as political instability and inflation uncertainty. These can certainly have an effect on growth opportunities and therefore on the demand for external funds. However, the mix between the internal and external financing of the investment that is actually done is more consistent with a supply story, namely with the banking system not being able to provide the funds -or at least not at conditions that managers are willing to accept. It is likely that (past and actual)

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<sup>9</sup> p-value lower than 0.1%.

instability increases perceived credit risk and ends up in high interest rates. In fact, when asked about the specific issues that limit their access to external finance managers name high interest rates on top of everything else.

But, does it matter for investment and (ultimately) for growth? In the end internal and external funds, although not always perfect ones, are in essence substitutes. Also, after almost two decades of working with almost no financial system on which to rely, managers might have come up with other –perhaps informal- mechanisms to finance investment. Table 6 shows that, within Venezuelan managers, expected future investment growth is very significantly correlated with the views of managers about what will happen to the firm's debt. This is true even after controlling for investment opportunities (proxied with the expected rate of growth for sales), and the perception of other factors limiting the ability to do business (proxied with the average importance of non-financial constraints). Expected external financing is also highly correlated with the expected growth in employment and exports.

All this suggests that external financing is perceived to be an important part of the future growth picture. However, correlation does not establish causality. An important part of the story is probably investment causing increased demand for all kinds of funds, including debt. This problem is, of course, not new in the real-effects-of-finance literature. One way in which it has been dealt with is by looking at whether the financing or investment behavior differs across firms. Fazzari, Hubbard, and Petersen (1988) in particular propose looking at the sensitivity of investment to the availability of internal funds. In a world with no financial frictions -where internal and external funds are perfect substitutes- investment should not depend at all on the availability of internal funds, but only on the existence of growth opportunities. A large literature has established that these sensitivities are significantly positive and particularly so for firms more likely to be *a-priori* financially constrained (small, opaque, R&D intensive, etc.).

Table 7 looks at this in the context of the managers' survey in Venezuela. We explore the extent to which future investment can be explained with growth opportunities vis-à-vis internal cash. We measure growth opportunities with the manager's expectation of future sales growth, and the availability of internal funds with past sales growth. These measures are not perfect: expectations of future sales growth are endogenous to investment, and past sales growth –although a measure of past success- might be only weakly correlated with the stock of cash. On the other hand, the approach is quite robust to the main criticism to the related literature: growth opportunities are measured with significant error that is likely to be correlated with cash or cash flows. Here we have a much more direct measure for growth opportunities (the opinion of the manager), and the cash flow proxy is much more likely to be exogenous. Also, we are not particularly interested on the absolute magnitude of the coefficient of each variable but rather on how they compare to each other across samples of firms more/less likely to be financially constrained. We look at age, size, and foreign ownership. Small firms will find it harder to access external finance given the importance of fixed costs in monitoring and screening. Young firms will typically be more opaque simply because they lack a track record. These two measures have been extensively used before as proxies for the likelihood that a firm is financially constrained. To these we add foreign ownership on the assumption that the overseas owner has access to more developed financial systems. Considering the position of Venezuela in the financial development ranking this is quite likely the case even if the owner were not from a rich country.

Overall, the results show that while investment opportunities typically enter in a positive and significant way, the availability of internal funds is less robustly correlated with expected investment growth. The related literature typically finds a strong positive coefficient for cash flow but fail to find significance for growth opportunities. This difference is natural and goes in the same direction as the relative improvement we make in the measurement of

the two variables. The importance of non-financial constraints is generally negative but insignificant. More to the point, when comparing the regression coefficients across the groups it is clear that relative to the availability of internal funds investment opportunities are much important in the relatively financially-unconstrained groups. In all cases, the coefficient for growth opportunities is larger and more significant in the unconstrained group, while exactly the opposite is found for the coefficient for internal funds. The last row of the table shows that while we cannot reject that both coefficients are equal in any of the constrained groups, we are able to reject the hypothesis in each of the unconstrained ones.

We interpret the set of results in this section as suggesting that investment in Venezuela is today importantly determined by the availability of external funds. The limited amount of external funds available implies that small, young, and local firms cannot invest fully into their opportunities and grow as fast as they could.

### ***Industry-level Evidence***

We already provided some evidence on the evolution of private credit Granger-causing growth especially in the non-tradable sector, and in the high external finance dependence tradable one. In this section we take a closer look at the manufacturing industry data that consist on yearly observations for 26 manufacturing industries for the 1963-1998 period. Looking at a panel of industries has two important advantages over just considering aggregates. The first one is that one is better able to control for omitted variable bias by focusing on how industries differ in a particular moment in time and not just on how each particular one evolves. Time-varying factors common to all industries can be controlled for. The second big advantage is that the endogeneity concerns are eased significantly. Although it is quite likely that the entire non-oil tradable sector affects in some way the evolution of private credit through a demand channel, it is not very likely that what happens in one

particular sector that represents at most around 1% of GDP affects the entire banking system. These kind of data also allows to be more specific about the specific mechanism through which the availability of finance matters for growth.

There is by now a large literature using this methodology and similar data. The goal has been establishing that finance does matter for real outcomes and the likely mechanisms at work. Rajan and Zingales (1998) showed that, relative to less dependent ones, industries that are highly dependent on external financing grow slower in countries with poor financial development (measured as private credit to GDP). Braun and Larrain (2005) similarly provided evidence for the financial channel of the business cycle by showing that more dependent industries fare much worse relative to others during recessions in countries with less developed financial systems. Finally, Kroszner et al (2002) showed that the growth of these same industries is the most affected during financial crises.

We start with this last piece of evidence and ask whether this was indeed the case during Venezuela's 1989-1996 financial collapse. The answer we get in Table 10 is yes. The first column shows that the 1989-96 period is associated with an average decrease in manufacturing real value added growth of 5.4% per year or 36% in total (beyond what is predicted by mean reversion alone). The drop was not homogeneous across industries, however. Column 2 shows that the fall was increasing with the degree of external finance dependence, and very significantly so (see the coefficient for the interaction between the credit collapse period and the industry external finance dependence). The typical highly dependent industry saw its growth rate fall 4 percentage points faster a year than the typical less dependent one (-6.8% vs. -3.3%). In fact, for those industries with lower than median dependence, the credit crunch was not even associated with statistically lower growth rates. Assuming that less dependent industries are simply unaffected by credit crunches, and given that these industries represented about 60% of non-oil manufacturing, these results suggest

that the fall in manufacturing growth could have been cut in more than half had the collapse in credit been avoided.

Notice that here we are explicitly controlling for systematic differences in the growth rate across sectors in the Venezuelan data with the inclusion of the industry's external finance dependence figure. Columns two through four check that the result is not driven by the omission of either industry characteristics or what was happening each particular year by adding to the specification industry fixed effects, year fixed effects, and then both at the same time. In all cases the financial dependence collapse interaction enters negatively and in a statistically significant way, while the coefficient is remarkably similar.

It could still be other omitted industry characteristics correlated with external finance dependence and that happen to be affected differently by crises that are driving the results. To check this, we added three industry characteristics that might matter in explaining growth in times of economic distress: the degree of tradability of the good, and whether it is durable or an investment good<sup>10</sup>. The interaction for the degree of tradability enters significantly positive. This is consistent with the fact that, despite the falling trend, the 1989-96 period was one of high real exchange rate by historical standards implying higher relative prices for tradable producers (more precisely, for those that are *more* tradable since all industries belong to the manufacturing sector which is quite tradable as a whole). Whether an industry produced either a durable or investment good seemed not to matter much during the collapse in credit.

The credit collapse indeed affected more strongly those industries that are supposed to be more reliant on bank credit for financing investment. This -together with the fact that credit appears to Granger-cause the growth of the highly dependent aggregate during this

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<sup>10</sup> All these variables are computed using U.S. data. Details on the exact definitions can be found on Braun and Larrain (2005).

period- hints at a supply-side explanation, a real effect of the intermediation crunch. It also suggests that misallocation of resources across sectors is a critical piece of the mechanism through which finance affects growth. Wurgler (2000) provides some evidence on the issue by showing that in less developed settings investment is less responsive to changes in growth opportunities. He measures this by computing a value-added growth elasticity of investment growth using pooled industry data for a decade in each of a large number of countries. Less financially developed countries exhibit lower elasticities, meaning that they do not rapidly cut investment in declining sectors and increase it in booming ones. This is taken as evidence of the important allocation role of capital markets.

In what follows we check whether the quality of allocation of resources declined following the credit crunch relative to its level when credit was plentiful, as Wurgler's cross-country analysis would imply. We consider the value-added elasticities of investment growth (Table 11) and employment growth (Table 12). The first column in each table shows that investment and employment growth are both significantly sensitive to growth opportunities when measured with real value-added growth. They also show that the sensitivity declined after the credit collapse, especially in the case of employment growth (not significantly so for investment).

The third columns add the interaction with the degree of external finance dependence, showing that it is for the set of highly dependent ones that the quality of allocation drops the most. These regressions rely on the pooled data. In the next three columns we explore whether the misallocation comes primarily from not directing the resources towards the right industries in a given moment of time, or from not directing the resources to a particular industry in the precise moment, or from both. To do this we add, in turn, industry and country fixed effects. By comparing the coefficients across these columns we obtain that in the case



of investment, most of the effect comes from cross-industry misallocation, while for employment the problem resides in not hiring when it seems appropriate.

### ***Listed-Firms Evidence***

This section makes use of Worldscope data on a large number of listed firms around the world from the early 1980s through 2003. We are interested in determining whether large, listed firms were also affected by the credit collapse or whether given their size and preferred access to external funds they managed to escape from it. We focus on manufacturing for which data is more comparable across firms and aggregate the firm-level data into ISIC-3 categories to avoid having the results depending too much on one particular firm.

The first column in Table 13 contains the implementation of Fazzari et al (1988)'s specification for the 52 countries in our sample. Consistent with their results, while Tobin's Q (the ratio of market to book value of firms) is not particularly useful in explaining investment, the availability of internal funds (net income over assets) is strongly positively correlated with it. The second column shows that the importance of growth opportunities increases strongly across countries with financial development, with the level of private credit over GDP in particular. The role of internal funds declines with financial development, although not significantly so.

These results would lead us to expect that given the extremely low level of Venezuela's financial development, investment there would be much more conditioned by the availability of internal funds than in other countries. As the third column shows, this is indeed the case. The coefficient of the interaction between internal funds available and the Venezuela dummy is not only highly significant but also extremely large, suggesting that firms there are about 5 times more dependent on internal funds when investing than in the average country. This goes far beyond what one would expect given the relation in the

previous column. This would be consistent with the fact that, as we saw in the first part, the financial system in Venezuela is not only small but also not particularly efficient given its small size. The interaction with Tobin's Q is positive but not significant.

Is this higher dependence of investment on the availability of internal funds related to the 1989-1996 credit collapse? The next three columns of the table ask precisely this by focusing on the time series variation of the data within Venezuela. We add to the basic specification the interaction with a time dummy that takes a value of 1 if the data correspond to the years between 1989 and 1996, and zero otherwise. Since the data for Venezuela spans 1988 through 2001, we are basically asking whether the dependence was higher during the credit collapse when compared to the post-collapse recovery period. That was indeed the case: the dependence on internal funds almost doubled during the collapse period, while the effect of growth opportunities went from positive to essentially zero. This dependence on internal cash has continued to be quite large reflecting the fact that although private credit recovered somewhat in the late 1990s and early 2000s, it never got back to the pre-collapse levels nor achieved levels more consistent with the size of the economy.

By adding industry and year fixed effects we can assess whether this effect is explained with the inability to invest unless one has internal funds at the right time or in the right sector. The results suggest that it is a combination of both. If anything, however, it appears that the collapse impacted relatively more strongly the cross-industry allocation of funds (column 5) than the intertemporal one (column 6).

The results for listed firms are very consistent with those found for the entire economy in the previous sections. This suggests that the strong, negative effects of the credit crunch were not limited to small firms and perhaps relatively less productive, younger, and more fragile firms, but extended through the economy and eventually reached even the largest and strongest ones. Moreover, while things got eventually better in the late 1990s, the

investment of listed firms in Venezuela remains much more dependent on the availability of internal funds and less dependent on future growth opportunities than in other countries.

## **5. Conclusions**

A number of important facts are clearly present in all the different datasets we used to assess both Venezuela's actual level of financial development and its evolution through time. Venezuela's financial sector is massively underdeveloped. This is the case when compared to any benchmark: it is very small relative to the economy in terms of both banking, and equity and bond markets -even after considering its oil-dependency and being part of Latin America-. Not only that, but is also less efficient than one would expect given its size. Things were not the same always, however. Venezuela had a financial market that was consistent with its economic size until the late 1980s. A series of crunches -most likely originated in deep reversals in fiscal accounts that contributed to high real interest rates- configured a collapse between 1989 and 1996 from which bank credit to the private sector never really recovered. As of the mid 2000s, the size of the financial sector in Venezuela is between 4 and 6 times smaller than one would expect. An important part of the story is the large fall in the ratio of bank credit to the private sector to bank assets. If this ratio would just go back to its pre-collapse level (or were more similar to other countries') private credit would almost double.

A collapse of this magnitude was bound to have an important effect on the real economy. Survey evidence indicates that, although managers do not perceive lack of financing as the most important constraint to doing business, they behave in a way quite consistent with the issue being a mayor problem. Not only they rely much more on internal and family funds for financing, but they are not particularly able to exploit their growth

opportunities. Access to (the limited) bank debt appears to be as important as the existence of growth opportunities when investing, hiring, and exporting, even after controlling for other perceived constraints to doing business. Small, local, and young firms appear to be the most affected.

These perceptions are confirmed in the aggregate data for the economy. The evolution of private credit -its collapse in particular- helps predict that of the tradable sector that is most dependent on external funds and the one of the non-tradable sector, which is typically less able to obtain financing overseas. Our panel of manufacturing industries indicates that the collapse of credit indeed affected more strongly those industries that are supposed to be more reliant on bank credit for financing investment. The quality of allocation of both employment and investment decreased significantly for these same sectors following the financial crisis. Finally, not even the largest firms in the country (the listed ones) could escape the effects of the collapse: these saw their dependence on the availability of internal funds for investing increase significantly. The cross-sectional allocation of resources in the economy appears to be in all cases the most affected. Not only it appears that the financial system ceased channeling capital to the private sector, but also that the little amount they provided was not directed to the right borrowers.

The paper has documented a number of real effects of the financial collapse using quite diverse datasets. This is useful for two reasons. First, they provide a robustness to the analysis since the results do not seem to depend too much on the particular specification chosen nor on the data used. Second, the results turned out to be quite consistent, and the effects of the collapse to affect pretty much everyone in the economy.



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FIGURE 1: Banking Sector Size and Economic Development

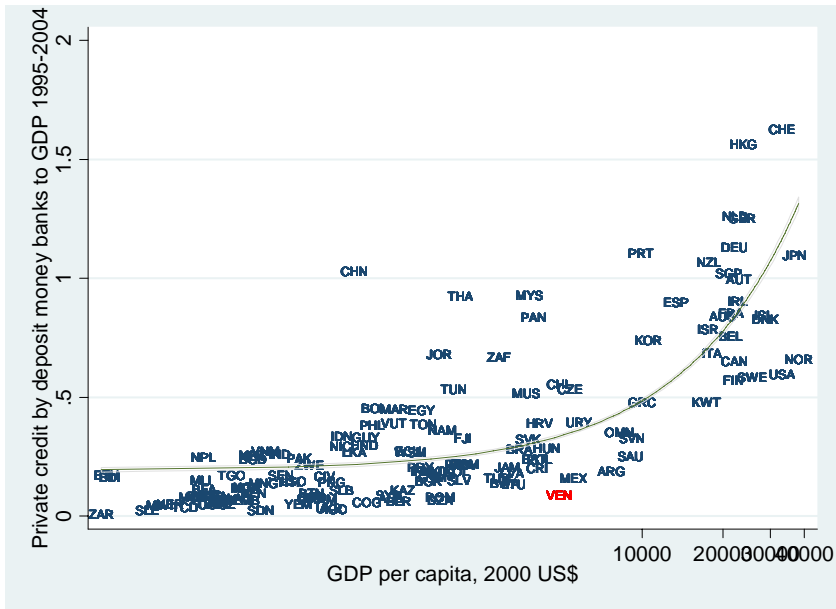


FIGURE 2: Stock Market Size and Economic Development

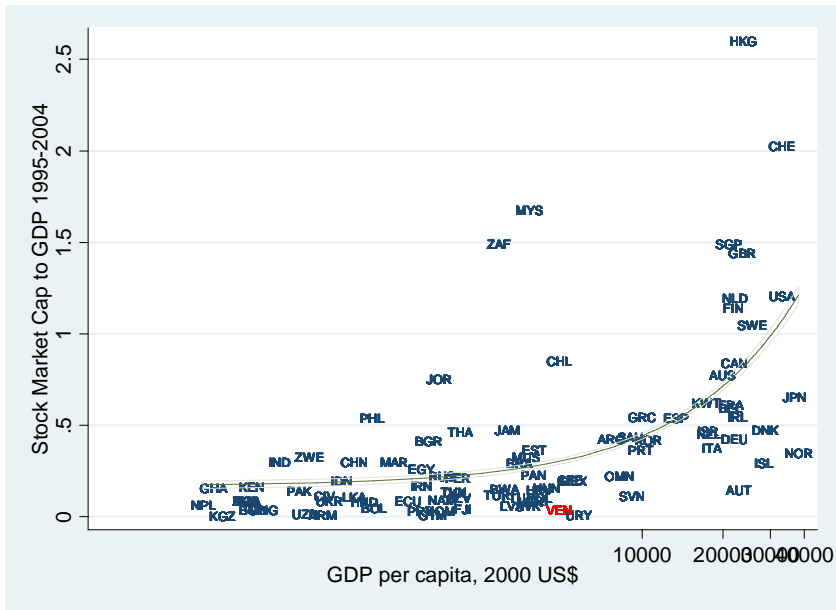




FIGURE 3: Banking Sector and Stock Market Size

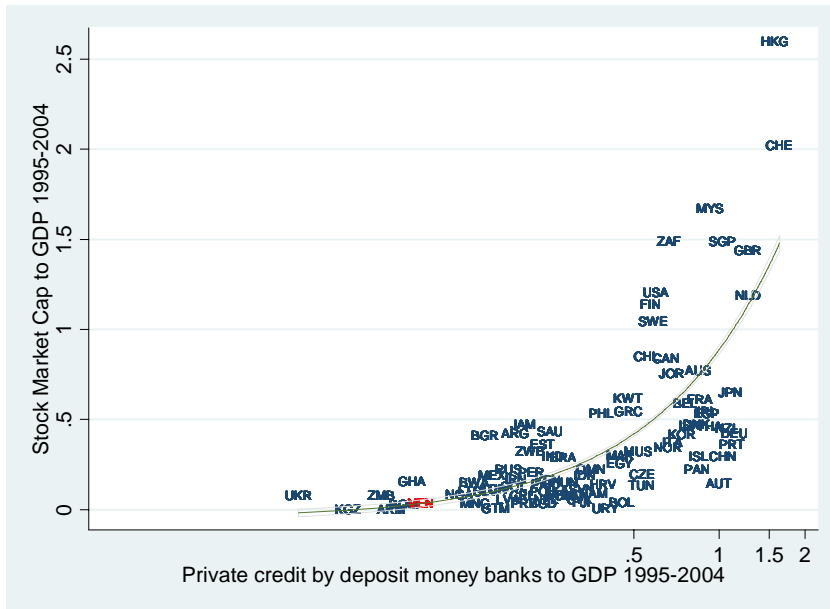


FIGURE 4: Banking Sector Size and Net Interest Margins

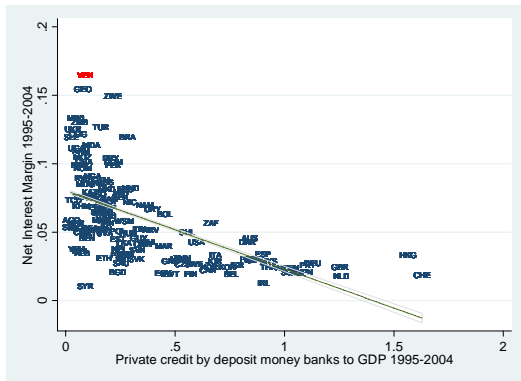


FIGURE 5a: Concentration

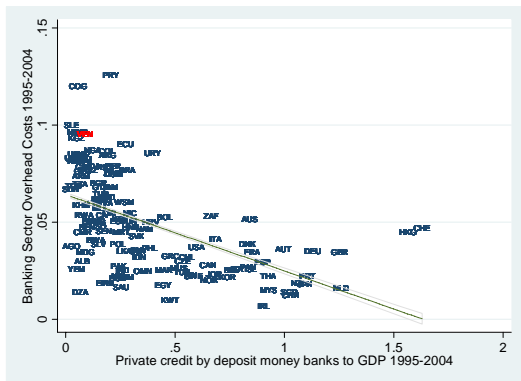


FIGURE 5b: Overhead Costs

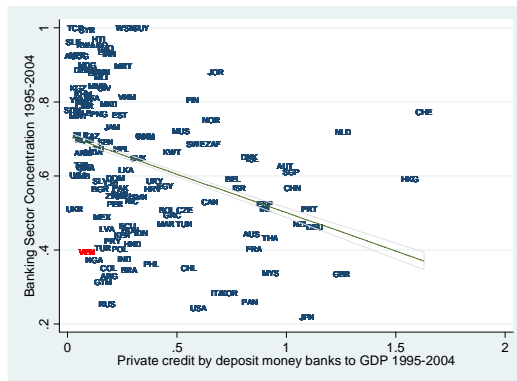


FIGURE 6: Stock market Size and Turnover

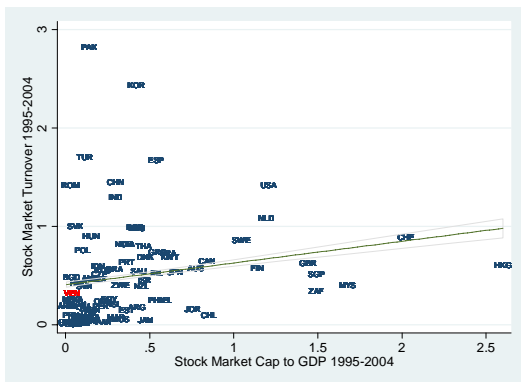


FIGURE 7a: Creditor's Rights

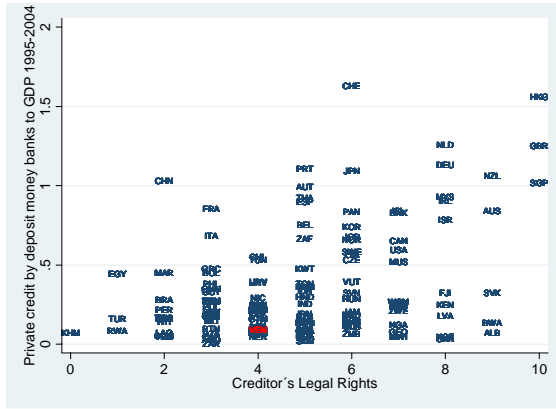


FIGURE 7b: Creditor's Information

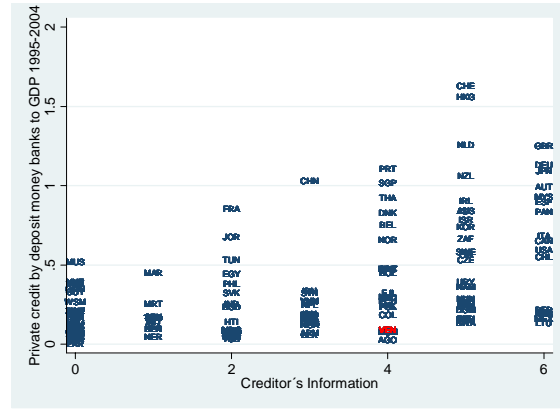


FIGURE 8a: Shareholder Protection

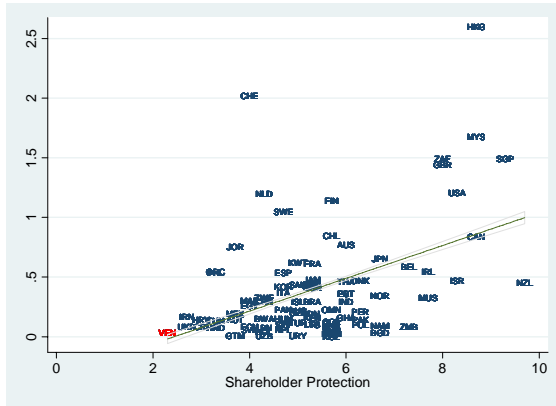


FIGURE 8b: Shareholder Disclosure

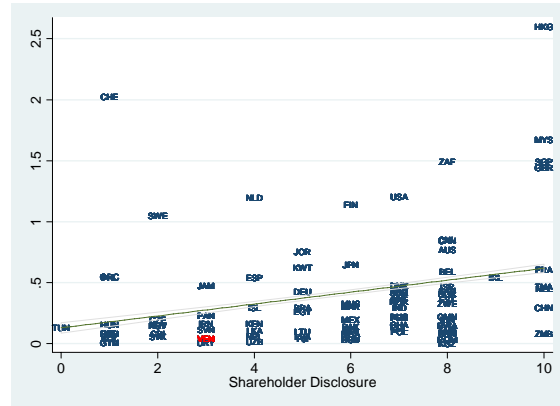


FIGURE 9: Financial Sector Policies in Venezuela: 1980-1997

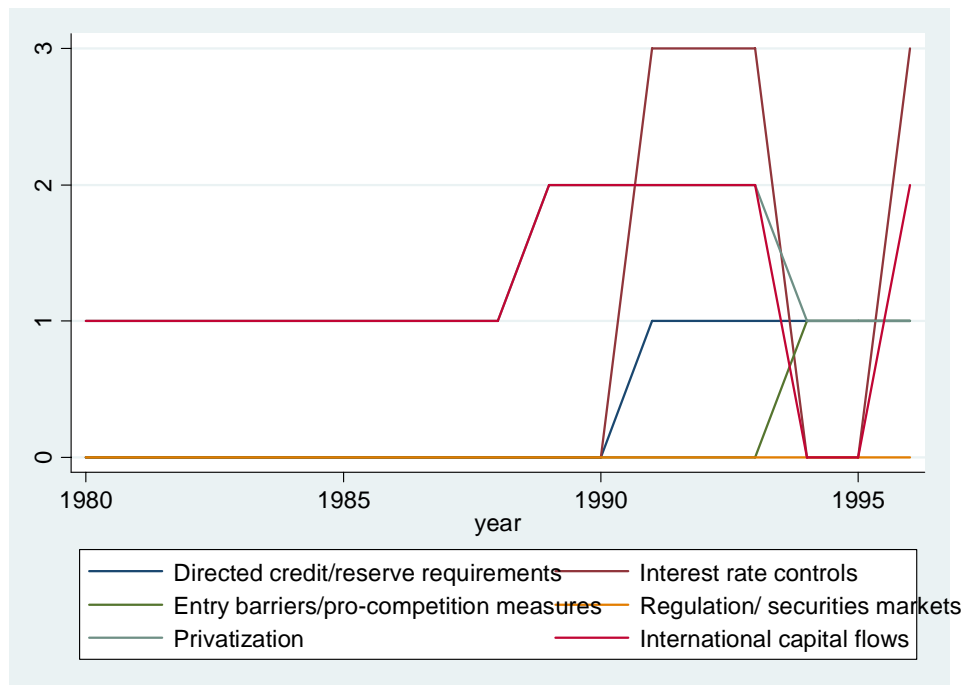


FIGURE 10: Persistence of Banking Sector Size

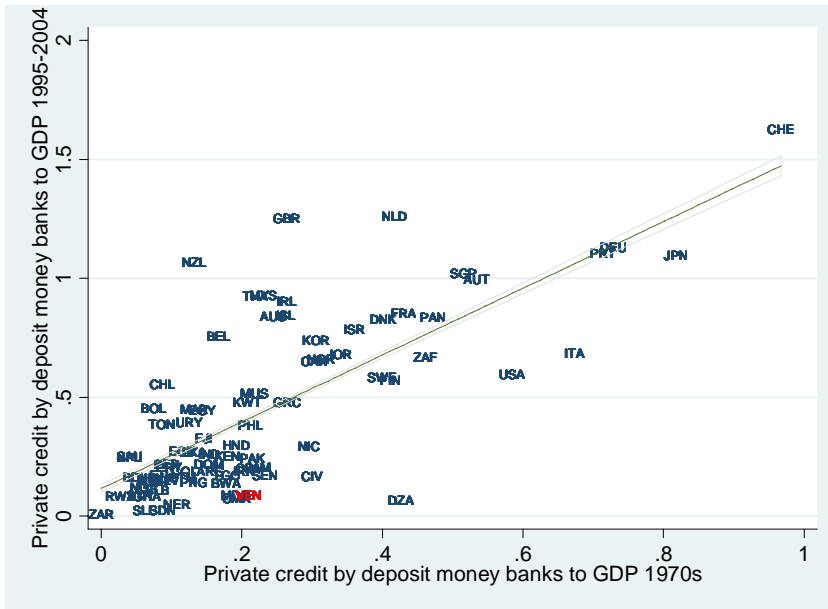


FIGURE 11: Persistence of Stock Market Size

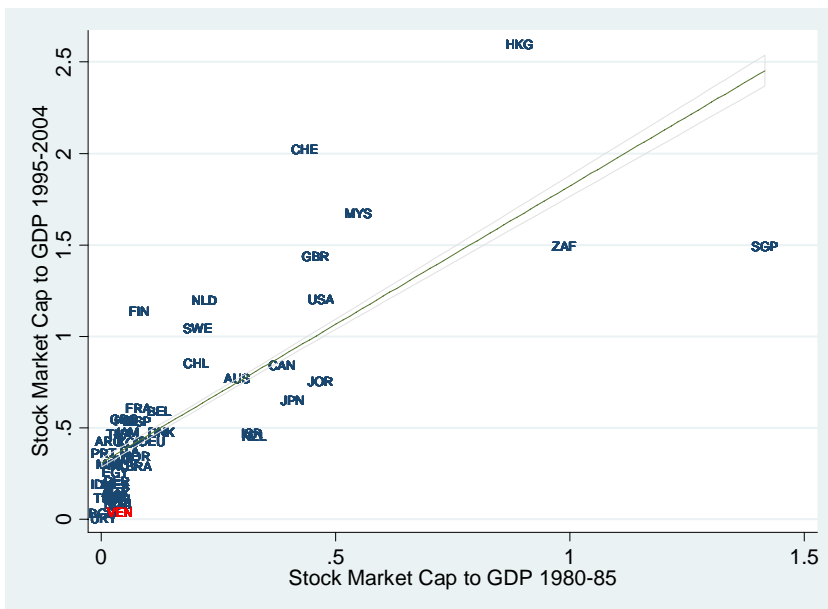


FIGURE 12: Evolution of Financial Development in Venezuela 1960-2004

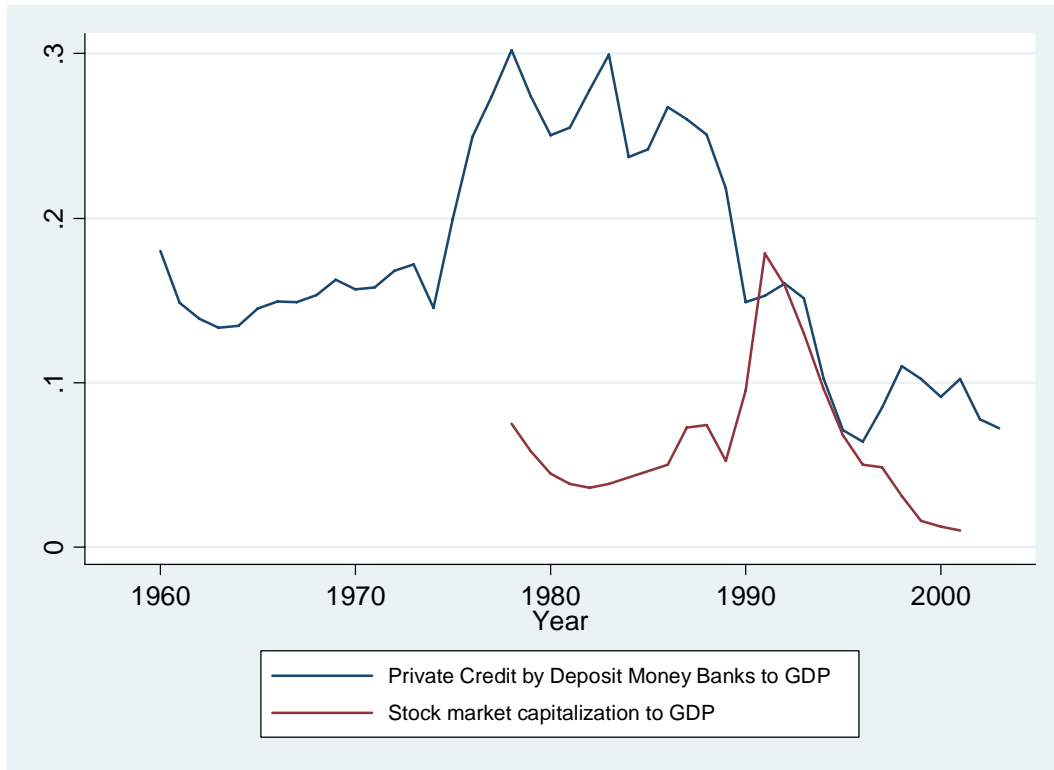


FIGURE 13: Private Credit and GDP

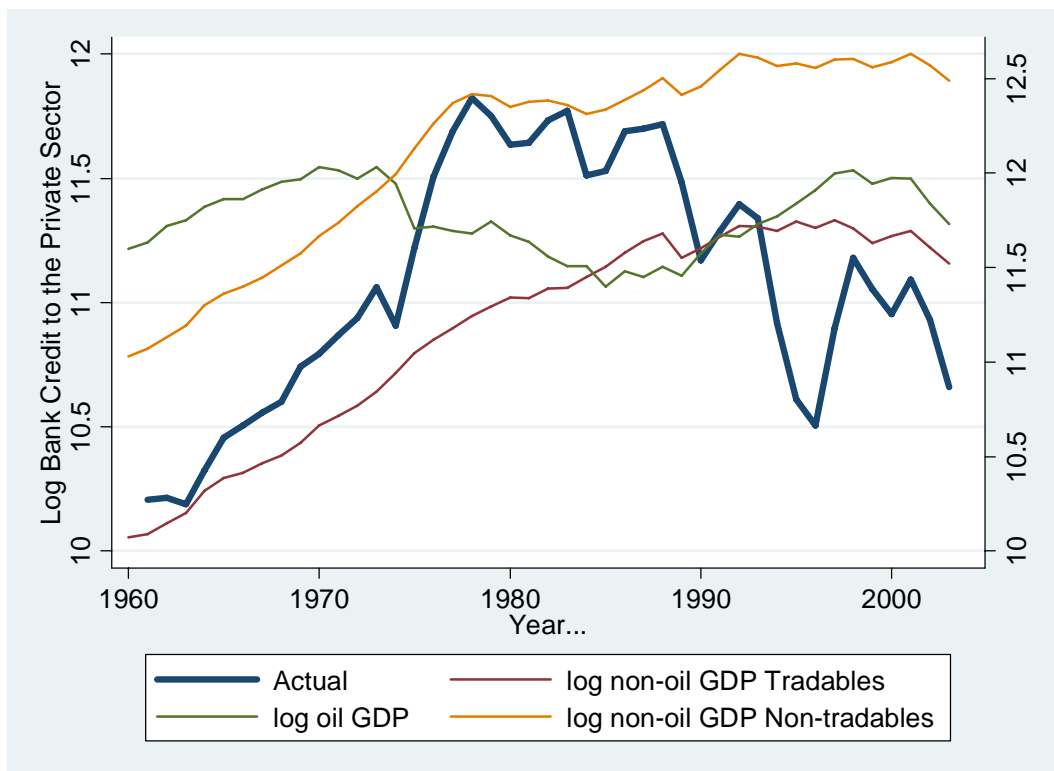


FIGURE 14: Relation between Private Credit and Non-Oil GDP

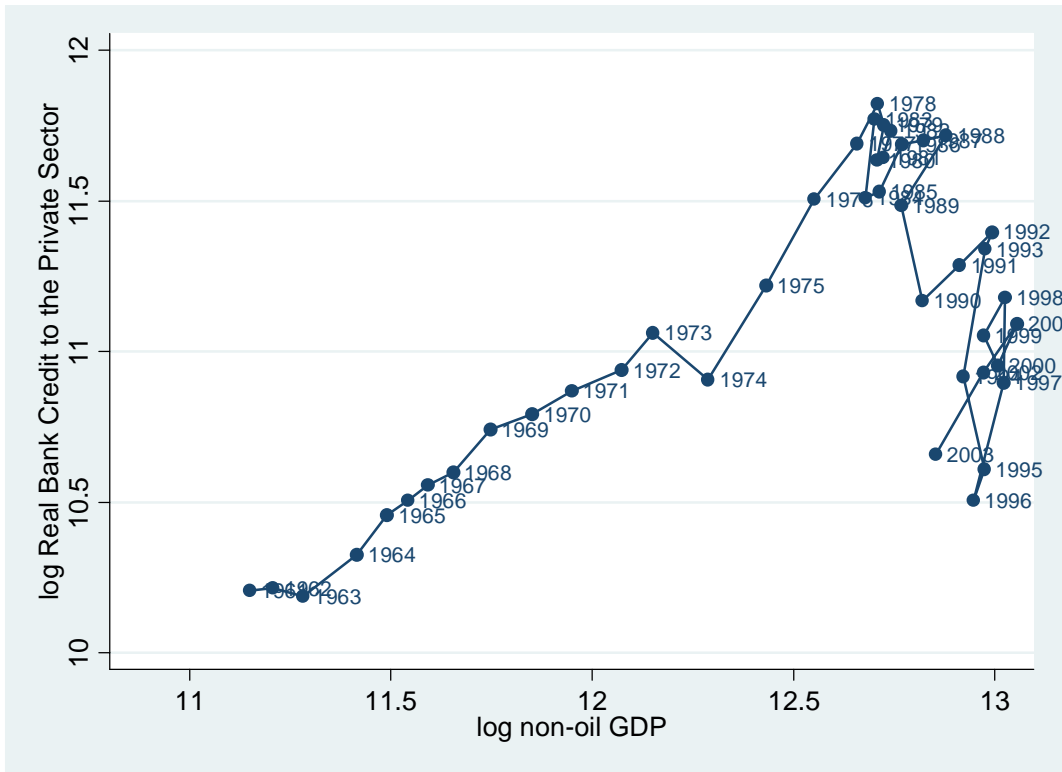


FIGURE 15: Private Credit: Venezuela vs. Oil Dependent and Latin American Countries

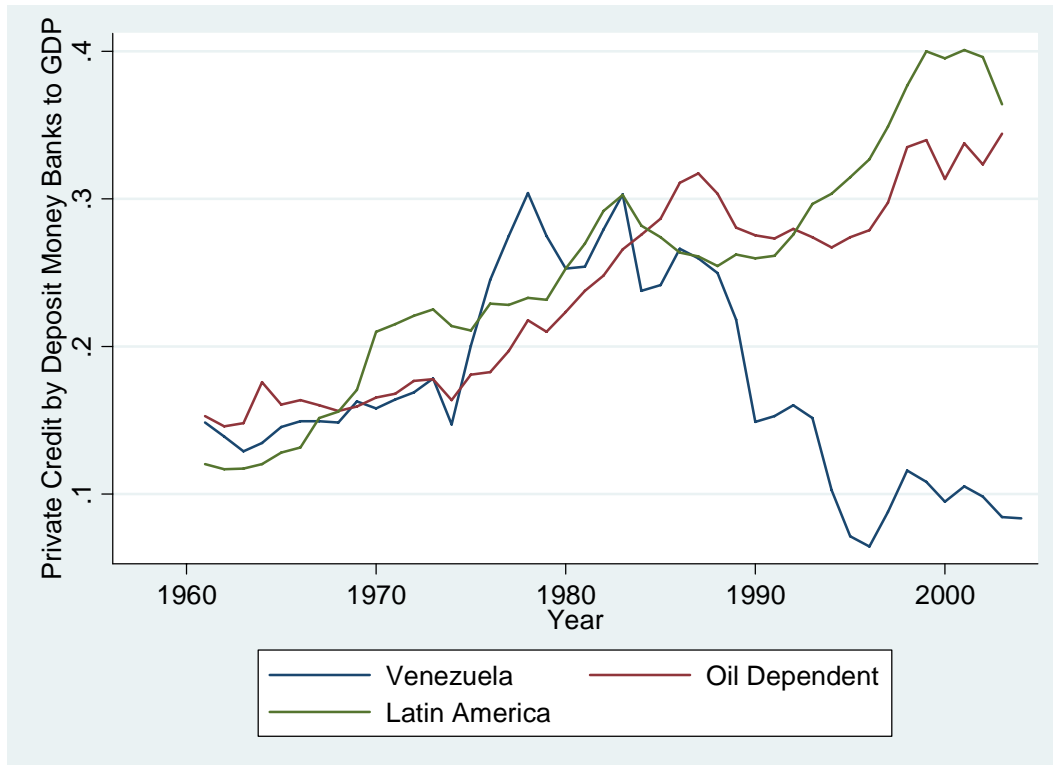


FIGURE 16: The size of the Credit Collapse (1)

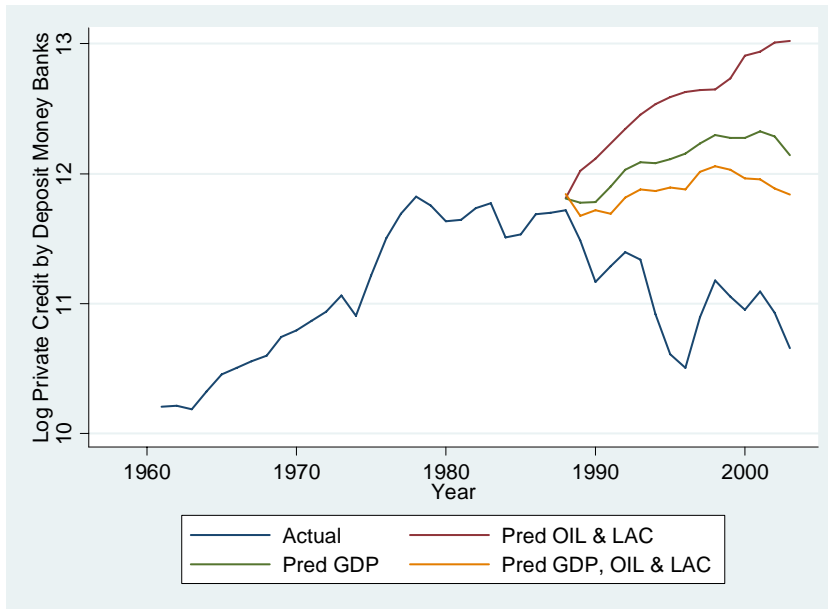


FIGURE 17: The size of the Credit Collapse (2)

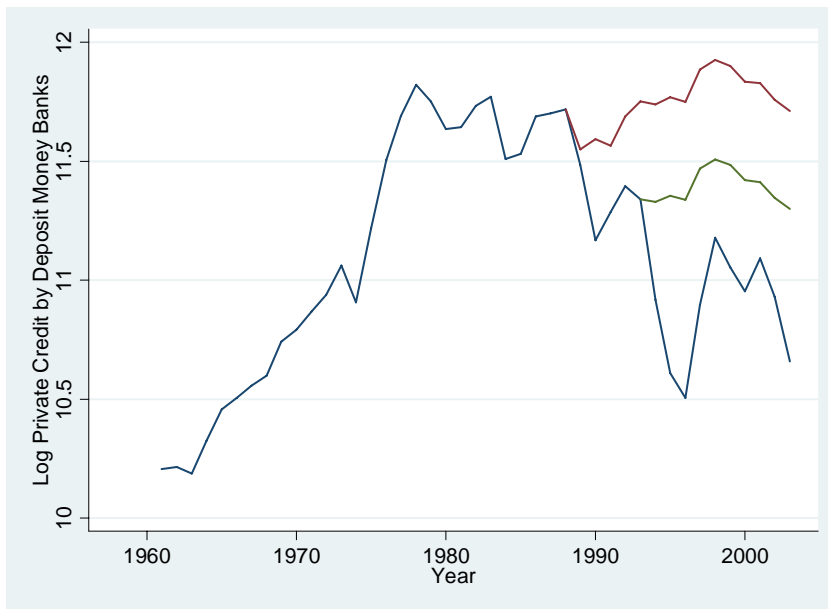


FIGURE 18: The Share of Private Credit in Bank Assets

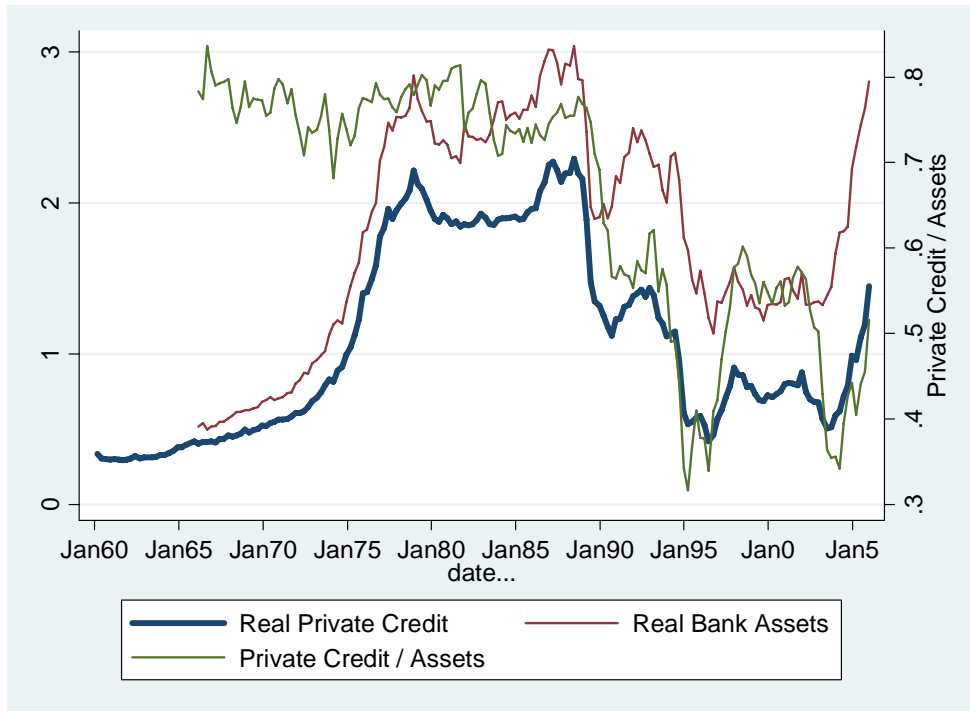


FIGURE 19: Uses of Bank Financing

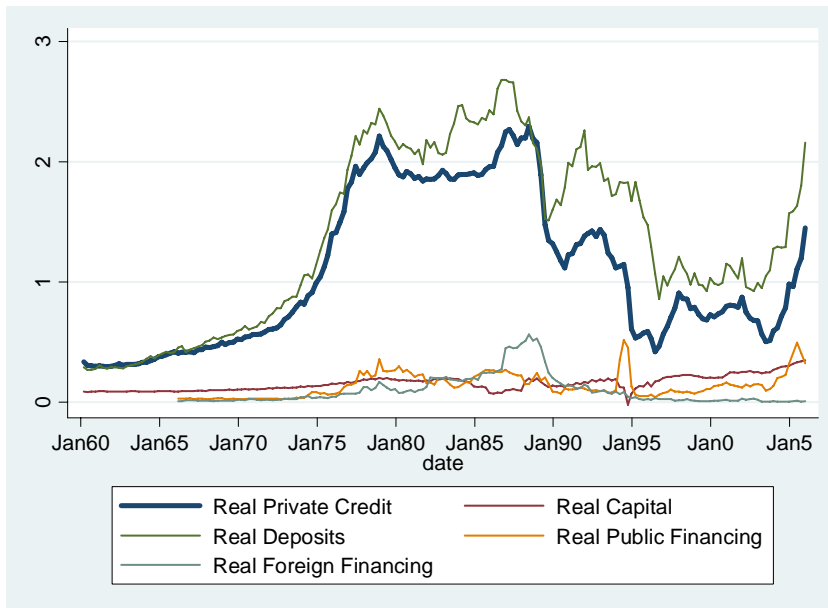




FIGURE 20: Reserves and Private Credit

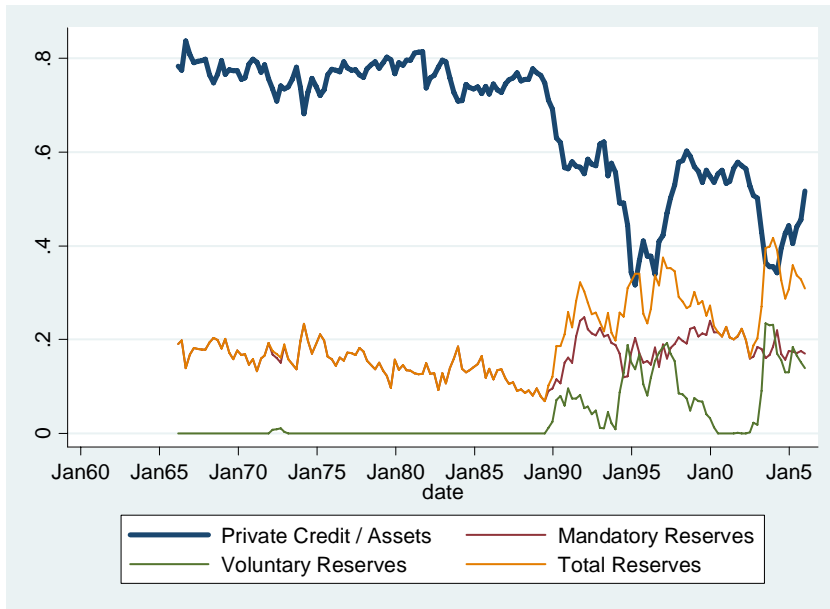


FIGURE 21: Interest Rates

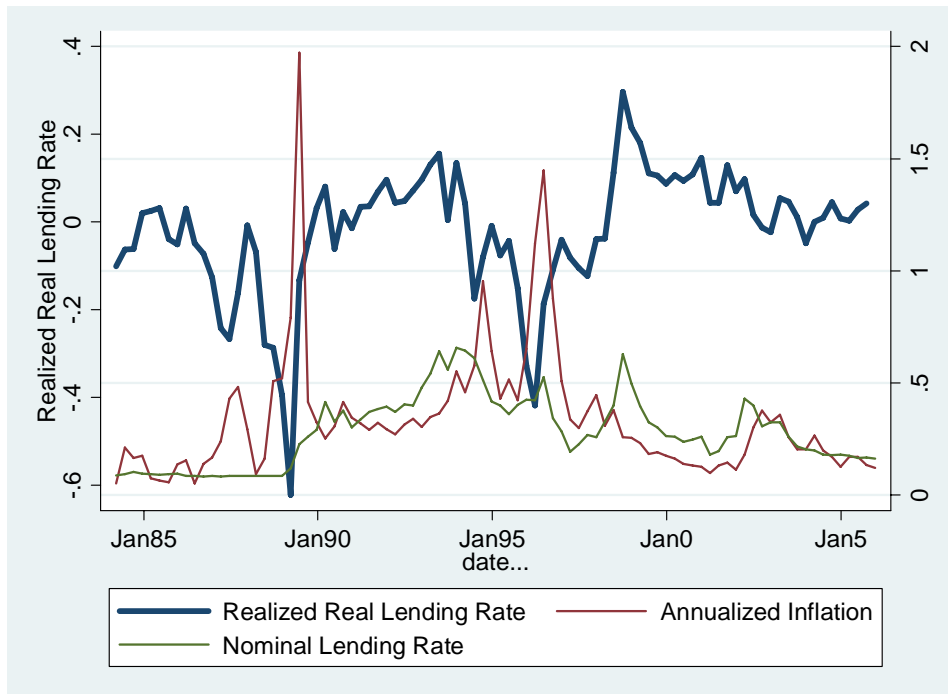


TABLE 1

**Private Bond Issuance 1995-2004**

Issuer's Country	All Markets		Local Market						
	Total Amount (million US\$)	# of Issues	Total Amount (million US\$)	Share of # Total	of # Issues	of Share of Total	of Principal	Mean Maturity	Share Maturity >5 years
Venezuela	2,830	74	1,111	39.3%	65	87.8%	17	1.9	1.5%
Bolivia	1,249	135	1,249	100.0%	135	100.0%	9	7.7	43.0%
Peru	4,954	397	4,754	96.0%	395	99.5%	12	4.8	22.0%
Whole Sample (45)	15,834,106	101,136	13,278,972	61.2%	88,301	71.6%	112	6.0	35.1%
Industrial (20)	15,302,326	92,659	12,998,860	67.6%	81,711	68.7%	198	7.3	46.3%
Developing (25)	471,654	7,536	245,671	56.2%	5,840	73.7%	45	5.0	26.7%
Latin America & Caribbean (14)	211,453	3,671	123,951	71.5%	3,086	91.3%	27	5.2	28.2%
Eastern Europe (3)	8,382	42	238	4.1%	6	16.9%	46	3.3	0.0%
East Asia & Pacific ex. Japan & Aus	267,914	3,978	124,076	44.4%	2,800	62.1%	69	5.2	27.4%

\*Source SDC Platinum

TABLE 2

**Banking Sector Indicators around the crises**

	Real Assets		Real Private Credit		Real Deposits		Private Credit / Assets
Pre-1974	0.67		0.51		0.58		0.77
1977-1987	2.58		1.97		2.29		0.76
1989 Pre (1988)	2.90		2.21		2.24		0.76
Trough (Sep-90)	1.98	-32%	1.12	-49%	1.12	-50%	0.57
Post (1992)	2.41	-17%	1.41	-36%	1.96	-12%	0.59
1994/95 Pre (1993/94)	2.18		1.15		1.78		0.53
Trough (Jun-96)	1.24	-43%	0.42	-63%	0.42	-76%	0.34
Post (1997)	1.45	-34%	0.76	-34%	1.08	-39%	0.52
1998-2004	1.46		0.73		1.08		0.51
Dec-2005	2.81		1.45		2.16		0.52

\*Source: Author's calculations based on International Financial Statistics.

TABLE 3

**Granger-causality Tests (p-values)**

Variable	Private Credit does not G-cause Variable			Variable does not G-cause Private Credit		
	1963-2003	1963-1988	1989-2003	1963-2003	1963-1988	1989-2003
Total GDP	0.423	<b>0.017</b>	0.197	0.123	0.105	0.250
Non-oil GDP	<b>0.048</b>	<b>0.045</b>	0.362	<b>0.000</b>	<b>0.000</b>	0.149
Non-oil Non-Tradable GDP	<b>0.082</b>	<b>0.001</b>	0.502	<b>0.001</b>	<b>0.000</b>	<b>0.046</b>
Non-oil Tradable GDP	0.204	0.924	0.152	<b>0.027</b>	<b>0.010</b>	<b>0.015</b>
Manufacturing VA High Ext. Fin. Dep.	0.160	0.333	<b>0.030</b>	<b>0.087</b>	<b>0.002</b>	0.539
Manufacturing VA Low Ext. Fin. Dep.	0.531	0.641	0.394	<b>0.003</b>	0.238	<b>0.016</b>

TABLE 4: Mayor Constraints for Doing Business

**Ranking of Mayor Constraints for Doing Business according to Managers**

	Venezuela	All Countries	Low- Middle Income	Latin America	OECD	
Financing	8	8	3	4	5	2
Infrastructure	9	9	9	9	9	7
Political Instability	1	1	4	3	1	3
Inflation	2	2	2	2	4	4
Exchange Rate	4	4	5	5	6	5
Street Crime	3	3	7	6	3	6
Organized Crime	7	7	8	8	8	9
Taxes and Regulations	5	5	1	1	2	1
Corruption	6	6	6	7	7	8

\*Source: World Business Survey 2005.

TABLE 5: Perceptions on Financing Constraints

**% of Managers that respond Financing is a Mayor Constraint to Doing Business**

	Venezuela	All Countries	Low- Middle Income	Latin America	OECD
Financing	31.3%	36.0%	40.0%	38.8%	15.4%

\*Source: World Business Survey 2005.

TABLE 6: Financing Sources of Firms

**Financing Sources according to Managers (% of total)**

	Venezuela	All Countries	Low- Middle Income	Latin America	OECD
Internal/Family	60.1%	55.7%	64.1%	47.5%	41.4%
Bank	15.5%	17.7%	16.6%	25.9%	18.4%
Trade Credit/Leasing	7.2%	8.6%	9.3%	11.5%	8.1%
Equity	2.6%	4.7%	2.7%	3.2%	8.5%

\*Source: World Business Survey 2005.

TABLE 7: Financial Constraints and Real Outcomes: Survey Evidence

<b>Dependent Variable:</b>	<b>Expected Investment Growth</b>	<b>Expected Employment Growth</b>	<b>Expected Exports Growth</b>
Expected increase on Debt	0.202*** 0.0745	0.345*** 0.087	0.290*** 0.100
Expected Increase on Sales	0.352*** 0.114	0.437 0.134	0.321** 0.153
Average Importance of non-financial constraints	-0.146 0.106	-0.283*** 0.124	-0.051 0.141
# Obs	90	90	90
R2	0.19	0.29	0.15

\* 10%, \*\*5%, \*\*\*1%. Constant included but not reported.

TABLE 8: Financial Constraints and Real Outcomes: Survey Evidence –Heterogeneity across firms

<b>Dependent Variable: Expected Future Investment Growth</b>						
	<b>Small</b>	<b>Large</b>	<b>Local</b>	<b>Foreign</b>	<b>Young</b>	<b>Old</b>
Future Expected Sales Growth	0.271 0.203	0.397*** 0.147	0.316** 0.149	0.598*** 0.183	-0.072 0.175	0.612*** 0.154
Past Sales Growth	0.368 0.228	-0.126 0.185	0.040 0.165	-0.034 0.303	0.251 0.171	-0.194 0.210
Average Importance of non-financial constraints	0.095 0.248	-0.139 .1301	-0.190 0.133	0.097 0.202	-0.247 0.165	-0.086 0.146
# Obs	32	58	67	23	44	46
R2	0.16	0.14	0.09	0.36	0.10	0.28

\* 10%, \*\*5%, \*\*\*1%. Constant included but not reported.

**Tests (p-value)**

H0: b_futuresalesgr=b_pastsalesgr	0.773	0.034	0.245	0.086	0.207	0.006
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TABLE 9: Industry External Finance Dependence Index

<b>Industry</b>	<b>External Finance Dependenc</b>
Beverages	0.010
Fabricated metal products	0.201
Food products	0.097
Footwear, except rubber or plastic	-0.169
Furniture, except metal	0.198
Glass and products	0.297
Industrial chemicals	0.161
Iron and steel	0.037
Leather products	-0.089
Machinery, electric	0.515
Machinery, except electrical	0.300
Non-ferrous metals	0.100
Other chemicals	0.073
Other manufactured products	0.296
Other non-metallic mineral products	0.076
Paper and products	0.085
Plastic products	1.140
Pottery, china, earthenware	-0.298
Printing and publishing	0.097
Professional & scientific equipment	0.681
Rubber products	0.150
Textiles	0.180
Tobacco	-0.288
Transport equipment	0.267
Wearing apparel, except footwear	0.030
Wood products, except furniture	0.282

TABLE 10: Financial Constraints and Growth: Industry Panel Evidence

**Dependent Variable: Industry Real Value Added Growth**

Share in Manuf Value Added <sub>t-1</sub>	-0.709**	-0.620*	-3.975***	-0.574**	-4.148**	-4.647***
	0.331	0.332	0.874	0.283	0.760	0.800
Industry External Finance Dependence		0.104***		0.109***		
		0.039		0.033		
Private Credit Collapse period (1989-96)	-0.054**	-0.025	-0.033			
	0.021	0.024	0.024			
<b>Industry External Finance Dep X Priv Credit Collapse period</b>		<b>-0.164**</b>	<b>-0.153**</b>	<b>-0.166***</b>	<b>-0.155**</b>	<b>-0.174**</b>
		0.074	0.074	0.063	0.062	0.071
Industry Tradeability X Priv Credit Collapse period						0.181**
						0.081
Industry Durable Good X Priv Credit Collapse period						0.007
						0.057
Industry Investment Good X Priv Credit Collapse period						-0.008
						0.098
# Obs	777	777	777	777	777	746
R2	0.01	0.02	0.07	0.32	0.40	0.37
Industry FE	No	No	Yes	No	Yes	Yes
Year FE	No	No	No	Yes	Yes	Yes

\* 10%, \*\*5%, \*\*\*1%. Constant included but not reported.

TABLE 11: Financial Constraints and Investment: Industry Panel Evidence

**Dependent Variable: Industry Real Investment Growth**

Real Value Added Growth	0.691**	0.661***	0.421	0.425	0.523	0.524
	0.318	0.163	0.401	0.414	0.362	0.375
Industry External Finance Dependence		-0.011	0.017		0.028	
		0.144	0.201		0.172	
Low Private Credit Period (1989-1998)	0.039		0.064	0.065		
	0.083		0.097	0.099		
Real Value Added Growth X Industry External Finance Dep		-0.429	1.193	1.142	0.896	0.848
		0.513	1.080	1.110	0.954	0.983
Low Priv Credit Period (1989-1998) X Industry External Finance Dep			-0.160	-0.167	-0.130	-0.135
			0.292	0.299	0.250	0.257
Real Value Added Growth X Low Priv Credit Period (1989-1998)	-0.095		0.281	0.279	-0.162	-0.174
	0.362		0.440	0.454	0.410	0.424
<b>Real Value Added Growth X Industry External Finance Dep X Low Priv Credit Period (1989-1998)</b>			<b>-2.250*</b>	<b>-2.258*</b>	<b>-1.444</b>	<b>-1.450</b>
			1.243	1.277	1.090	1.123
# Obs	488	488	488	488	488	488
R2	0.03	0.03	0.04	0.05	0.32	0.32
Industry FE	No	No	No	Yes	No	Yes
Year FE	No	No	No	No	Yes	Yes

\* 10%, \*\*5%, \*\*\*1%. Constant included but not reported.

TABLE 12: Financial Constraints and Employment: Industry Panel Evidence

**Dependent Variable: Employment Growth**

Real Value Added Growth	0.406*** 0.026	0.191*** 0.021	0.320*** 0.035	0.314*** 0.035	0.327*** 0.033	0.319*** 0.033
Industry External Finance Dependence		0.009 0.017	0.006 0.020		0.006 0.019	
Low Private Credit Period (1989-1998)	-0.037*** 0.010		-0.035*** 0.012	-0.035*** 0.012		
Real Value Added Growth X Industry External Finance Dep		0.314*** 0.054	0.265*** 0.074	0.257*** 0.076	0.266*** 0.067	0.255*** 0.069
Low Priv Credit Period (1989-1998) X Industry External Finance Dep			-0.015 0.037	-0.017 0.037	-0.027 0.032	-0.030 0.033
Real Value Added Growth X Low Priv Credit Period (1989-1998)	-0.306*** 0.036		-0.230*** 0.043	-0.221*** 0.044	-0.215*** 0.043	-0.206*** 0.045
<b>Real Value Added Growth X Industry External Finance Dep X Low Priv Credit Period (1989-</b>			<b>-0.176</b> 0.114	<b>-0.185</b> 0.115	<b>-0.274***</b> 0.104	<b>-0.283***</b> 0.105
# Obs	777	777	777	777	777	777
R2	0.28	0.23	0.29	0.30	0.45	0.46
Industry FE	No	No	No	Yes	No	Yes
Year FE	No	No	No	No	Yes	Yes

\* 10%, \*\*5%, \*\*\*1%. Constant included but not reported.

TABLE 13: Financial Constraints and Investment: Listed Firms Evidence

**Dependent Variable: Real Capital Expenditure Growth**

	Entire Sample		Venezuela			
Tobin's Q	0.001 0.001	-0.029*** 0.006	0.001 0.001	0.243 0.541	-0.081 0.561	-0.077 0.764
Net Income / Assets	0.714*** 0.204	0.748* 0.447	0.699*** 0.200	2.967*** 0.791	3.262* 1.541	5.542*** 1.757
Tobin's Q X Private Credit to GDP		0.160*** .0320				
Net Income / Assets X Private Credit to GDP		-0.109 .3914				
Tobin's Q X Venezuela			0.137 0.276			
Net Income / Assets X Venezuela			4.181*** 0.507			
Tobin's Q X Credit Collpase Period (1989-1996)				-0.240 0.615	0.690 0.581	-0.160 0.664
Net Income / Assets X Credit Collapse Period (1989-1996)				2.834*** 0.874	2.094 1.555	1.537 1.391
Credit Collapse Period (1989-1996)				0.189 0.596		0.162 0.626
# Obs	11655	11655	11655	52	52	52
R2	0.03	0.02	0.03	0.31	0.52	0.41
Country FE	Yes	Yes	Yes	No	No	No
Year FE	No	No	No	No	Yes	No
Industry FE	No	No	No	No	No	Yes

\* 10%, \*\*5%, \*\*\*1%. Constant included but not reported. Robust errors clustered at the year level.

CHAPTER 7:  
Much Higher Schooling, Much Lower Wages:  
Human Capital and Economic Collapse in Venezuela

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*Abstract.* Since schooling and human capital are so widely asserted to be an integral part of development and growth then perhaps the converse is true: a lack of human capital explains in some part the decline in Venezuela. This paper demonstrates this is not true: all of the evidence suggests the expansion of schooling should have led to higher output per worker and hence schooling only deepens the puzzle. First, by standard cross-national measures of schooling and schooling capital Venezuela's growth of SK was *more* rapid than the median country (and more rapid than the median of eight fast growing East Asian countries) so no part of the Venezuelan deficit in performance can be attributed to "slow" SK growth. Second, using labor force survey data on wages shows that if the wage/returns relationship had been stable over time then the additional levels of education of workers should have raised wages by 58 percent—while in fact they fell roughly in half. Even if one allows for a fall in the returns to education, the increase in wages "expected" from higher levels of schooling is 25 percent. Therefore, if one takes into account by how much higher output or wages should have been due to the increased levels of education then whatever it (or combinations of its) is that explains the output decline has to be even larger than the observed decline. There are however, two ways in which aspects of education contributed to the economic decline. One is that quality, as measured as the test scores on higher education entrance examinations deteriorated during the 1980s to 1990s by over 70 percent. Perhaps this quality deterioration played some role in the crisis. However, perhaps puzzlingly, the wage premia per year of schooling did not decline and so "schooling capital" measures are unaffected by the quality decline. Nevertheless, we attempt to assess the impact of this decline on the output decline. The final section attempts some more speculative ways in which education might be part of the collapse in spite of higher schooling and observed returns on schooling—if perhaps the allocation of education across sectors precluded a reallocation of output in response to the economic shock as "private" and "public" returns diverged. But while it is possible to construct coherent narratives of this type, it is difficult to construct solid evidence for this view.



## Introduction

The mantra of “human capital” is so deeply embedded in the growth and development literatures that one might get the impression that when we see low, or negative, growth rates over an extended period, as in the Venezuelan experience, that we should also expect stagnation in education outcomes. But Venezuela apparently hasn’t heard the conventional wisdom. Schooling capital (defined in a way consistent with aggregate output specifications) grew *faster* in Venezuela than in most other countries—in fact faster than in the median fast growing East Asian countries. Now perhaps this expansion of schooling did not contribute to output because private returns to schooling, measured as the Mincer regression wage increment, collapsed. But again, no. Even taking into account the decline in the wage premia observed using the labor force surveys over time, the increase in schooling reported should have led to wages 25 percent higher from 1975 to 2003—but in reality the average wage fell by 49 percent. While schooling quality as measured by test performance appears to have declined, this decline has not reduced the schooling premium. Even if each schooling year is producing fewer skills the demand for skills must be expanding sufficiently to maintain the observed wage premium, which is to schooling years, not measured skills.

All of this deepens the puzzle for others attempting to explain Venezuela’s decline. That is, one might set out to explain the large “raw” output and wage decline in Venezuela—but if one finds a factor capable of explaining the decline, not only does it have to explain why output and wages fell, it has to explain why output and wages fell *even as the expected output and wages were rising due to increased schooling*. That is, if

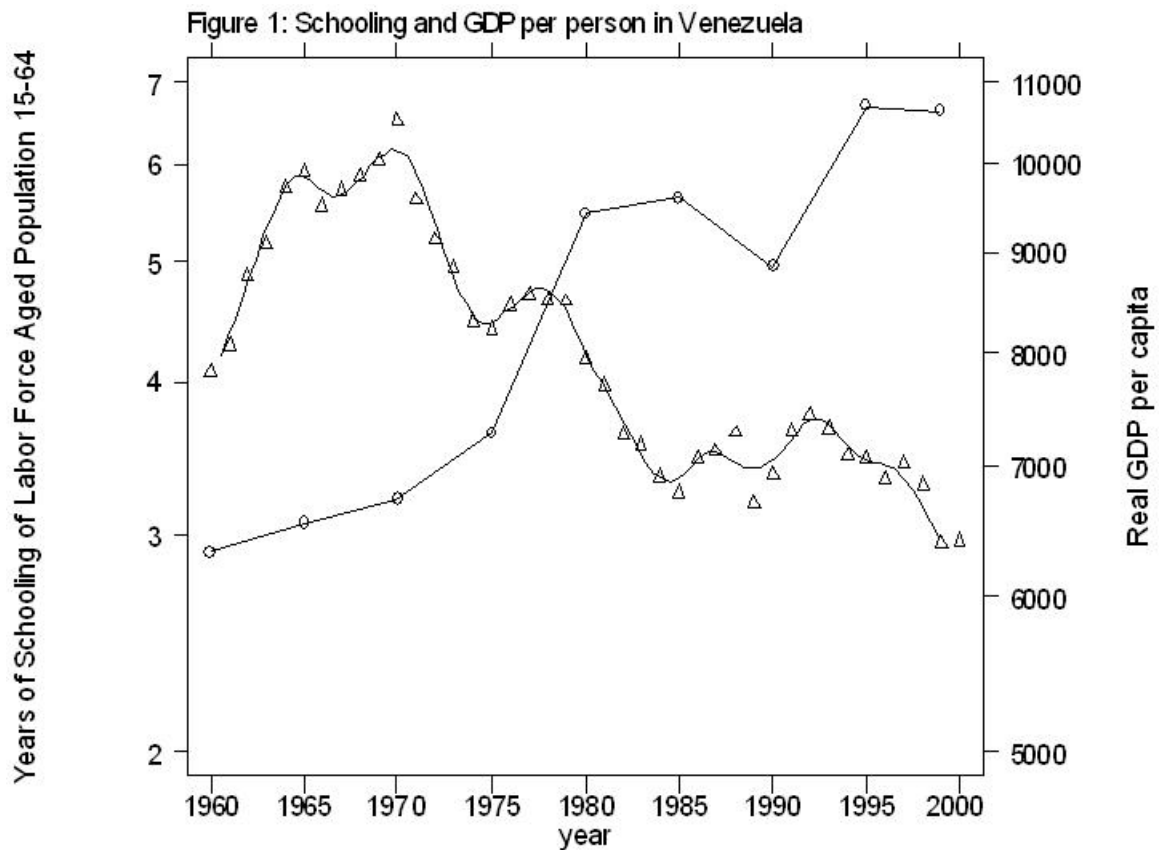
our task were to help explain the output decline in Venezuela, our examination of schooling and wages is of less than zero help.

There might however be some narrative (or even theory) that can reconcile the increase in schooling, the steady observed returns to schooling in the labor market and yet still attributes some part of the decline to schooling. In order for this to be true there would have to be a large negative externality to schooling. Perhaps education is allocated to rent seeking, and perhaps even a negative economic shock raises the returns to rent seeking (and so the gap between public and private returns) sufficiently that the subsequent increase in schooling actually contributes to output decline (even while the wage-schooling profile remains upward sloping). While it is possible to tell this story in a consistent and coherent way, we cannot find any empirical evidence for this view.

#### **I) Higher Schooling and Lower Output per Worker**

There are many who posit the accumulation of human capital as a major driving force behind economic growth. The converse therefore might also be expected, that a country with major decline in output per capita must have somehow failed to accumulate human capital. Or at the very least that small investments in schooling or accumulation of human capital helps explain the growth difference between Venezuela and other countries. But this is not the case. By the standard measures of the raw accumulation of schooling years Venezuela was not a laggard. Years of schooling grew rapidly during the entire period. Moreover, by nearly every measure of the growth of “schooling capital” Venezuela in fact outperformed other countries.

Figure 1 shows the evolution of the total years of schooling of the labor force aged population from the Barro-Lee data (right hand scale) and the evolution of real GDP per worker from the PWT6.1 data. Years of schooling more than doubled from 2.9 to 6.6<sup>1</sup>. Output per worker fell by 40 percent from a peak of P\$10,500 to P\$6,400 in 2000 (and this was before the more recent crises). Moreover, the 1970s, when the growth collapse began, was a period of very rapidly growing education of the labor force. Clearly nothing about the fall in output can be directly attributed to a decline in years of schooling.



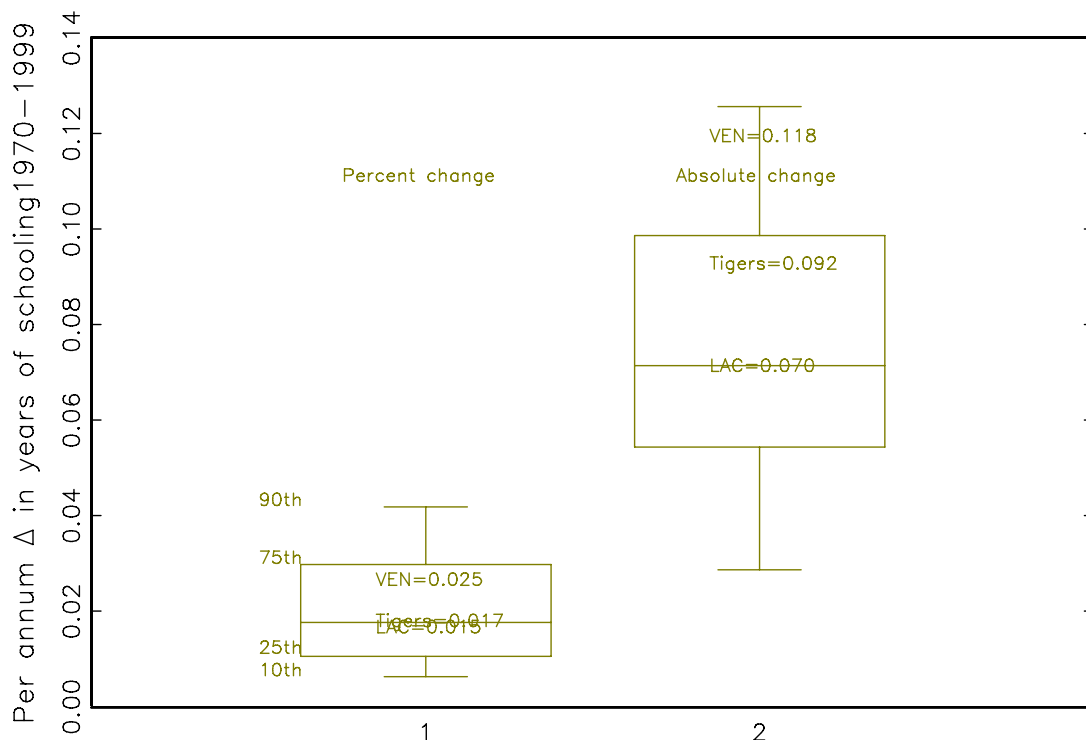
<sup>1</sup> This is not exactly the same increases one gets from the Venezuelan labor force data (see below) but to ensure cross-national consistency we use the Barro-Lee data in this section.

But perhaps even though schooling rose absolutely it rose at a slower pace than in other countries so that some part of the less rapid growth can be attributed to this factor. In fact, according to the standard, if flawed, Barro-Lee data set on the average years of schooling of the labor force aged (15-64) population, schooling expanded faster in Venezuela than the median country. Table 1 reports the per annum growth rates of schooling using the available data for countries between 1960 and 1999 in both percentage changes and the absolute (the reason for using both becomes clearer below). Venezuela grew at 2.1 ppa versus medians of 1.8 ppa for all countries, 1.5 ppa for LAC countries and only .9 ppa for the OECD. Using the absolute change in schooling relative Venezuela's growth was even more impressive adding tenth of a year of schooling each year, which is above the 75<sup>th</sup> percentile for all countries (see figure 2).

Table 1: Growth rates of years of schooling, in percentage and absolute per year, for Venezuela compared with the medians of other regions		
	Percentage change per year <sup>a</sup>	Absolute change per year <sup>b</sup>
Venezuela	0.021	0.096
Tigers 8	0.018	0.094
LAC	0.015	0.063
OECD (n=22)	0.009	0.070
ALL (n=105)	0.018	0.070
a) Calculated as compound annual growth rate from initial to final estimate, e.g. for Venezuela $(6.64/2.90)^{(1/39)}-1=.021$ b) Calculated as total difference divided by years (e.g. for Venezuela $(6.64-2.90)/39=.096$		

As suggested by figure 1, in which an acceleration of schooling growth is seen after 1970, if one takes just the post 1970 period, in which growth was negative, Venezuela's relative performance is even larger. From 1970 to 1999 schooling years grew at 2.5 ppa versus a median of 1.7 ppa in the eight rapidly growing East Asian economies.

Figure 2: Venezuela's growth in years of schooling is higher than than the typical country



*Growth Accounting.* Suppose we want to know how much the difference of Venezuela's growth performance differential versus some reference group (e.g. the average country, East Asian countries, etc.) was due to various factors. It is quite common to specify an empirical growth equation with allows a decomposition of growth differentials into known correlates and residual. An equation of the type:

$$(y_{t+n}^V - y_t^V) - ((y_{t+n}^R - y_t^R)) \equiv \alpha + \lambda(y_t^V - y_t^R) + \beta'(\mathbf{X}_{t,t}^V - \mathbf{X}_{t,t}^R) + (\varepsilon_{t+n,t}^V - \varepsilon_{t+n,t}^R)$$

Where V is Venezuela and R is a reference group, the X's are various growth correlates, the coefficients  $\alpha$ ,  $\lambda$ ,  $\beta$  (a K by 1 vector) are estimated or imputed and the  $\varepsilon$  is a residual term that balances the accounting identity<sup>2</sup>. In some of the standard growth

<sup>2</sup> Note that this description is both general, in allowing for any type of growth model (exogenous, endogenous) or set of X's (standard growth accounting into factor inputs, reduced form growth correlates)

decomposition approaches the term for “schooling” is treated in a fast and loose way that would give *ad hoc* a heart attack<sup>3</sup>.

If we think about a pure “factor accumulation” decomposition of growth into its proximate determinants of K, H, L and a residual there are two key and related steps. First, just as with physical capital one has to move from physical units to value units (e.g. tractors and factories to value of physical capital). Second, one has to specify how the appropriately specified term capturing schooling capital enters the production function.

Bils and Klenow (2000) present a general formulation in which the production function provides output as a function of units of effective labor,  $H(t)$ . The current stock of  $H(t)$  is the result of integrating the quality adjusted labor force over all ages:

$$2) \quad H(t) = \int_a^T h(a,t)L(a,t)da$$

Where the quality adjustment for a person of age  $a$  with schooling  $s$  (and hence experience of  $a-s$ ), is given by:

$$3) \quad h(a,t) = h(a+n)^\varphi e^{f(s)+g(a-s)}$$

The first term allows the quality of those aged  $a$  to depend on the quality of previous cohorts (those aged  $n$  years older than  $a$ ) as “parents/teachers” human capital contributes to accumulation of human capital. They also posit a general function,  $f(s)$ , to map from schooling to quality and they allow for experience effects  $g(a-s)$ .

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and is agnostic about whether this represents an valid causal model (note “correlates” not “determinants” and “coefficients” not “parameters”).

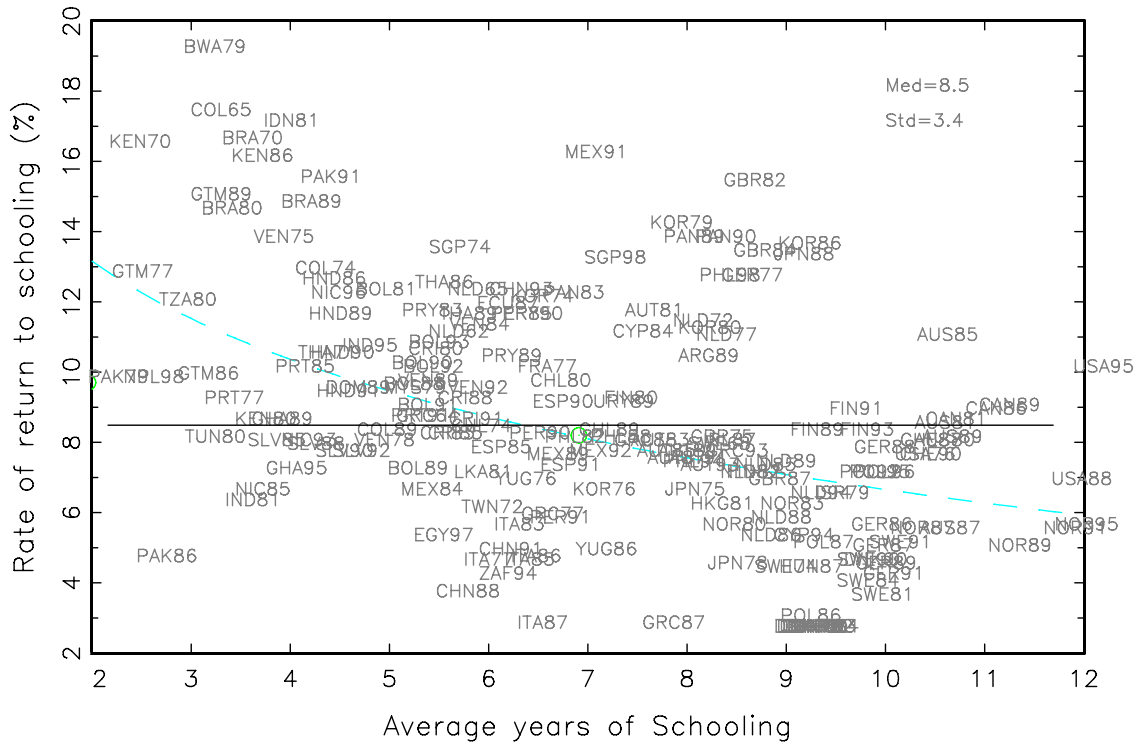
<sup>3</sup> For instance, these often use “enrollments” as the variable to capture the growth association of schooling—but with no very good rationale as “enrollments” are only weakly, or even negatively correlated, with the growth of schooling over any given period and it is not at all clear why a proxy of the flow rather than direct estimates of the change of the stock would be appropriate. Moreover, many follow the extraordinarily dubious practice of using only *secondary* enrollment, even though there is not empirical basis for this in observed labor market returns at the micro level, one supposes with the justification it “works” in the crudest data-mining sense of giving the “right” sign and a t-statistic above 2.

If  $f(s) = rs$  and  $g(a-s) = \gamma_1(a-s) + \gamma_2(a-s)^2$  and  $\varphi = 0$  then this is the exact aggregate equivalent of the standard Mincer wage equation assuming returns are constant across countries as  $f'(s) = r$ . If one also ignores the age terms then schooling capital per worker is<sup>4</sup>:

$$4) SK = e^{rs}$$

A major problem with that approach is that there does seem to be a very strong cross-sectional relationship between the level of S and r (see figure 3) which make assuming a constant r across all countries in aggregating schooling into schooling capital empirically suspect.

Figure 3: Estimates of the return to schooling and years of schooling (Observations identified with country code and year of study)



<sup>4</sup> This is the simple functional form that has been used (explicitly or implicitly) in much of the growth/output regression decompositions and growth accounting (Hall and Jones 1999, Woessmann 2002).

Bils and Klenow (2000) allow for a more general function form for  $f(s)$  which allows the returns to schooling to decline with additional schooling:  $f(s) = \frac{\theta}{1-\psi} s^{1-\psi}$  and hence  $f'(s) = \theta / s^\psi$  with  $\theta$  chosen so that the mean of  $\theta / s^\psi$  is equal to the mean Mincerian return across countries. The parameter  $\psi$  captures the inverse relationship between  $s$  and  $r$ . At higher (absolute value) level  $\psi$  each year of schooling contributes more to schooling capital at low levels of schooling when  $r$  is, on average, high than at high levels of schooling when  $r$  is, on average, low. Bils and Klenow (2000) and Pritchett (2007) estimate  $\psi$  empirically using collections of estimates of the wage premium and schooling and BK produce an estimate of .58 and Pritchett of .66. Given the precision of these estimates the value of  $\psi=0$  can be soundly rejected (see figure 3)<sup>5</sup>.

While the choice of  $\psi$  in constructing schooling capital (SK) from schooling (S) may seem a minor detail, Pritchett (2007) shows that the choice of  $\psi$  makes all the difference in empirical estimates of the association of the growth of schooling capital and growth in output per worker. All previous results (which tended to use simple expedients like either the absolute change in S or the percentage change in S) are parametrically encompassed by variations in  $\psi$ . Using a value of  $\psi$  of zero is similar to absolute S and its changes as a specification while higher values of  $\psi$  are correlated with percentage change measures. By varying  $\psi$  one can produce associations of output per worker growth and SK growth that are negative, zero, or positive. So all existing growth decompositions make dubious assumptions about the relationship between schooling and

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<sup>5</sup> The other parameter,  $\phi$ , which captures the possibly influence of previous stock on current S is assumed to be zero for reasons explained in Pritchett (2007).



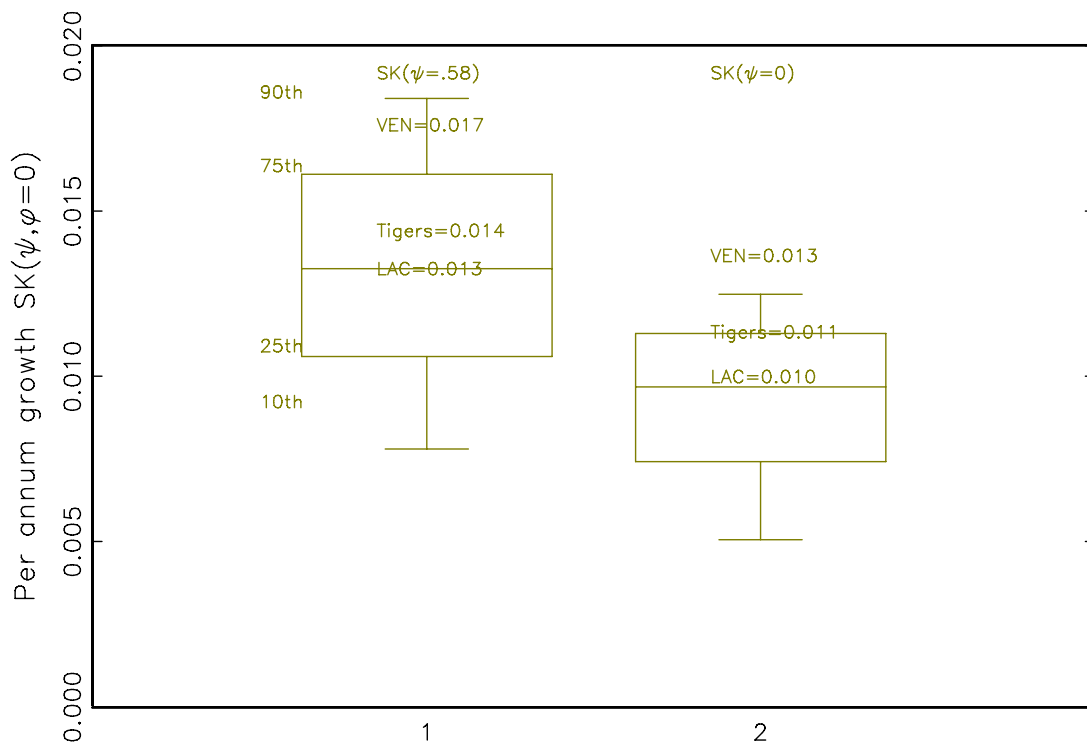
schooling capital (often without really emphasizing the embedded assumptions) or dubious assumptions about the empirical/output relationship (often not very clear whether it is a standard factor accumulation decomposition, a reduced form decomposition, or some strange mix) or, in most of the literature, both sources of dubious are combined.

Fortunately, deciding amongst the variations across the different possible models of schooling capital is not necessary as, across the variations in the parametric form, Venezuela growth in schooling capital is well above the cross-national median, and outperforms all regions. Using the Bils and Klenow (2000) data for 1960-1990<sup>6</sup> Figure 4 shows the box-plot of the distribution of growth rates of schooling capital. Across the range of plausible parameter values, Venezuela shows higher growth in schooling capital than the median country, or even than the East Asian high growth countries.

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<sup>6</sup> Which understates Venezuela's performance, as the data suggest slow growth until 1990 followed by more rapid growth in the 1990s.

Figure 4: Venezuela's growth in schooling capital is higher than than the typical country (across the range of SK measures)

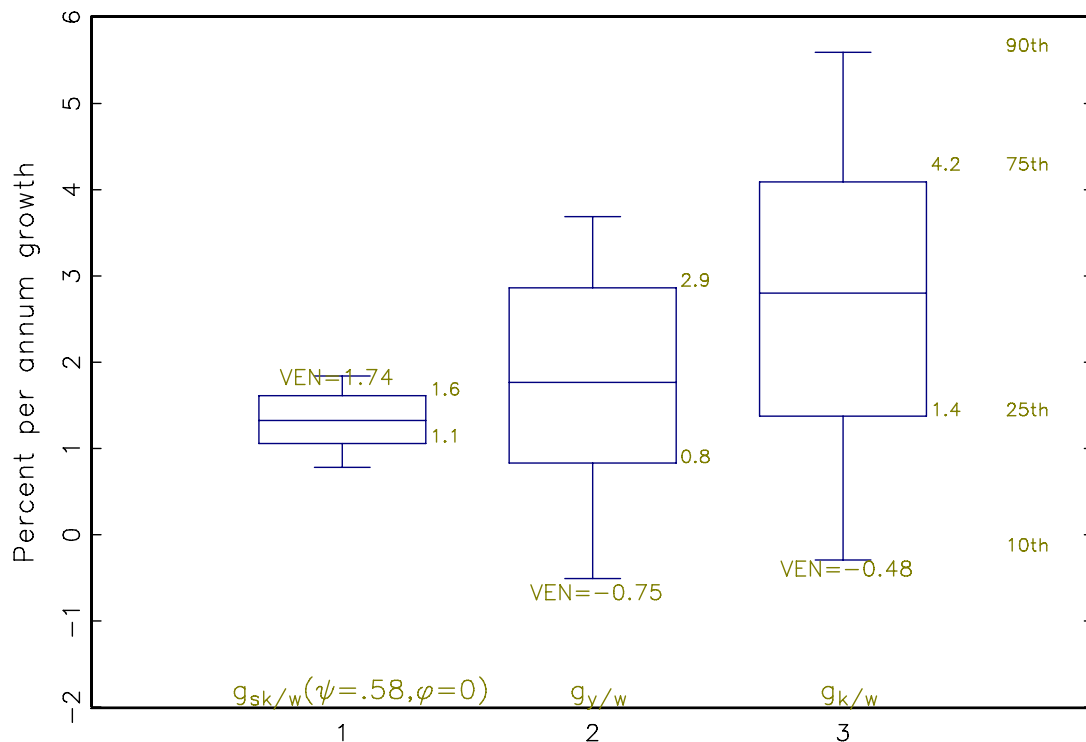


The conclusion of this first section is that no part of the negative growth of the Venezuelan economy can be directly attributed to the country's failure to expand the years of schooling of the labor force.

- Growth in schooling years was rapid before and persisted well after the turn-around in growth
- In the standard data, growth in schooling years was more rapid in Venezuela than in the typical country—or even in the high performing East Asian economies.
- With a measure of schooling capital that is consistent with microeconomic foundations and a coherent specification of an aggregate production function growth in measured schooling capital is more rapid in Venezuela.

Bringing schooling into the picture in some ways deepens the puzzle. If one tries to decompose the growth into that due to factor accumulation (or potentially factor decumulation) and a “residual” then, since the growth of schooling capital was rapid and positive this makes the “residual” component of growth even larger (in absolute value, more negative). Figure 5 displays the distribution of the per annum growth of SK per worker, “physical capital” per worker, and GDP per worker from 1960 to 1990. Venezuela’s negative growth rate of  $-0.75$  over the entire period puts it in the bottom of the growth distribution, to some extent the similar contraction of “physical capital” of  $-0.48$  (also towards the bottom of the cross-national distribution) helps explain this, but clearly the more rapid than average growth in schooling capital creates more puzzles than it solves.

Figure 5: Venezuelan growth in SK is high, but output and K per worker growth is slow

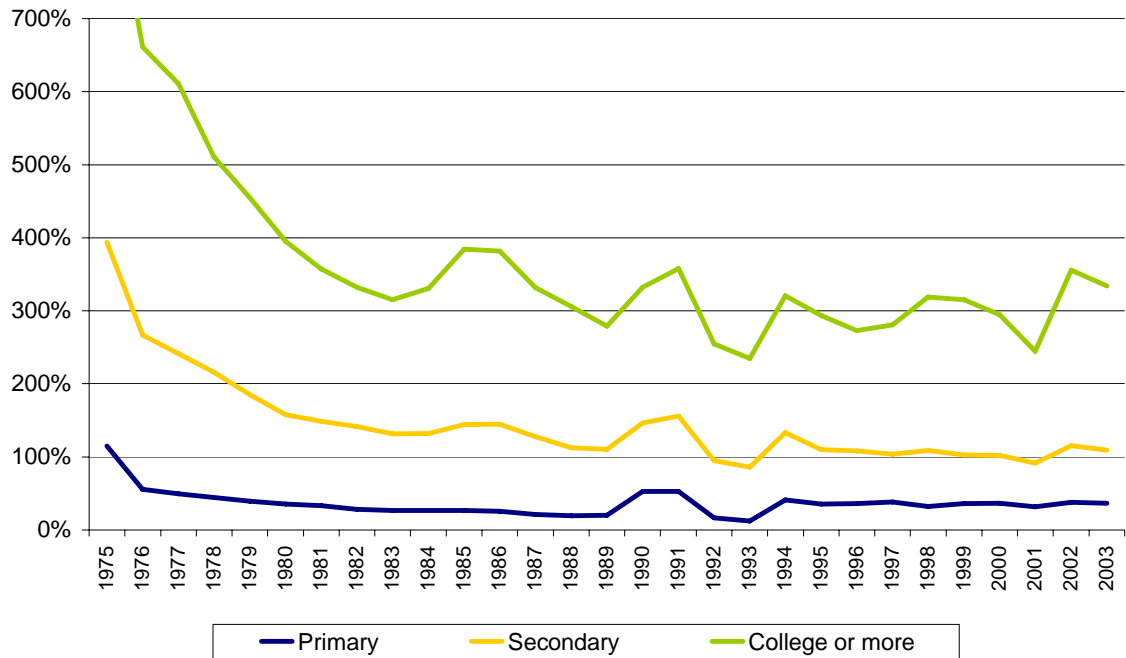


## II) What has happened to returns to schooling in the labor market?

The first question that arises given these facts is whether these investments in schooling were worthless for the economy, and maybe even for the individuals acquiring such capital. That is, perhaps the individually observed returns to schooling in the labor market collapsed during the crisis so that schooling no longer added to wages so the increments to schooling *years* observed above would not create any schooling *capital*. Using the labor force surveys from 1975 to 2003 this does not appear to be the case.

Figure 6 shows the evolution of the wage premium in logs for primary, secondary and tertiary schooling from 1975 to 2003. Between 1978 (the approximate beginning of the collapse) and 2003, the wage premium associated with having a college education or higher fell by approximately 34 percent, however, this fall occurred mostly before 1982; since then, wage premia show remarkable stability, and even a slight increase for primary schooling. In 1981 a worker with completed primary school earned a wage that was on average 33 percent higher than that earned by a worker with no schooling, completed high school represented a wage that was 149 percent larger and a college education commanded a wage premium of 357 percent over workers without formal schooling. By 2003, this picture was not very different: the premium for primary school was 37 percent, for secondary school 110 percent and for a tertiary degree it was 334 percent. Moreover, while the observed wage differentials fell substantially from 1975 to 1982 they did not fall to “low” levels by international standards—rather they fell from very high levels to levels of the wage premia that are similar to other countries in the region.

Figure 6. Wage premia from Mincer Equations after controlling for experience



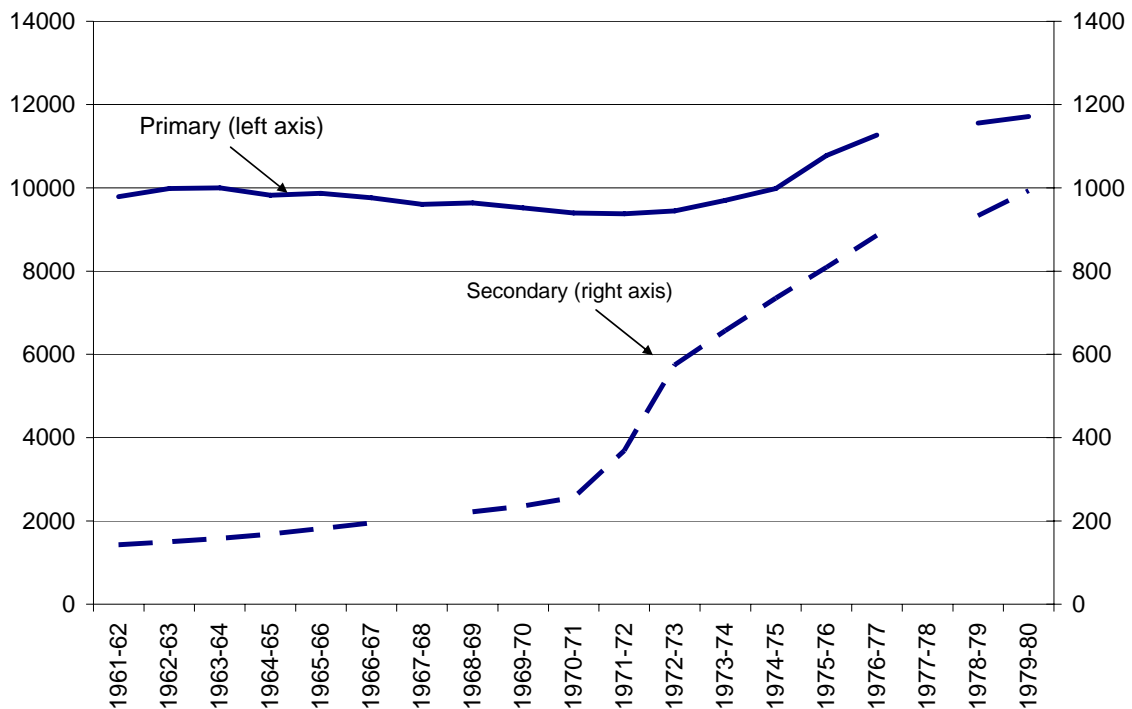
Despite this fact, over this period the labor force (and potential labor force, population aged 15 or more) accumulated increasing amounts of schooling, consistent with the data reported above. Table 2 shows the distribution of the labor force by schooling level for several years; in 1976 only 7 percent of the labor force had completed high school, and by 2003 this figure had risen to 27 percent, similarly, the fraction of the labor force with no schooling fell from 65 to 20 percent over this 27 year span. So, even though the economy was in free-fall since 1978, wage premia remained large and stable enough to sustain significant investments in schooling capital, both private and public.

**Table 2. Distribution of the labor force by schooling level**

Year	None	Primary	Secondary	College or more
1976	0.65	0.26	0.07	0.01
1979	0.60	0.28	0.10	0.02
1989	0.51	0.28	0.17	0.04
1999	0.21	0.50	0.24	0.05
2003	0.20	0.48	0.27	0.05

These facts seem to suggest that the shock that set off the Venezuelan decline was (roughly) skill neutral, so that pre-existing incentives to accumulate human capital were not eliminated when real wages began to fall significantly. These incentives to accumulate formal schooling were bolstered by the rapid expansion of the public school system, beginning in the early seventies, which lowered individual costs of acquiring a secondary education (figure 7), although possibly at a significant cost in terms of quality (see below).

Figure 7. Primary and Secondary Public Schools in Venezuela



The modest drop in returns to schooling from the late seventies onwards, combined with the dramatic increase in the average schooling of the labor force, suggests that the fall in real wages was mostly due to a fall in everyone's wage, and not that of a particular group. We can decompose the log of the average real wage as the sum of the (log of) the unskilled wage plus the share of the labor force with each schooling level times their (log) wage premium as:

$$(5) \quad \ln w = w_u + s_p \alpha_p + s_s \alpha_s + s_c \alpha_c$$

Since both the shares in the labor force and the skill premia change over time, we can ask: "if the skill premia had remained at their 1981 (or 1978) levels and the labor force shares had changed as they actually did what would the evolution of the real wage have been?" Alternatively we can ask "what if the skill premia had always been that observed in 2003? How big must the fall in the intercept (the unskilled wage) have been in order for the overall average wage to have fallen as much as it did despite the observed evolution of the skill premia and schooling of the labor force?"

Figure 8 shows the evolution of the average wage. The real wage has fallen by about 67 percent from its peak in 1980.

We use the (the exponential of) the decomposition in equation 5<sup>7</sup> to construct two counterfactual real wage series, one which maintains the unskilled wage and the skill premia at their 1975 levels while the other fixes the unskilled wage at its 1975 level but uses the 2003 skill premia. If the skill premia had remained at their 1975 levels, and the

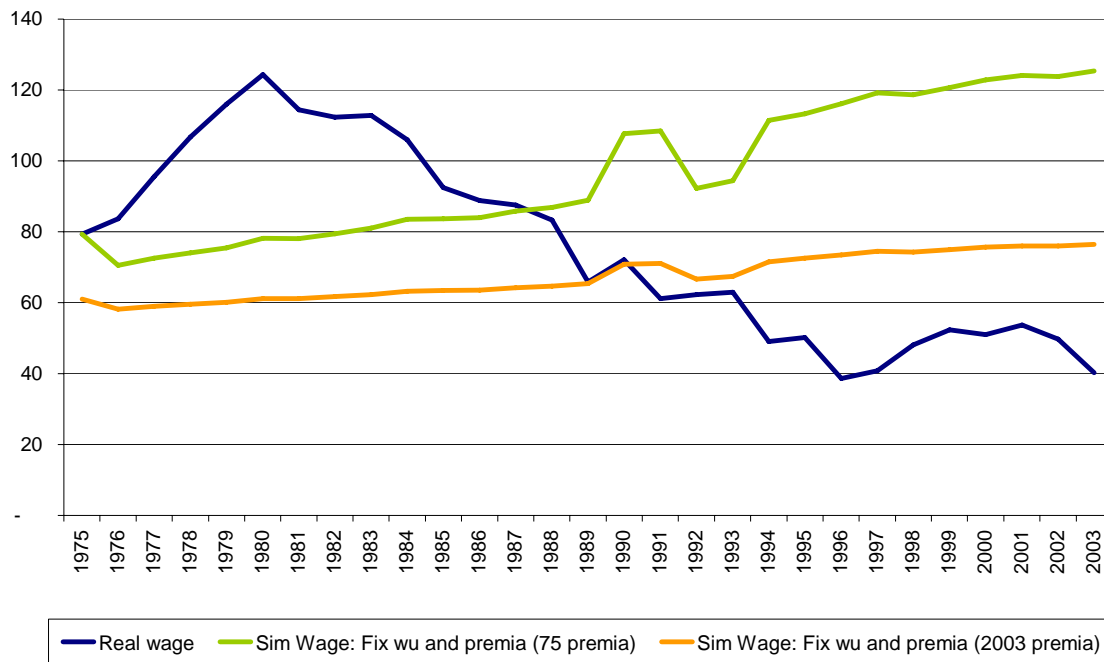
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<sup>7</sup> The Mincer coefficients are estimated from regressions that control for experience and its square, and these decompositions ignore these terms. The estimated shift in the unskilled wage does not consider potentially relevant changes in the returns to experience. Between 1978 and 2003 returns to experience fell by about 40% and became less concave, which combined with the drop in average (potential) experience in the labor market, may account for a non-negligible fraction of the fall in real wages.

schooling capital accumulation had occurred as it did, the real wage should have *risen* by over 58 percent instead of falling by 50 percent. While many are rightly skeptical of growth decompositions like those above, this is much simpler as it is all done in wages—but the finding is the same: the increase in the years of schooling “should have” contributed to much higher real wages so, rather than “human capital” being part of the explanation of Venezuela’s collapse, introducing schooling means that whatever explains the fall in output (or wages) has to account for an even larger fall.

Perhaps returns fell. But figure 8 shows that even if the skill premia had always been at their 2003 levels, then the average wage should have been about 90 percent higher than it actually was, suggesting a huge drop in the unskilled wage. That is, in order to match the 2003 real wage, keeping the returns to skilled fixed at their 2003 levels, the unskilled wage would have had to fall by nearly 48 percent.

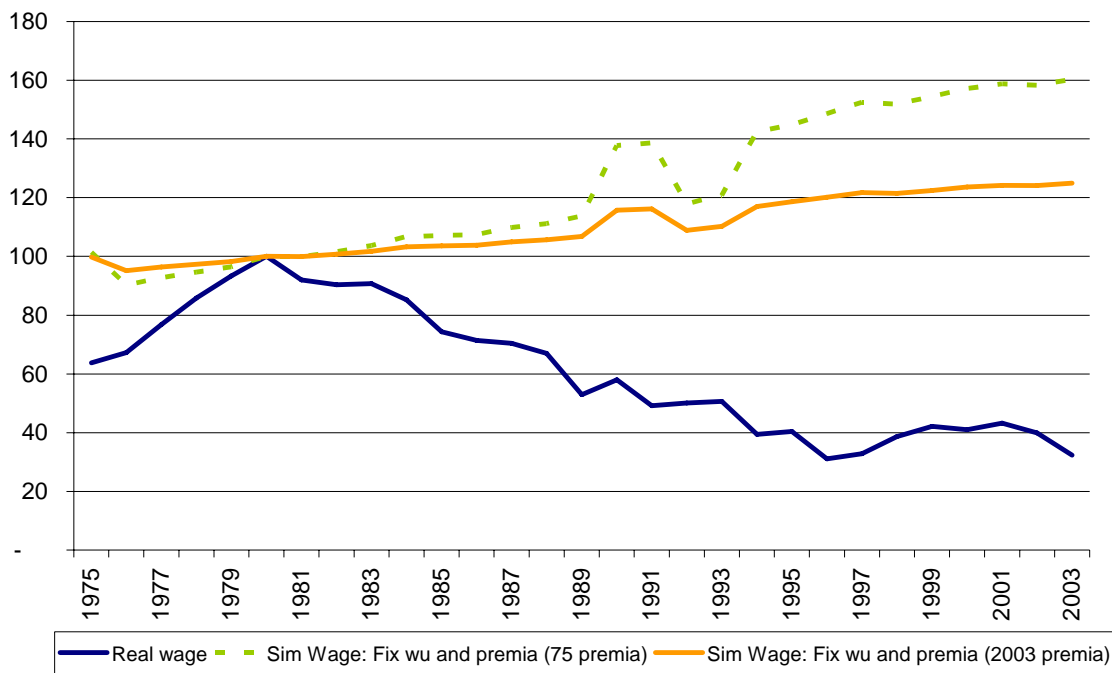
Figure 8. Simulated Wages





The one striking fact that emerges from this analysis is that although the wage premia fell mostly in the late seventies, they remained fairly stable thereafter and thus have never been low enough for a significant slowdown in schooling accumulation. However, average wages plunged by around 50% from 1975 and by over 67 percent if compared to their peak in 1980. Figure 9 shows the evolution of real wages and the simulated series normalized to equal 100 at the peak of the real wage in 1980, it illustrates that from that year up to 2003, the 1975 wage premia combined with the observed accumulation of schooling should have generated a 60 percent increase in real wages; even allowing for the observed fall in the skill premia up to 2003, wages should have risen by 25 percent.

**Figure 9. Simulated Wages Normalized to 100 at 1980**



The main lesson of this section is that the basic shock was to labor as a whole and not so much to the price of skills.

### **III) Kids today versus kids in the 80's: Did schooling quality play a role?**

Although the previous section demonstrates that the decline in wages was not driven by a decline in the market value of skills, especially after 1982, it is useful to have an idea about the evolution of schooling quality, since although the private returns to schooling may have remained constant over time, possibly the public or social return was significantly affected by changes in quality.

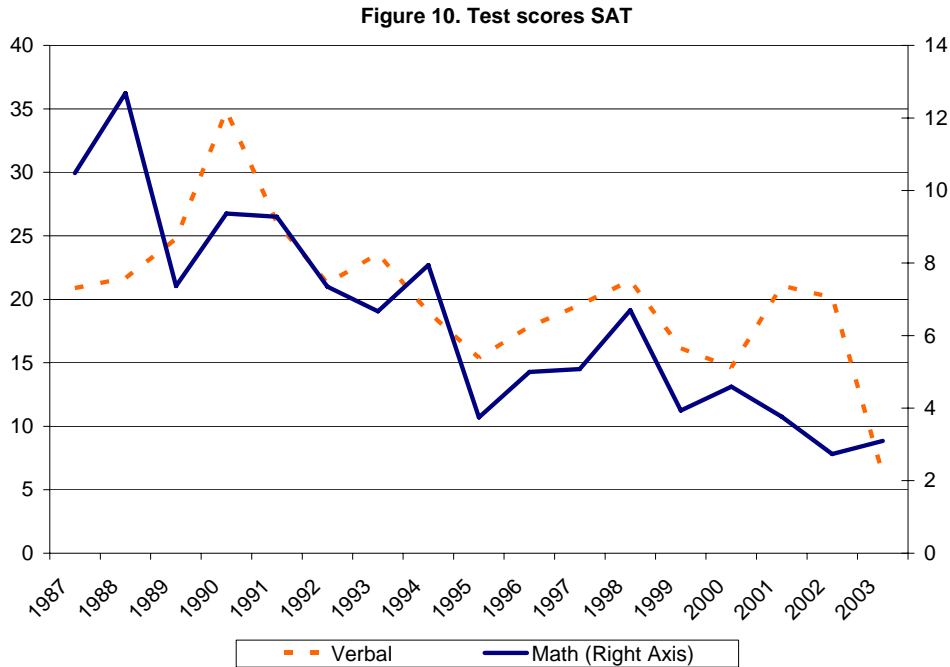
Since 1984, Venezuela performs a mandatory standardized aptitude test on every graduating high school student. The test is centrally administered (at one point even proctored by the National Guard) and is one of the college admission criteria used by public universities. We have data from 1987 onwards on the results of these exams for the verbal and mathematics sections as well as other information such as high school GPA and socio-economic information. Between 1972 and 1980, the number of public secondary schools increased from around 200 to over 1000 nationwide, partly in response to a previous increase in primary public schools during the early 1960's which later increased the demand for secondary schools.

Figure 10 shows the average test scores in math and verbal sections from 1987 to 2003<sup>8</sup>. Over this period verbal and math scores fell by over 70%, which suggests that the quality of the education system's output has deteriorated dramatically over the period. This may have been a consequence of a fall in the quality of inputs (worse quality students as the proportion of students taking the examination expands) or a deterioration

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<sup>8</sup> Conversations with test administration officials suggest that the test has not changed significantly over time and scoring scales have remained the same throughout the period, making the reported scores comparable over time.

of the effectiveness of the school system itself. There is probably some truth to both effects, as would be expected during a period of rapid expansion of the school system.



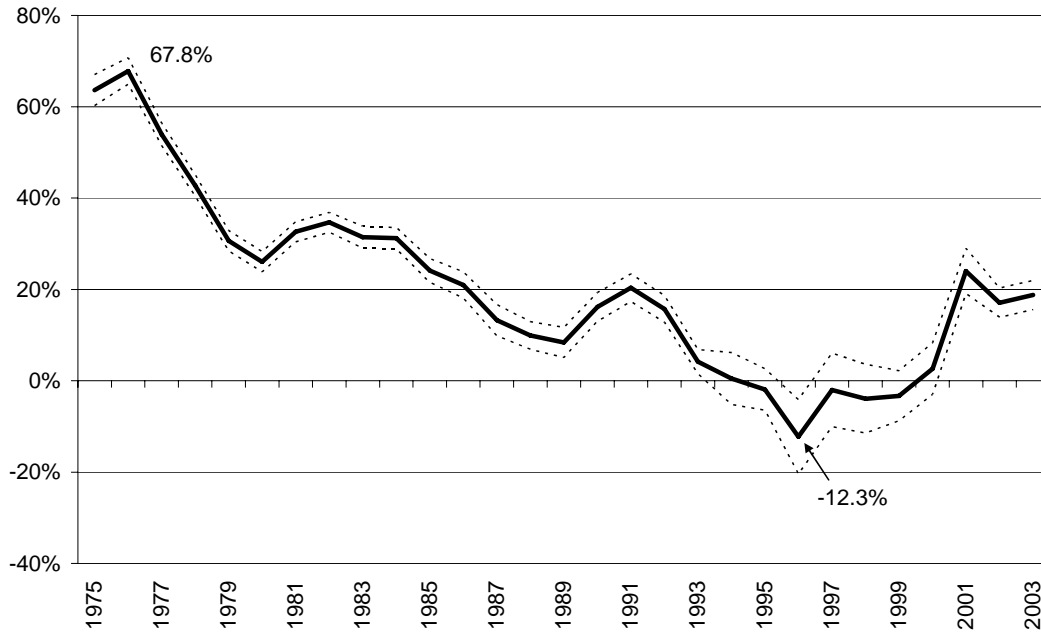
The role that this decline in quality played in economic growth is a difficult question, and we examine three issues.

First, did the timing of the decline in quality coincide with the onset of the growth collapse as perhaps the quality deterioration is the result of a sustained decline rather than its cause. Unfortunately we only have direct observations on quality since 1987. But perhaps this process is not specific to the late eighties and nineties. Although we don't have test score data for previous periods, we can use a proximate measure of the quality of inputs in the schooling process such as teacher wage premia. Figure 11 shows the coefficients (and 95 percent confidence interval) on teacher dummies in Mincer regressions that control for the level of schooling (primary, secondary and college or more) and experience (and its square). After controlling for schooling and experience,

teachers commanded an hourly wage premium of over 60 percent in the mid seventies, and by 1996 (the low point in the series) this had fallen to negative 12 percent. Only in 2001 did the premium become positive again.

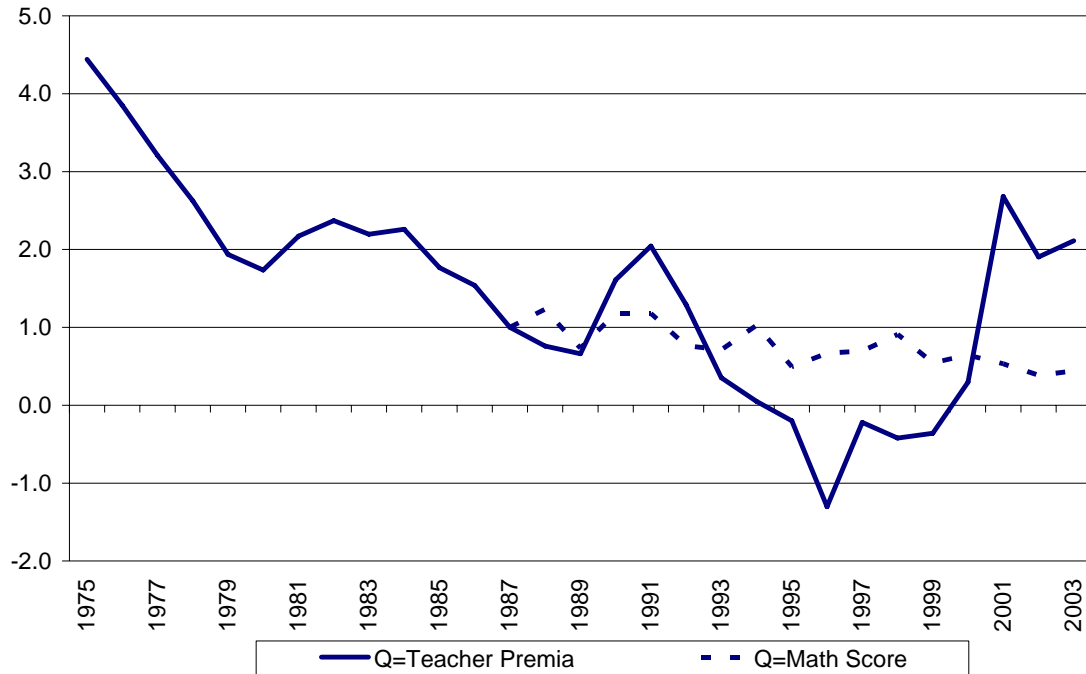
This is however, at best a very crude proxy as one would not expect the effects of changes in the wage premia on the quality of schooling to be instantaneous but rather operate with long and uncertain lags. After all, since learning is a cumulative process if the wage premia began to decline in 1976 and even if the decline caused teaching quality to decline instantly a typical graduate in 1977 would have only been exposed to one year of the decline as his/her previous schooling was already completed. Moreover, one might expect that the main impact of declining teacher premia would be the quality of the people recruited into the profession rather than primarily less effort of those employed. This would also take some years to have an impact as the teaching force would be a mix of those recruited with high premia and those with lower. Finally, the quality of new labor force entrants only has a small impact on the overall quality of the labor force. Even if one dates the fall in teacher premia to 1976 the impact on quality of the labor force would come substantially later when the cumulative impact of the mix of high and low quality teachers is seen on new entrants, the quality composition of the teaching force deteriorates, and the post 1976 entrants are a substantial portion of the labor force.

Figure 11. Teacher Dummy in Mincer regressions where schooling enters via level dummies



That the lag between teacher premia and quality is long and variable is suggested by the comparison of the evolution of the teacher premia and the test scores during the period in which we have observations on both. The figure shows an adjustment of schooling capital for quality using the teacher premia for the entire period and also adjusting using the average SAT (PAA) scores in math (probably a better measure) from 1987 onwards. This alternative adjustment exhibits over the post-1987 less volatility and a consistently declining as opposed to the dramatic up and down in the wage premia. Moreover, if one assumed the decline in quality began early and played a major role in the collapse one would have to extrapolate backwards the decline in quality, which would imply scores in the 1970s that were astronomically higher than those today—math scores fell in 11 years from 1991 to 2002 by about 15 points, if one extrapolate backwards a similar magnitude decline from around 30 in 1987 to 1976 then the score would have been 45 in 1976 compared to less than 10 today.

**Figure 12.** Quality adjusted SK using teacher premia and test scores as quality measures (1987=1)



Assuming the teacher wage premium is a good measure of the effect of schooling quality on wages, we may construct a quality-adjusted measure of schooling capital as the average years of schooling of the workforce times the teacher wage premium. Figure 12 shows this measure from 1975 onwards and illustrates the sizable effect even a naïve adjustment can have on our view of schooling capital accumulation in Venezuela. However, this takes a particularly strong, and likely unrealistic, view on the magnitude and timing of the teacher premia on student outcomes<sup>9</sup>.

A second issue with explaining output declines based on declining test scores is that, as detailed above, the wage premia per year of schooling did not in fact fall by very much. Hence, schooling capital measures constructed using the valuation of school

<sup>9</sup> The empirical literature on the relationship between teacher compensation and learning outcomes of students is far from conclusive that these effects are large in magnitude, even in the long run.

years, which take into account the wage premia per year of schooling, already reflect the market price of a year of schooling. If we think the test scores are reflecting some overall cognitive ability “ $q$ ” that is augmented by schooling  $s$ , so that  $q=q(s)$  then a fall in  $q$  per unit  $s$  (which is what the data about learning achievement imply) then if the wage premia is exclusively driven by  $q$  and demand for  $q$  is static then one would expect the wage premia per year of schooling to fall as each year embodies less  $q$ . But we have no independent observations on the price of  $q$ —falls in supply should make it scarcer and increase the price whereas it is also not implausible that the technical change and policy changes would have increased the returns to cognitive skill, both of which would cause the premia to  $q$  to have increased such that, even if  $q$  per unit  $s$  declined the wage premia to  $s$  remained stable.

Quality has deteriorated dramatically in Venezuela in the period for which we have the data—since 1987. This can potentially explain the output decline as if cognitive skills and unskilled labor are complements in the production function then a reduction in “skill capital” could contribute to falls in the unskilled wage by reducing its marginal product. Almost certainly a deterioration in schooling quality of the magnitude observed plays some role in reducing output and the unskilled wage. However, there are two empirical questions to be resolved before we could now how important this was. First, the timing issue—while we observe a decline since 1987 and even though we show there was a decline in the wage premia for teachers beginning in 1976—we do not know when quality began its decline. We feel the combination of factors above suggest it is unlikely that the declining quality explains the timing of the decline in output and unskilled wage. The second puzzle is the contrast between the observed decline in measured cognitive

skills of those completing schooling and the wage premia on secondary schooling completion which is very stable over exactly this same period. Without some ability to disentangle wage premia to skills directly it is hard to say whether “human capital” even declined.

#### **IV) Is there an HK dog that did not bark?**

One possibility from the previous two sections is that HK really played no particularly role in the collapse--didn't start it, didn't exacerbate it (though with the caveat that falling cognitive skills may have played a role) but didn't reverse it. But there are perhaps some more complicated ways in which human capital didn't bark, but should have, or perhaps is barking but in silent ways. That is, the basic problem is that due to a shock the productivity of factors in Venezuela (both labor, skilled labor, and physical capital) fell. This led to a decline in physical capital (eventually) but as the price of skills did not fall if the choice was unskilled or skilled labor in Venezuela it still paid to be skilled. But what was needed was a reallocation of factors away from existing uses towards new uses that responded to the shock and hence changed relative prices. There are two related literatures. One is the paper of Murphy *et al.* (1991) on the "allocation of talent" in which they show that the types of activities chosen by highly talented people, proto-typically “rent seeking” versus “innovation”, affects long run economic growth. This is consistent with Pritchett (2001) who argues for varying gaps between private wage returns and growth impacts depending on the country context.



The second related literature is the game theoretic views of “delayed stabilization” in which contests over the allocation of losses causes the necessary adjustments to cope with negative shocks is delayed and hence some shocks cause large output losses (as stabilization is delayed) while others are accommodated with smaller output losses. The best empirical evidence for these type of mechanisms for adjusting to shocks is in Rodrik (1999) which shows that growth slowdowns are associated with the *interaction* of negative shocks (e.g. terms of trade) and weak “social capability” for coping with shocks .

To reconcile the observed facts (1) Schooling increased rapidly, (2) wage premia fell only modestly, and (3) real wages and output per capita fell dramatically with a view where human capital played some role in the “anatomy of the crisis” we would need a model of the type in which HK somehow delays efforts and economic transformation. For instance, a simple model in which there are two ways for people with HK to make money: innovation (engineers, MBAs) or rent allocation (lawyers). The relative allocation of people with HK across these two activities determines output--as the former have positive spillovers, the latter negative spillovers so that both types of HK in equilibrium have a private return in the form of a wage premia (consistent with Mincer) but  $A$  (the general productivity term) is a function of the allocation of HK across the two types of activities. Therefore the derivative of output w.r.t. HK can be negative (if the allocation is into rent seeking), very high (if HK goes into innovation that reverses the decline in  $A$ ) or zero (some mix). Moreover, one can imagine that shocks to the economy alter the relative returns—so a negative shock could raise the returns to rent seeking,

which would cause the wage premia to be stable or rise, but more HK flows into rent seeking causing the output impact of HK to be more and more negative.

This heuristic puts forward two key empirical questions:

a) Did the shock cause a reallocation of talent from one type of activity to the other?

This is a hard question because even if the shock reduced the total rent does it not mean that the returns to HK investments in the rent seeking fell--perhaps it is even more important to have high HK to grab the rent as it shrinks. This would be the analogy with the “delayed stabilization” literature, in each period people make HK allocation decisions between rent seeking and innovation and then total production is revealed which is conditioned on both past HK and shocks. We conjecture one could build a model in which the allocation of HK into rent seeking is the privately optimal decision even as wages decline (inclusive of skill) as the returns to engineers fall even more than lawyers. But the average return did not go down so the returns to at least one activity were maintained---the shock cannot have reduced the returns to both activities.

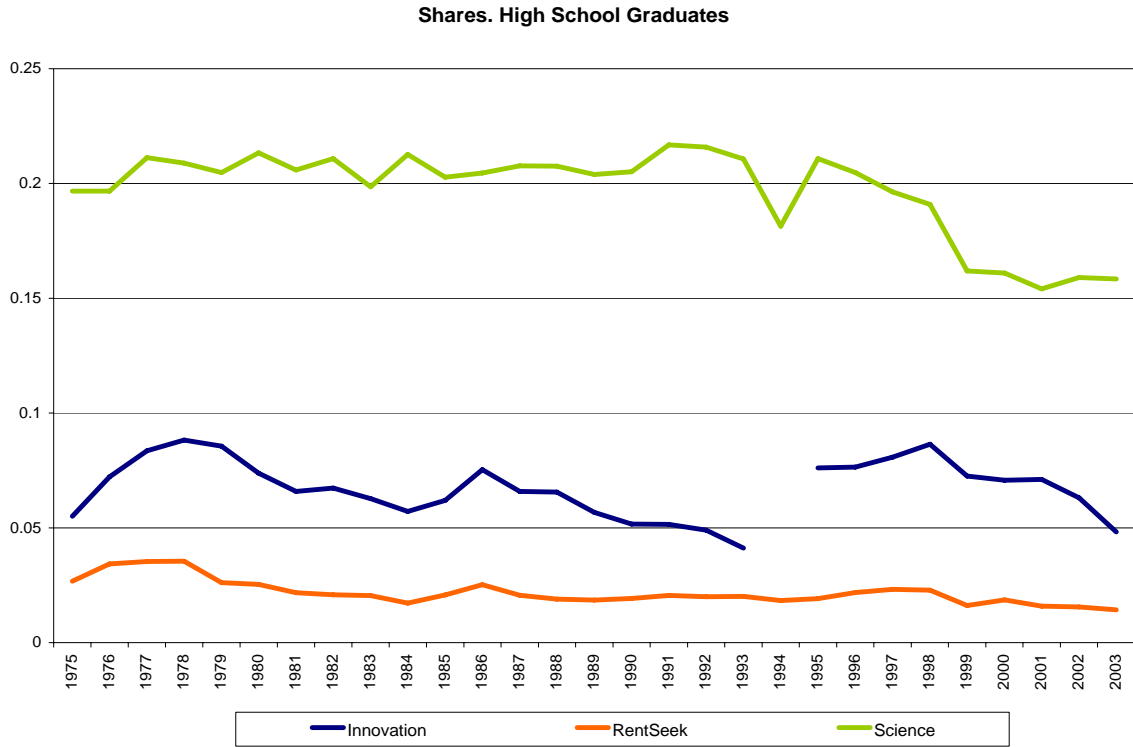
A key question therefore is whether there is any evidence about the allocation of educated people across occupations over time in a way that would allow us to say anything--e.g. did the proportions of lawyers versus science/engineers change over time? A quick and dirty exercise of using the labor force surveys to allocate highly skilled labor into these categories does not reveal any “smoking gun” of increased allocation into “rent seeking” over the period. We classify high school graduate workers into five categories: “Innovators”, “Rent Seekers”, “Production”, “Science” and “Other” according to their self-reported occupation. Table 3 lists the occupations included in each category.

Table 3. Classification of occupational categories

Category	
Innovation	Architects and engineers. Directors, managers and owners of businesses
Rent seeking	Lawyers, judges and legal aides. Elected officials to congress and local and regional legislatures. Public administration high level officials
Production	Agriculture, fishery, forestry, transportation, communications and mining workers, drivers, mechanics, shoemakers, carpenters, jewelers, machine operators, waiters, barbers, other similar occupations.
Science	Chemists, physicists, geologists, biologists, agrarian engineers, veterinarians, physicians, paramedics, teachers and professors, specialists in mathematics, social sciences and humanities.
Other	Artists, writers, religious workers, office assistants, typists, accountants, retail salespeople, street vendors, travel agents, real estate agents, photographers, sportsmen, military, diplomats and non-declared occupations

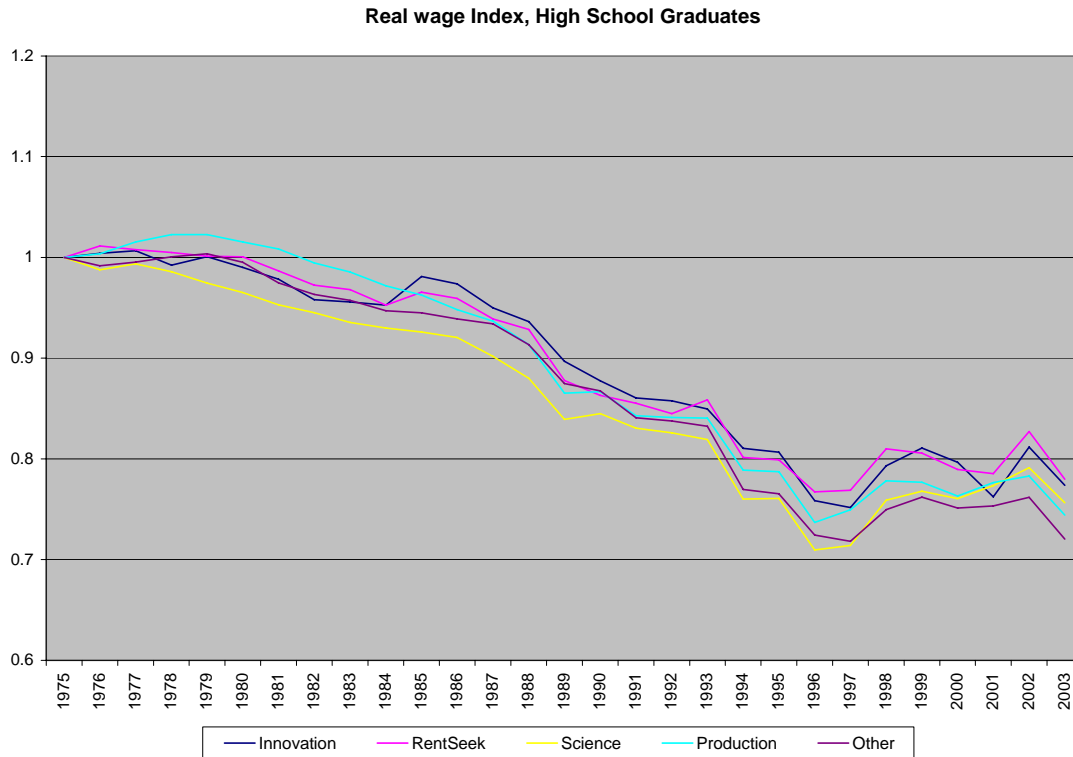
Figure 13 shows the shares of high school graduates working in “Innovation”, “Rent-Seeking” and “Science” occupations, and does not reveal a particularly striking break of trend at any point in the series.

**Figure 13: Allocation of highly skilled labor amongst labor force categories of “science”, “innovation” and “rent seeking”**



Looked at from the point of view of wages (figure 14) also one does not see any particular shifts in the relative wages of these categories over time. Real wages fell for all groups and the relative movements among the groups are quite small.

**Figure 14: Real wages by various categories of highly skilled labor**



Of course, narratives (we won't grace them with the name 'theories' yet) like this might be correct and we just have not found the right empirical counter-parts of the "rent seekers" or "innovators."

A second class of narratives is even less precise. In the Hausmann and Rigobon (2002) model of "corner solutions" the problem is that the unskilled wage never falls low enough to make non-resource exportables competitive. So the economy remains specialized even as it gets poorer and poorer. So presumably the question is something like, why has India been able to attract "high talent" service industries and not the much more educated (on average) Venezuela? Or, if we go back to the model there is "innovation" and "rent seeking" and then "innovation" could be in tradables or non-tradables.

So if one thinks of a three activity model: (a) engineers, (b) architects/doctors, and (c) lawyers is it the case that the real problem was that the real wage for unskilled/semi-skilled labor never went low enough that HK would optimally apply itself to the "capacity to import" problem (as it did in India, big time, for instance after the 1991 shock).

## **Conclusion**

Unfortunately for Venezuelans but fortunately for researchers most of the trends observed here are so large it is doubtful the methodological concerns can overturn several basic facts:

- Schooling of the labor force increased *a lot*—more than doubled.
- The observed wage premia for schooling remained quite robust for most of the period, at levels similar to other countries.
- Real wages fell *a lot*—roughly in half.

It is quite difficult to put those facts together in a way that makes “schooling” a major part of Venezuela’s decline. While quality did decline, it did so (at least that can be documented) well into the decline and more important, since the wage increment per year of schooling remained roughly constant, this suggests that even if a year of schooling conveyed less skills the increases in demand for skills must have increased so that growth decompositions in terms of years and wage increments to years are not invalidated by data about quality.

In the end, we also do know that human capital did not save the day when it might have—the decline was not checked by innovations or reallocations of factors. It might be

the case that human capital allocated to rent seeking or more neutrally non-tradables delayed policy changes or reforms that could have stemmed the crisis—but we must admit there is no empirical evidence for the view at this stage.

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CHAPTER 8:  
Income Distribution and Redistribution in Venezuela

Final Draft

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## 1. Introduction

The Venezuelan growth experience is dismal in the sense that this is a country that has performed badly. It has not experienced sustained growth over the last three decades. Actually, by some accounts, it has stagnated such that current GDP per capita levels are lower than thirty years ago. Barro and Sala-i-Martin (1995) in their famous book on economic growth classify the Venezuelan performance together with Sub-Saharan African countries as the worst performers in the period 1960-1990. Furthermore, Venezuela is usually described as an unequal economy, although not more than other Latin American countries, and has recently faced serious civil turmoil and far-reaching political changes (see, for instance, IADB, 1999 and McCoy and Myers, 2005). A question that can be asked, then, is whether this dire economic performance is somehow related to income distribution and redistribution.

The relationship between inequality and growth has been a subject of intense debate and research in the Economics literature. Kuznets (1955) is the seminal work in this subject where a link between these two variables is postulated. According to Kuznets, inequality first grows and then declines over the course of economic growth. This hypothesis sparked a series of empirical studies trying to corroborate the so-called Kuznet's inverted U-curve for different countries and different periods. These empirical studies do not agree in confirming the Kuznet's hypothesis for every country and every period, so the link between growth and inequality varies by economic circumstances.<sup>1</sup>

The lack of agreement in the empirical literature has led to an equally abundant theoretical literature that aims to explain the different relationships that can be found between growth and inequality. The theoretical literature can be grouped into three general strands. First, models where growth affects inequality; second, models where

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<sup>1</sup> For a review of the empirical literature on the Kuznet' hypothesis see Adelman and Robinson (1989), Fields (2001) and Bertola (2006)

inequality affects growth; and, third, models with market imperfections where both factors fully interact.

If one assumes a neo-classical model with perfect markets, profit maximizing firms and mobile factors of production, the initial distribution of income does not affect long-run growth but economic growth does affect inequality. Models by Stiglitz (1969) and Bourguignon (1981) show that the distribution of income and wealth may become more or less unequal over time depending on assumptions about individual preferences and their implications upon propensities to save. The intuition for this result is that the accumulation of capital over the course of economic growth makes the returns to capital to decline and the returns to labor to rise (because of the law of diminishing returns). This generates a convergence of incomes among individuals with different endowments of capital and labor, which together with perfectly operating capital markets leads to equalization of assets and returns. In addition, convergence or divergence of income distribution depends on whether minimum consumption levels force the initially poorer members of society to save proportionately less than others.

The possibility of different average and marginal savings rates across individuals supports the models where initial inequality does affect growth. Either assuming that consumption functions are not linear in income or assuming, *a la Kaldor-Pasinetti*, that only capital owners save, the initial distribution of assets, and income, affects the dynamics of capital accumulation and growth. In this case, an initially unequal distribution of income in favor of capital holders bolsters savings, capital accumulation and faster growth. On the other hand, following for instance Uhlig and Yanagawa (1996), differential savings rates by age (e.g., assuming the youth save and the elderly consume in a standard overlapping generations model), lead to faster growth if the initial distribution of assets favors labor (which is the abundant factor among the youth).

The actuality of market imperfections calls for growth-inequality models that include these. The lack of competitive capital markets affects both inequality and growth. If only the initially endowed with capital can borrow from capital markets then the investments

returns will vary by investment volume and, hence, capital accumulation will vary by type of individual, making capital owners grow faster than others. This intensifies initial inequalities and leads to sub-optimal investment, so slower growth. Other market imperfection, such as the presence of monopoly power in the market for goods, together with indivisibilities in consumption, hierarchic preferences or different technologies of production, lead to cases where the initial distribution of income affects the structure of aggregate demand, which affects capital accumulation and growth. For instance, as an economy grows, individuals demand for non-essential goods goes up and, if these goods have a larger capital/output ratio, the demand for capital and its returns rise, affecting both economic growth and inequality. In these models the distribution of income affects the composition of outcome and the dynamics of investment and technical growth.<sup>2</sup>

The presence of market imperfections calls for government intervention in order to enhance efficiency. Besides, the presence of inequality, initial or evolving, also calls for government intervention to “level the field”. However, since “lump sum” transfers are not usually available in the public policy tool-kit, taxes and subsidies affect both productive efficiency as well as income distribution. Therefore, politico-economic forces affect the dynamics of growth and inequality. Persson and Tabellini (1998) and Bertola (2006) study these links noting that initial inequality may lead to slower growth because of political conflict, social unrest, and re-distributive policies that affect savings and capital accumulation.

This study provides a portrait, a description of income distribution and redistribution in Venezuela for the period 1975-2005. It computes the main inequality and poverty indexes over a long period of time in order to characterize the evolution of income distribution for this country over the course of its economic growth experience. Then it explains how the government re-distributes income and what is the evolution of this process. These results provide traces on the relationship between income distribution and the dismal economic performance of this country.

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<sup>2</sup> For a review of these models see Bertola (2006)

The paper draws information from several sources, both primary and secondary, for making this description. I make use of aggregate data from the Banco Central de Venezuela (BCV), the International Monetary Fund and the Ministry of Finance of Venezuela as well as microdata from Households Surveys conducted by the National Institute of Statistics (INE). Additionally, I rely on several studies that precede this and provide useful insights on the issues dealt here.

The study proceeds as follows. Section 2 describes income distribution. It first deals with the general issue of factorial distribution and then describes several dimensions of earnings distribution. Section 3 depicts the main channels of redistribution via social expenditures and taxes. Section 4 concludes.

## 2. Income distribution

The measurement of income distribution is a complex matter that requires both abundance of good quality data and precise concepts of what aspects of the income distribution are under study. The following section addresses the distribution of gross national income into factors of production (e.g., capital and labor). In the next section, personal distribution of labor earnings is studied in order to determine the evolution of inequality and poverty.

### 2.1. Factorial income distribution

In Venezuela, the oil industry represents nearly one quarter of total GDP but its output is mainly produced for exports (between 70% and 80% of its output is sent to foreign markets). In addition, given its capital intensity, the oil industry absorbs less than 5% of total employment. Given this, we may assume that the aggregate production function of this economy has three inputs (i.e., labor, capital in non-oil activities and capital in oil activities) and hence income is distributed into three factors

The factorial distribution of income in Venezuela is characterized by two main phenomena. First, the oil industry takes a sizable share of total disposable income (before net taxes). This share oscillates between a minimum of 7.6% in 1998, to a maximum of 40.8% in 1974. These wide oscillations depend mainly on international oil prices. In fact, Figure 1 shows that the highest peaks in the share of capital income from oil activities coincide with oil-price boom years (e.g., 1974, 1980, 1990 and 2003) and the troughs with bust years (e.g., 1986, 1998). These fluctuations involve that the share of labor within disposable income also shows a seemingly fluctuating, but in opposite direction, pattern.

However, this is misleading. The second characteristic of this factorial distribution of income is that the share of labor is steadily falling. The share of labor within disposable income, excluding the proceeds from oil, has declined from around 70% in the late fifties, to less than 50% since the mid eighties (see Figure 2). What may have caused such a shrinking of the labor lot?

The observed decline in the share of labor may be partly explained by changes in the social accounting system in Venezuela. Four different base years, as well as social accounting procedures, have been in use over the period of study. Hence, the data used in this paper comes from four series of national accounts with base years in 1957 (for the period 1950 to 1968), 1968 (for the period 1968-1984), 1984 (for the period 1984-1997) and 1997 (since 1997). The relevance of these changes is apparent in Figure 2 where it can be seen that the share of labor within national disposable income has downward breaks in years 1968 and 1984 as well as a slight upward break in 1997. There are two alternative interpretations for these. On the one hand, the breaks are mere artifacts of the accounting conventions adopted in each period. On the other hand, they do represent changes in the factorial income distribution that are belatedly incorporated in the national accounting. In any case there are some changes within periods and some more fundamental cause ought be driving these.

The accumulation of capital, as explained in the introduction, may affect this evolution of the labor share. Assuming a production function in two factors, the elasticity of substitution can be defined as follows

$$\sigma = \frac{\Phi_K(K, L)\Phi_L(K, L)}{Q\Phi_{KL}(K, L)}$$

where the production function is  $Q = \Phi(K, L)$ , K stands for capital, L for labor, and the subscripts denote the relevant partial derivatives.<sup>3</sup> If markets are competitive and in equilibrium, marginal productivities equal prices and then it can be proved that the capital/labor ratio elasticity of the factorial distribution of income depends on the elasticity of substitution.<sup>4</sup> Formally:

$$\frac{\partial \Theta}{\partial \frac{K}{L}} \frac{K}{L} = \frac{\sigma - 1}{\sigma}$$

where the factorial distribution of income is represented by:

$$\Theta = \frac{\frac{\Phi_K(K, L) * K}{Q}}{\frac{\Phi_L(K, L) * L}{Q}} = \frac{w_K K}{w_L L}$$

The meaning of this is that, for instance, an increase in the use of capital relative to labor will increase (decrease) the share of capital within income if the elasticity of substitution is higher (lower) than 1. Then, a falling share of labor within disposable income, during a period that is known for declining total investment and growing population suggest that the elasticity of substitution is below one. In other words, as labor becomes relatively

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<sup>3</sup> This definition will render the same results even for a three-factor production function either additively separable or multiplicative in two sectors, in as much as the capital used in the oil sector and the one used in the non-oil sector are not fungible.

<sup>4</sup> See Champernowne and Cowell (1998)

cheaper, given its relative abundance, it substitutes capital but in a proportion that makes the share of labor within total income to decline.

Given the definition of the capital/labor elasticity of the relative shares of income, we can postulate the econometric model:

$$\ln \Theta_t = \alpha + \left( \frac{\sigma - 1}{\sigma} \right) \ln \left( \frac{K}{L} \right)_t + \varepsilon_t$$

I run this model using data on income shares for labor and non-oil capital for the period 1957 to 2003 and several measures of the capital/labor ratio for the same period. For the factor shares I use data from the Venezuelan national accounts system and for labor I use the average number of employed individuals in each year using data by Baptista (1997), OCEI (1998) and INE (various years).<sup>5</sup> For the capital stock I make use of data developed by Hofman (2000) as well as a measure of ten-year accumulated gross investment according to Venezuelan national accounts developed by myself. I also make use of estimates of capital stock made by Francisco Rodríguez who extends Hofman's data until 2002 and also separates it into oil and non-oil sectors.<sup>6</sup> These three different measures are shown in Figure 3. The trends are quite similar, though, showing a stable capital/labor ratio in the late sixties, a rising trend in the seventies and a declining trend since the mid eighties. The ratios only differ in the late fifties and early sixties although all show a declining trend.

I also add to the former model a time trend as well as dummy variables to control for changes in the social accounting system. I tested for unit roots for both the factor shares and the capital/labor ratio and found for both that we cannot reject the hypothesis of these being integrated. I also tested for the residuals of the equation and found that our variables of interest are co-integrated (see Table 1). Hence we proceed to include a first

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<sup>5</sup> INE is the Spanish acronym of the Venezuelan Statistics Office (i.e., Instituto Nacional de Estadística). The same institute was previously known as OCEI (i.e., Oficina Central de Estadística e Informática). National accounts are compiled by Banco Central de Venezuela and can be found in its web site: <http://www.bcv.org.ve>

<sup>6</sup> I thank Francisco Rodríguez for providing these data.



difference for the lag and lead of the capital/labor ratio in order to estimate the co-integration factor. All these regressions are shown in Table 2.<sup>7</sup> Remarkably, all the results show a capital/labor ratio elasticity of factor shares of around -0.3, which implies an elasticity of substitution below unity (0.8 to be precise). This confirms, even controlling for trends and changes in accounting, that the fall in the share of labor is associated to the decline in the Venezuelan capital stock. In other words, the shrinking of the labor lot within national income is associated to lack of investment.

The fall of investment in Venezuela concentrates in the private sector. As can be seen in Figure 4 the proportion of private gross fixed capital formation has declined since the late seventies and is below 15% of private aggregate demand since the early eighties. This decline also affects total national investment, which is only partly compensated by public sector investment in both oil- and non-oil related activities.

In summary, factorial income distribution in Venezuela shows a picture of an economy that receives an important inflow of income via the returns to capital in the oil industry. The return to capital from the oil industry averages 20% of disposable income, but registers wide variations. The rest of the economy distributes income between capital and labor in a manner that has been detrimental to labor because of the decline in investment since the mid eighties. Given the fact that, since 1975, the oil industry is owned by the state then the personal distribution of income in Venezuela will crucially depend on how the returns to capital in the oil industry are distributed through taxes and public expenditures. We will study the redistribution of income in section 3. In what follows, I describe other aspects of the income distribution in the country.

## 2.2. Labor earnings distribution

The distribution of the returns to capital and labor among different individuals is the personal, also known as size distribution of income. It depends on the personal distribution

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<sup>7</sup> These results correspond to the capital/labor ratio by Freije. Results using Hofman and/or Rodríguez series are qualitatively similar and available from the author upon request.

of productive assets and the prices that such assets receive in the markets. The main problem for studying personal distribution of income is the availability of data. Usually, censuses and surveys only provide information on some productive assets and their return. In the case of Venezuela, there is no comprehensive database with information on every source of income. The Encuesta de Presupuestos Familiares (Family Budget Survey) is perhaps the most complete survey on income and expenditures, but it has been done three times over the last two decades and with different methodologies and coverage, which makes it less useful for inter-period comparisons. The Encuesta de Hogares por Muestreo (Households Sample Survey) has been done twice a year since the late sixties and is the usual source of data for income distribution studies in the country. It has the drawback of being a labor survey and only reports information on monthly labor income.<sup>8</sup> In what follows, I make use of these surveys and, hence, refer only the size distribution of labor earnings.

The distribution of earnings (as any other variable) has many facets. Researchers can be interested in the relationship between the earnings across different levels (inequality) or the distance of different earners with respect to a given parameter (poverty).<sup>9</sup> We will gauge each of these concepts in the next subsections.

### 2.2.1. Inequality

The measurement of inequality is a well-developed area of study that has provided a wide variety of indexes with properties for every taste and research interest.<sup>10</sup> In addition to choose the adequate index, when studying the subject it is needed to make clear inequality of what, and inequality among whom. Labor income, consumption and total income are usual measures of what is being distributed. Families or individuals are the

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<sup>8</sup> Since 1997, the Encuesta de Hogares por Muestreo includes questions on sources of income other than labor earnings, but there is agreement among different researchers that these sources of income are seriously misreported.

<sup>9</sup> Other topics related to distributive issues refer to polarization and mobility. For recent conceptual reviews of these topics see Fields (2001) and Wang and Tsui (2000).

<sup>10</sup> See, for example, Cowell (1995)

usual recipient units under consideration. In this section, I compute several inequality indexes of labor earnings among Venezuelan families and workers for the period 1975 to 2005.

Figure 5 shows the evolution of the Gini coefficient of monthly labor earnings per capita among Venezuelan families and the Gini coefficient of hourly wages among employed workers. The difference between these two measures may be affected by demographics (family size and dependency rates) as well as economics (labor market activity rates, human capital distribution and returns to it, unemployment rates and hours of work). However, it can be seen that the trends of the two indexes are very similar so it can be said that the evolution of earnings inequality in Venezuela is driven by the evolution of inequality of hourly wages. Similarly, the trends of the Gini and other indexes of inequality follow very similar patterns so the evolution of hourly wage inequality does not depend on the sensitivity of the index to inequality in different sections of the wage distribution (see Figure 6).

If we concentrate on the Gini coefficient (see Figure 5), we can identify several periods in the evolution of wages inequality in Venezuela. Inequality first declines between 1975 and 1983 and, after a sudden jump in 1984, it declines again until 1993. It rises between 1994 and 1998, and levels off since. These trends are somehow misleading because of the nature of the data used to compute them. The sudden jump in 1984 can be associated to a change in the manner earnings units were introduced in the questionnaire, so it may well be an artifact of the data.<sup>11</sup> In addition, due to the high rates of inflation that characterized the second half of the eighties, the number of top-coded observations grew steadily (see Figure 7), which makes one wonder whether the downward trend in inequality between 1984 and 1992 is also data driven. Finally, from the mid nineties, and particularly since 2000, the number of missing observations (because of not reporting either hours of work or monthly earnings) grows to levels never seen before.

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<sup>11</sup> Until 1983, monthly earnings were recorded in bolivares (the national currency), but from 1984 they were recorded in units of 10-bolivares. It is plausible that many interviewers or interviewees misrecorded monthly earnings in the first waves of this change in the sample questionnaire.

In order to avoid deriving conclusions from questionable data, I choose to study indexes from selected periods with similar missing data percentages. Therefore, we can safely say that wage inequality (as measured by the Gini) was nearly 0.40 in the late seventies (first semester 1977), declined to 0.33 in early nineties (second semester 1992) and rose again to 0.40 in 2000 (first semester 2000). For these selected periods (all of them with 9% of missing observations), I compute some decompositions that allow us to identify the sources of these changes in inequality. First I decompose the generalized entropy index so as to identify changes in the inequality due to changes in the average wage between selected groups.<sup>12</sup> Second, I decompose changes in several inequality indexes so as to gauge whether the change in inequality is due to either changes in productive characteristics of the workers or changes in the prices that such characteristics can elicit from the market.<sup>13</sup>

Table 3 shows that the proportion of inequality between groups in total inequality has declined for most groups under consideration between 1977, 1992 and 2000. Differences according to gender and age have declined in both periods. However, differences according to function (i.e., salaried worker vs. self-employed), activity, (e.g., industry, utilities, commerce, etc) and location (i.e., federal states) first declined and then rose, but to levels equal or lower than in 1977. The most important change, though, refers to changes in schooling. In 1977, differences in average wages among different groups of workers according to their education (i.e., workers with no schooling, primary schooling, high school and collage) represented one quarter of total inequality, whereas in 1992 and 2000 it represented around 15%. Inequality by type of occupation, being very much related to education, shows a similar pattern.

From this one can conclude that the decline in wage inequality between 1977 and 1992 is somehow associated to less inequality due to education. This leads to two additional questions. First, Is education less important in explaining inequality between 1977 and 1992 because of a more equitable distribution of human capital accumulation or because

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<sup>12</sup> The class of generalized entropy measures of inequality can be exactly additively decomposed into between and within groups inequality. For an explanation of this decomposition see Cowell (2000).

<sup>13</sup> This decomposition technique was first developed by Juhn, Murphy and Pierce (1993).

the returns to education have declined? And, second, what explains the rise in inequality between 1992 and 2000?

Table 4 shows the decomposition of several inequality indexes into a portion due to changes in observable characteristics of the workers (e.g., age, education, occupation, economic activity, etc), a portion due to changes in the returns to these characteristics in labor markets and a residual due to unobservable phenomena. The decline in inequality between 1977 and 1992 is largely due to a decline in differences in the prices of productive characteristics. This is compatible with the fall of inequality according to groups of education reported in the paragraph above. Table 5, which reports the earnings equations that support the decomposition, confirms this finding: in 1977, individuals with some college education earned on average 70% more than individuals with some primary education, controlling for other characteristics, whereas in 1992 this gap declined to 50%. Other productive characteristics such as prime age (i.e. age between 45 to 54), which can be associated to accumulated human capital through work experience, also registers a decline in its price in the labor market.

The cause of the rise in inequality between 1992 and 2000 is more difficult to establish. In Table 4 one can see that unobservable variables account for most of the increase.<sup>14</sup> This is compatible with the decline in the goodness of fit of the regressions in Table 5. In 1992, the earnings equation explained 45% of total variation in wages, whereas it only explained 27% in 2000. Price of productive characteristics also contributed to increasing inequality but it was not due to a recovery of the returns to human capital. The returns to education and experience continued to fall. On the other hand, the returns to occupations such as “executives and other managerial positions” as well as the returns to being a public sector worker have increased to levels even higher than in 1977.

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<sup>14</sup> Actually, unobservables represent more than 100% of the change in the Gini between 1992 and 2000. On the other hand, change in prices represent another 17.8% and changes in characteristics -20.1%. This means that if productive characteristics of workers had not changed between 1992 and 2000, the increase in the Gini coefficient would have been 20.1% larger than it actually was.

The fall in the returns to education and experience has two plausible explanations: It can be that the fall in capital accumulation reported in former section 2.1 has led to a decline in the demand for skilled labor and hence a fall in the price paid for human capital accumulation.<sup>15</sup> It can also be the case that the quality of education has worsened and so the productivity of having additional schooling.<sup>16</sup> Of course, both factors may have happened simultaneously.

The growing effect of unobservable variables on wage inequality may also have two conceivable reasons. On the one hand, it may be that the labor market in the late nineties is demanding for different characteristics that are not included in the econometric models reported in Table 5 so the exercise fails to identify the new sources of inequality.<sup>17</sup> It is usually claimed that informal employment does not pay for observable/conventional productive characteristics of the workers, because activities in this sector are characterized by low capital/labor ratios and mainly serve a survival strategy for unemployed urban workers. On the other hand, it may be that there is more stochastic variation in wages, which could be associated to a more difficult job search process in the Venezuelan labor market. An indirect evidence for both points is shown in Figure 8 where it can be seen that unemployment and informal employment rates are higher in 2000, than in 1992 and 1977.<sup>18</sup>

In conclusion, it can be said that earnings inequality in Venezuela declined between the late seventies and the early nineties and rose again in year 2000 to levels similar in the seventies. The decline in inequality is associated to a fall in the return to human capital accumulation represented by schooling and work experience (as measured by age). This

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<sup>15</sup> There is abundant evidence that capital and skilled labor are complementary factors of production so a fall in investment should be associated with a fall in the demand for skilled labor. See for instance, Hammermesh (1993)

<sup>16</sup> The article by Pritchett and Ortega in this book shows some evidence in this direction. For a vivid recount of the problems of public education in Venezuela, see Bruni-Celli (2003)

<sup>17</sup> In other words, the regressions would have a problem of omitted variables.

<sup>18</sup> In fact, search models predict that a more inefficient job market, due to severe information asymmetries that difficult job matching between job seekers and firms, would entail longer employment duration and higher unemployment rates (see, for instance Mortensen, 1986) Márquez and Ruiz-Tagle (2004) find evidence that the job search in Venezuela has become more difficult for individuals without previous experience.

fall in the returns to human capital would have led to a further decline in wage inequality had it not been for unobservable factors, perhaps associated to unstable labor markets, that have increased the dispersion of wages in more recent years.

### 2.2.2. Size distribution of income

Given the results on factorial income and labor earnings distribution from the two former sections, we now know that the share of labor within national income has declined since the late seventies and, in addition, labor income inequality declined from the late seventies until the mid-nineties and rose again since. Is there something that can be said about size distribution of income? I advance here two answers: one empirical and the other theoretical.

The empirical answer consists of measuring personal income inequality with an index that does not require information on all sources of income for all individuals in the society. Assuming that individuals in the bottom of the earnings distribution do not have any capital income enables to compute the income share of the poorest 20% of the population with data from the Venezuelan household survey and the system of national accounts. Table 6 shows the accumulated labor of the poorest 20% of the population as a percentage of national gross domestic income. These figures suggest that inequality has increased from the early seventies to the early 2000s because the share of the poorest quintile of the population has declined from 2,7% to 1% of national disposable income for the period under study.

These results have two drawbacks, though. First, reported labor earnings in the household surveys do not include all labor costs but only what is known as take-home-pay. So total accumulated labor take home pay represent less than total labor payments to the poorest quintile.<sup>19</sup> Second, the income share of a poorest quintile group of the population is not a

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<sup>19</sup> If, in addition, one thinks that the reporting of take-home pay varies over the years, the results may be less informative. I assume that this is not the case.

Lorenz consistent inequality measure and, thus, it might not provide a unique ranking of inequality between several periods.<sup>20</sup>

The theoretical answer stems from the decomposition properties of some inequality indexes. There are in the literature a few techniques for decomposing inequality indexes into inequality in each factor income. For instance, Cowell (2000) decomposes the square of the coefficient of variation of total income ( $C_Y^2$ ) as follows:

$$C_Y^2 = \lambda^2 C_{Y_L}^2 + (1 - \lambda)^2 C_{Y_K}^2 + 2\lambda(1 - \lambda)C_{Y_L}C_{Y_K}\rho$$

where  $C_{Y_L}$  ( $C_{Y_K}$ ) stands for the coefficient of variation of labor (capital) income,  $\lambda$  stands for the share of labor within national income and  $\rho$  is the correlation between labor and capital income. Assuming this last component is equal to one (1), then:

$$C_Y = \lambda C_{Y_L} + (1 - \lambda) C_{Y_K}$$

so:

$$\frac{\partial C_Y}{\partial \lambda} = (C_{Y_L} - C_{Y_K}) < 0$$

and

$$\frac{\partial C_Y}{\partial C_{Y_L}} = \lambda > 0$$

Namely, total income inequality declines with a rise in the share of labor (assuming, as is usual, that labor income is less unequally distributed than capital income) and rises with a

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<sup>20</sup> Lorenz consistent inequality measures are those that comply with a series of axiomatic conditions that make these indexes to provide unambiguous rankings of inequality among income distributions with non-crossing Lorenz curves. For a formal explanation see Cowell (2000) or Fields (2001)



rise in labor income inequality.<sup>21</sup> Therefore given that between the late seventies and the mid-nineties both the share of labor and labor income inequality fall, the former effects move in opposite directions so one may compensate the other and no unambiguous answer can be given. On the other hand, since the mid nineties labor share has continued to decline and labor income has become more unequal. These two facts lead to the conclusion that personal distribution of income has become more unequal since the mid nineties.

Despite their limitations, both tentative answers hint in the same direction. The size distribution of income in Venezuela seems to have been stable from the late seventies to the mid nineties but have become more unequal from the early nineties to the early 2000s.

### 2.2.3. Poverty

For some researchers it is poverty, rather than inequality, what is the main subject of concern in distributive matters. Measuring poverty requires a well-thought selection of indexes, recipient units and welfare indicators.<sup>22</sup> These technical aspects, together with the political implications of the subject, make discussions on poverty levels very contentious anywhere.

There is a wide consensus that the Venezuelan economy had an alarming increase in poverty from the early eighties to the late nineties.<sup>23</sup> The main difference among studies was on the level of poverty, given the different poverty lines that were used. Analytically, however, there was no doubt that poverty had increased in the period because average

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<sup>21</sup> A similar result can be obtained from the factor decomposition of the Gini coefficient by Fei-Ranis-Kuo (1980), if assuming also that the correlation between labor income and capital income stays very high. If one is not willing to assume high correlations of income, the subject of decomposing inequality into inequality of factor components becomes intricate (see Lerman, 1999). In this case, the evolution of total income inequality depends on the evolution of inequality in each factor, the evolution of factor shares and the evolution of the relationship between each factor and income ranks.

<sup>22</sup> For a thorough discussion on the methodology of measuring poverty, see Ravallion (1994).

<sup>23</sup> See, for instance, World Bank (1991), Márquez (1995), Riutort (1999).

wages, labor productivity and output per capita all registered a persistent decline during the eighties and nineties.

The record of poverty since the late nineties, however, is more contentious. The Venezuelan economy underwent a severe political crisis in year 2002 that produced a GDP decline of more than 15%. However, it has enjoyed a new upsurge of oil prices since, which has launched the economy to rates of growth above 7% yearly. The National Statistics Office (INE) has developed a new series of poverty lines since 1997 and according to these figures poverty indeed rose during the years 2002 and 2003, but declined since to levels similar to 1998.<sup>24</sup>

The problem with these figures is that, as we explained in the former section, a large percentage of workers do not report their wages in recent household surveys (see Figure 7). In order to deal with this problem the INE imputes earnings on those who do not declare them, using fitted values from earnings equations. Even though this is a legitimate and often used procedure, it has the shortcoming that, since individuals are imputed the expectation of earnings conditional on observable characteristics, those who happen to have lower than expected earnings will be imputed the (higher) conditional average which, necessarily, will underestimate poverty.<sup>25</sup> A second problem with recent poverty figures by INE is that the welfare unit considered includes not only labor income, but also transfers and other sources of income. Using as encompassing as possible a measure of income is commendable but two drawbacks derive from it in this case. First, the data on other sources of income (transfers, but specially rents and other sources of

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<sup>24</sup> See INE (2006). In addition to poverty measures according to poverty line methods, INE has also computed poverty measures according to “basic needs” methodology as well as the HDI (i.e., human development index) for the country. The United Nations Development Program as well as other institutions such as the Universidad Católica Andrés Bello have also computed different poverty indexes. In this paper I concentrate on poverty line measures. Admittedly, this is a restricted view of poverty but it has the advantage of allowing us to relate economic growth and productivity performance to distributional concerns, which is the main subject of the paper.

<sup>25</sup> In addition, there may be several doubts on the suitability of the specification as well as the estimation techniques used for these imputations. Additionally, one may question whether the earnings equation used are coherent over time.

non-labor income) are seriously misreported in the survey.<sup>26</sup> Second, questions on non-labor income are included in the sample questionnaire only since 1997, which impedes long-run comparisons.

In Figure 9 I include a series of poverty headcount measures for the period 1980-2005 using reported monthly family labor earnings per capita along with official INE figures since 1997.<sup>27</sup> The differences in levels among indexes for the period 1997-2005 are due to the inclusion of other sources of income and to imputation, but the trends are the same. In order to make as robust as possible a long-run comparison of poverty we choose the same three years that in former section 2.2.1 on earnings inequality.<sup>28</sup> This enables us to examine the evolution of poverty independently of concerns on missing data. In addition, it allows to studying the trends in poverty as a result of labor market performance only.

According to Figure 9, poverty headcount in Venezuela doubled every decade between 1980 and 2000. It was 7.0% in 1980, 15.1% in 1992 and 29.9% in 2000. What is the origin of this dire outcome? One could first hypothesize that the increase in poverty is due to a growth in a vulnerable population group. In other words, poverty rose because the growth of a group of individuals whose demographic or economic characteristics make them more likely to suffer poverty. Table 7 reports a decomposition of the poverty headcount by population groups according to household head characteristics, geographic location of the household and household size.<sup>29</sup> The share of some vulnerable groups within total population, such as female headed households and households with unemployed heads, did go up but the proportion of other vulnerable groups, such as of households with unschooled heads, went down or stayed constant (e.g., proportion living

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<sup>26</sup> Concern with the quality of data in recent Venezuelan household surveys is also found in García-Verdú (2006).

<sup>27</sup> The poverty line used for computing the headcount is the line devised by the INE since 1997 called “canasta básica alimentaria” (i.e., basic needs food basket). For the period 1980-1997 I use a poverty line devised by the Venezuelan National Institute for Nutrition (INN) and the OCEI (former name of the INE), which was used for other studies such as Márquez (1995). Both lines are very close in US dollar terms to the World Bank’s one-dollar a day poverty line. No adult equivalent scales are used in either measure.

<sup>28</sup> Actually, I use year 1980 as the oldest year (instead of 1977), because no official poverty line is available before that year. The percentage of missing observations in 1980 is ever lower than in 1977 (see Figure 7).

<sup>29</sup> The poverty headcount, being a member of the Foster-Greer-Thorbecke class of poverty indexes, can be exactly decomposed into a population-weighted mean of sub-group poverty measures. See Ravallion (1994).

in impoverished areas like the Andes and the Plains). In contrast, the poverty incidence of every group went up remarkably. Therefore, national poverty increased because poverty incidence grew for every population group. Does this mean that the fall of income affected everybody the same? In other words, is this growth in poverty only due to the collapse of national income or there is a distributive cause as well?

Table 8 shows a decomposition of the change in poverty headcounts by growth and inequality components, for the periods under consideration.<sup>30</sup> For the period 1980-1992, the increase in poverty is totally due to the fall in average labor income. Actually, the decline in wage inequality for this period (reported in former section 2.2.1) would have made poverty 31.4% lower (i.e., 2.6 percentage points lower). On the other hand, for the period 1992-2000, the growth in poverty is due in almost equal parts to the fall in average labor income and the rise in wage inequality. For the whole period (i.e., 1980-2000) the fall in labor income explains nearly three fourths (73%) of the growth in poverty and the remainder (27%) is explained by a larger wage inequality.<sup>31</sup>

This analysis, being restricted to labor income, fails to take into account other sources of income and transfers that do affect welfare levels and poverty. However, it does indicate in what measure families and individuals are able to lift themselves out of poverty with the most common source of income: their own labor. In this sense it can be safely said that poverty in Venezuela has increased mainly because of the persistent decline in average wages and labor productivity observed in Venezuela for the period under study (i.e. 1975-2005).

Figure 10 shows the decline in average real wages and national income accrue to labor per worker. Both trends register its lowest levels for the period in 2005. GDP per worker and GDP per head also show a mostly declining trend until 2002 but also show an important rebound since. This suggests that the decline in poverty in recent years reported

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<sup>30</sup> The change in a poverty measure of the Foster-Greer-Thorbecke class can be decomposed into a change due to changes in income growth, assuming constant income inequality, and a change in income inequality assuming constant income. In this case we follow the methodology developed by Kolenikov and Shorrocks (2005).

<sup>31</sup> In Figure 5 and Figure 6 it can be seen that wage inequality grew between 1980 and 1992.

by official sources is mostly due to a redistribution of income from sources other than labor. This fact, together with the formerly reported large size of the share of the state-owned oil industry within national income calls for a close study of the redistribution of income in Venezuela.

### 3. Redistribution of Income

Given the structure of the factorial distribution of income explained in section 2.1, it is natural to think that government intervention is paramount in determining the after net taxes distribution of income in an oil-rich economy, particularly since nationalization of the oil industry in 1975. The massive size of the capital share from oil-production ascribed to the government implies that the personal distribution of income will very much depend on how the government spends its disposable income.

A detailed analysis of the redistribution of income requires microdata with information not only of incomes but also of taxes paid and subsidies received by individuals and families.<sup>32</sup> Such data are not yet available in Venezuela but a simulation exercise could shed some light on the distributional effect of taxes and government expenditures. Seijas et al. (2003) do such an exercise for Venezuela. They allocate different percentages of tax incidence to families across the income distribution based on various assumptions of tax incidence by type of tax and by income and consumption patterns among families in different income strata. Similarly, they distribute social expenditures across the income distribution according to the income and consumption patterns of families in a living standards survey.

The authors find that the Venezuelan fiscal system is slightly progressive, almost proportional. They report that taxes range from very progressive (such as the corporate and personal income tax) and progressive (such as the Social Security contributions) to mildly regressive (such as the value added tax). The total system is slightly progressive (a

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<sup>32</sup> For examples of studies on the evolution of redistribution see, for instance, Atkinson (1999), Zandvakili, Sourushe (1994). For a text on the techniques for measuring tax incidence and redistribution see Lambert (2002)

Suits index between 0.02 and 0.08)<sup>33</sup>. Social expenditure, however, is found to be progressive:

*“The lowest income group (bottom twentieth quantile), which concentrates 0.65% of total income, receives 8.2% of total social expenditure, whereas the highest income group (top twentieth quantile), which gets 28.48% of total income, receives 1.2% of total social expenditure”<sup>34</sup>*

In fact, they compute Gini coefficients for the distribution of income among Venezuelan families, before taxes and social expenditures, after taxes and after taxes and expenditures. Table 9 shows these figures. According to their calculations, the tax system reduces inequality of income between 1% and 5%, depending on method, and social expenditures reduces inequality a further 20%.

The Seijas et al. (2003) study has some limitations. First, it makes use of a consumption survey from 1997 and several modifications to the Venezuelan tax system have taken place since. Hence, no evolution of the redistribution can be traced. Second, their assumptions on incidence are extreme (e.g., 100% of payroll tax is bore by employees). Third it leaves out of the picture the oil-related taxes such as taxes on income for oil companies and royalties which, as will be explained in section 3.2, represent the largest share of government revenues. Fourth, and perhaps most important, the growing weight of the value added tax within total government incomes since the mid nineties may have made the Venezuelan tax system more regressive than accounted for in the Seijas et al. study. However, I think the study makes the valid point that most income redistribution in Venezuela takes place mainly through social expenditures. Since the tax income is almost neutral, this redistribution is mostly financed with revenues from the oil industry and, thus, the evolution of redistribution of income depends critically on how the budget is spent and on the collection of these revenues.

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<sup>33</sup> The Suits Index is a measure of the progresivity of a tax. It ranges from -1 to +1. The tax is more progressive (regressive) the closer the Suits index is to +1 (-1). A proportional tax has a Suits index equal to zero. See Suits (1977).

<sup>34</sup> Seijas et al. (2003), page 65. Translation by the autor.

As an alternative to a full incidence study, in the following sections I describe the evolution of social expenditures over a thirty-five-year period (section 3.1) and how this evolution is related to the collection taxes and the growth of the Venezuelan economy (section 3.2).

### 3.1. Social Expenditures

A measure of the re-distributive activity of the government is social expenditure per head. That is government expenses per-capita in activities that enhance social development such as education, health, sanitation, housing, pensions, etc. Social expenditure per head is the product of output per head and social expenditure per unit of output. The latter depends on the priority that the government gives to social expenditure within its total budget (also known as fiscal priority, FP) and the size of government outlays in the whole economy (also known as budgetary pressure, BP).<sup>35</sup> Hence, there are three components: the share of social expenditure within total government expenditure, the share of total government expenditure as a percentage of total GDP, and the GDP per head. Formally:

$$\begin{aligned} \frac{SX}{POP} &= \left( \frac{SX}{GDP} \right) \left( \frac{GDP}{POP} \right) \\ &= \left( \frac{SX}{TX} \right) \left( \frac{TX}{GDP} \right) \left( \frac{GDP}{POP} \right) = FP \times BP \times G \end{aligned}$$

where SX corresponds to social expenditure, TX to total government expenditure, GDP to gross domestic product and POP to total population. This formula implies that the capacity of the government to re-distribute income through public spending depends on the priority it gives to social expenditure in contrast to other public expenses such as defense and security, public administration or economic development.<sup>36</sup> It also depends

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<sup>35</sup> The terms budgetary pressure and fiscal priority are adopted from ECLAC (2001)

<sup>36</sup> It could be argued that there is also income redistribution through these other expenditures, but I will concentrate on social expenditures as the foremost channel of income redistribution.

on the size of the public budget within the whole economy and on the affluence of the economy. The larger any of these components, holding the others fixed, the larger the magnitude of public funding for social development. Hence, the evolution of social expenditure per head depends on the joint evolution of these three components.

Figure 11 shows the evolution of GDP per head as well as total and social public expenditure per capita since 1970. A very clear pattern emerges. After the decade of expansion in the seventies, the Venezuelan economy has undergone a permanent decline since 1979, interrupted only by two bouts of growth in the mid eighties, early nineties and the still ongoing that started in 2003. On the other hand, total government expenditure per head has remained stable in real terms since 1970, with the exception of two spurs that coincide with the oil booms of the years 1973 and 1980. More surprisingly, social expenditure per head has remained quite stable for the whole period.<sup>37</sup> This can only occur through an increase in the share of social expenditure within GDP. But, as explained above, the evolution of this share depends on changes in fiscal priority and budgetary pressure.

Figure 12 shows how the budgetary pressure and fiscal priority have evolved over time. The former (i.e., total government expenditure as a percentage of GDP) has remained around 22% from 1970 to 2000, with two sudden increases as a consequence of the oil booms already mentioned. In both cases, four years after the oil shock, budgetary pressure returned to where it was before. However, between the years 2000 and 2003, this rate has increased more than five percentage points, due to both more fiscal pressure and higher oil prices (see section 3.2 below).

On the other hand, fiscal priority (i.e., the share of social expenditure within total public expenses) remained around 32% between 1970 and 1989. In this period, it also registered two sudden declines that are just the reverse image of the upsurges in the budgetary

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<sup>37</sup> In this study I limit the definition of social expenditure to government outlays in education, health and social security. These items usually represent the largest share of social expenditure, and there is little disagreement about its social development nature. Other researchers include expenditures in housing and social assistance. I do not have regular data on these items and prefer to restrict the analysis to the aforementioned sectors.



pressure. From 1990 to 1994, social expenditures reached the 40% level. This effort made possible that, despite the steady budgetary pressure around 22%, the share of social expenditure within GDP surpassed the 10% mark for the first time in all this period. For the years 1995 to 2003, social expenditure has been below the 40% mark, with the exception of years 1999 and 2000. Consequently, social expenditure hovers the 10% mark since 1999 as a consequence of both growing budgetary pressure and higher fiscal priority.

The percentage change in social expenditures per head is approximately equal to the sum of the percentage change in each component. Formally:

$$\frac{\Delta SX/POP}{SX/POP} = \frac{\Delta FT}{FT} + \frac{\Delta BP}{BP} + \frac{\Delta G}{G} + \Theta$$

where the term  $\Theta$  denotes all the interactions among the three rates of change.<sup>38</sup> When applying this decomposition to the evolution of social expenditure in Venezuela it gives us an account of the relative size of each component in the evolution of social policy in the country. Using a three-year average series, social expenditure per head fell -2.3% between 1972 and 2003.<sup>39</sup> This very stable record is the consequence of counterbalancing forces of a decline in output per head (-24.8%) and an increase in budgetary pressure (+20.4%) and in fiscal priority (+8.2%), plus a negative interaction term (-5.9%) due to the big decline in output.

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<sup>38</sup> In fact, the decomposition of the differential of a product of three components defined as  $z=abc$  is:

$$\Delta z = bc\Delta a + ac\Delta b + ab\Delta c + c\Delta a\Delta b + b\Delta a\Delta c + a\Delta b\Delta c + \Delta a\Delta b\Delta c$$

Dividing by  $z$ , we get:

$$\begin{aligned} \frac{\Delta z}{z} &= \frac{\Delta a}{a} + \frac{\Delta b}{b} + \frac{\Delta c}{c} + \frac{\Delta a}{a} \frac{\Delta b}{b} + \frac{\Delta a}{a} \frac{\Delta c}{c} + \frac{\Delta b}{b} \frac{\Delta c}{c} + \frac{\Delta a}{a} \frac{\Delta b}{b} \frac{\Delta c}{c} \\ &= \frac{\Delta a}{a} + \frac{\Delta b}{b} + \frac{\Delta c}{c} + \Theta \end{aligned}$$

The smaller the differential in each component, the smaller the interaction term  $\Theta$  and the closer the approximation.

<sup>39</sup> I use a three-year average to somehow avoid the arbitrariness of 1970 and 2003 as initial and final years.

This 30-year decomposition lumps up several phases. Table 10 shows the decomposition for six five-year periods that coincide with six different presidents in office.<sup>40</sup> It can be seen here that the social expenditure was not stable all over the period. It had several growth and fall phases, all of them for different motives. It is interesting to highlight the reasons that explain the expansion periods. In the period 1974-1978, the growth in social expenditure was due to an expansion of budgetary pressure. In the period 1989-1994, it was due to an expansion of fiscal priority. Finally, in the period 1999-2003, it was due to a joint expansion of fiscal priority and budgetary pressure that more than compensate the huge decline in output that occurred in that period.<sup>41</sup>

Is the social expenditure more volatile than other aggregate magnitudes in Venezuela? The stability of real social expenditure per head shown in Figure 11 over the 30-year period indicates that it is more stable than GDP per capita and total expenditure per capita. In addition, Puente (2004), argues that the coefficient of vulnerability for social expenditure in Venezuela is 0.34, which means that social expenditure variations are two thirds smaller than variations in total government expenditure.<sup>42</sup> Further, following Ravallion (2002), the elasticity of changes in social expenditure to changes in total expenditure can be obtained from a linear model of the form:

$$\Delta \ln SX_t = \alpha + [\gamma_1 \delta_t + \gamma_2 (1 - \delta_t)] \Delta \ln TX_t + \varepsilon_t$$

where,  $\gamma_1$  refers to elasticity in periods of increasing total expenditure and  $\gamma_2$  the elasticity in periods of declining total expenditure, and  $\delta_t$  is a dichotomous variable that equals one

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<sup>40</sup> The period 1989-1994 includes two presidents. This is because the impeachment of the president in office and its replacement by an interim president during the last year of the period.

<sup>41</sup> These general trends are confirmed when comparing five year averages instead of presidential period year ends. See second panel of Table 10.

<sup>42</sup> The coefficient of vulnerability is the ratio between the percentage change in expenditures for a certain area to the percentage change in total expenditure. See Puente (2004)

in periods of growing total expenditure. Table 11 shows the results of running this model by different methods.<sup>43</sup>

The results are quite stable and show an elasticity not significantly different from one in recessions and not significantly different from zero in expansions. This means that, changes in social expenditure are affected by reductions in total government expenditure, but do not benefit from expansions in total outlays. However, this is just a contemporaneous, short-term, elasticity. When lagging the independent variable one period the difference between expansion and recession periods is small (or not significant) and elasticity is around 35%. This means that, after an adjustment, social expenditures are restored to previous levels. Actually, it implies that social expenditures are protected in the medium term: after two years, they grow in expansions and decline in recessions less than total expenditures.

In conclusion, social expenditure in Venezuela is remarkably stable in the long run. There are noticeable short-term changes as a consequence of its dependence on GDP performance. However, unfavorable shocks have been compensated by increases in budgetary pressure and fiscal priority, which have sustained the social expenditure per head over time.

This stable social expenditure, however, may mask serious development problems. First, a stable expenditure may hide problems in the quality of social services. It is been indicated in several studies that the quality of education and health related services in Venezuela have eroded lately. Second, the stability of social expenditure may have been done at the expense of other much-needed investments such as in infrastructure or public administration (think, for example, in the need for a competent judiciary or a well maintained roads network). There is also evidence that these areas have been much

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<sup>43</sup> I run a OLS model, a Prais-Winsten correction in order to cope with autocorrelation in the error terms and then instrument the independent variable for its lagged value in order to control for possible endogeneity.

neglected.<sup>44</sup> Third, a stable social expenditure is not necessarily good news because developing countries require a growing social expenditure in order to attain higher standards of living. In other words, it can be said that Venezuela has stagnated in term of social expenditures to the levels of the early seventies. Further accumulation of human capital requires more expenditure in social issues.

### 3.2. Taxation

After studying the re-distributive activity of the government through social expenditure it is natural to ask how this is funded. Obviously, this is financed with government revenues and debt. Hence the net re-distributive effect of the government will also depend on the distributive incidence of government revenues, especially taxes. However, as explained in the opening of section 3, no microdata are available in this study for a detailed exploration of tax incidence across the income distribution among families in Venezuela.

Table 12 shows the evolution of different sources of government revenues for financing total expenditure since 1970. Taxes on income have the largest share up until the mid nineties when non-taxes come to represent 30% or more of fiscal revenues. This is the result of a change in the tax policy of the Venezuelan government towards oil firms. This new policy has a higher reliance on taxes on oil exploitation than on taxes on income.

The other interesting change is the surge of taxes on consumption of goods and services. Since its introduction in 1993, and after several changes, the value added tax (VAT) has come to represent the largest component of taxes on consumption making this group to rise from an average 5% of total government expenditures in the seventies and eighties, to a 20-30% participation since the mid nineties. This change, considering that value-added taxes are usually regressive, could make us think that the tax collection in

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<sup>44</sup> The paper by Rodríguez and Pineda in this book highlights the problems of lacking infrastructure in Venezuela. Jaén (2003) and Monterferrante (2003) provide a summary of the decay in health and public security services in Venezuela.

Venezuela has become less progressive, but as explained by Seijas et al. (2003), in this case the VAT is full of exemptions and differential tariffs that make it less regressive.<sup>45</sup>

Taxes on income are largely composed by taxes on the oil industry, and that is the reason why these taxes show remarkable peaks in oil prices boom years 1974 1980 and 1990. Non-taxes are also highly connected to the oil industry because they include royalties on oil production. Hence, the relevant classification of funding of government expenditures is by oil and non-oil related activities. Figure 13 shows the share of oil revenues and debt within consolidated central government expenditure. It can be seen that this share is highly volatile and closely related to international oil prices. In periods of sudden rise of oil prices, the share of oil revenues stays above 60% of total expenditures. For instance, in 1974, 1980, 1990 and 2000. When oil revenues fall below the 60% mark, the government registers a deficit that has been financed with either foreign debt (period 1976-1978), international reserves (period 1986-1988) or domestic debt (since 1998).<sup>46</sup>

Notwithstanding this high volatility, as explained in section 3.1, social expenditure has been remarkably stable over the 30-year period. This has been the consequence of an increase of the fiscal priority that several governments have given to social expenditure and, since 1994, to a rise in budgetary pressure. Given that the budgetary pressure is equivalent to revenues and fiscal deficit/surplus per head, we can identify the sources of funding for the bigger budgetary pressure. Formally:

$$BP = \left( \frac{TX}{GDP} \right) = \left( \frac{TR + F}{GDP} \right) = \left( \frac{OR}{GDP} \right) + \left( \frac{NR}{GDP} \right) + \left( \frac{F}{GDP} \right)$$

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<sup>45</sup> As it was mentioned in the introduction of section 3, there may be some doubts on the neutrality of the tax system in Venezuela, particularly since the introduction of the VAT in the mid nineties. In any case, Venezuela has one of the lowest incidences of this tax in the region. The revenue productivity (i.e., ratio of effective tax rate to statutory tax rate) by year 2000 is 0.31, which is similar to Mexico (0.30) but lower than for Chile (0.58), the average for the Latin American region (0.38) or the OECD (0.54). The VAT revenue as a percent of total consumption is 4.5%, again similar to Mexico (4.5%) but lower than Chile (10.5%), the Latin American average (6.7%) and the OECD average (9.3%). See Singh et al. (2005), p.34.

<sup>46</sup> Data since 1998 are preliminary for both sources (i.e. for the IMF and the Venezuelan Ministry of Finance). In addition, both sources do not fully coincide in their reporting of oil revenues and deficit/surplus of the period. While the IMF registers a persistent deficit (above 10% of total expenditure) the Ministry of Finance shows a pattern more in line with the previous trend. Given the preliminary nature of the sources I prefer to present both.

where TR stands for total revenues and F for fiscal surplus/deficit. Then total revenue can be decomposed into oil related revenues (OR) and non-oil related revenues (NR). Therefore, percentage changes in budgetary pressure must be financed by the summation of relative changes in each of its components. That is:

$$\frac{\Delta BP}{BP} = \left( \frac{\Delta OR/GDP}{BP} \right) + \left( \frac{\Delta NR/GDP}{BP} \right) + \left( \frac{\Delta F/GDP}{BP} \right)$$

Using this decomposition we can gauge the sources of the changes in budgetary pressure that were documented in section 3.1. Table 13 shows that the oil-related revenues have declined period after period, with the exception of the most recent (i.e., 1999-2003). This fact is clearly illustrated in Figure 14 where it can be seen that, despite its sudden peaks, the relative size of oil-related fiscal revenues have a declining trend until 1996. This trend is associated with the persistent fall in budgetary pressure and is only compensated by the rise of value-added tax and the use of deficit financing during the period 1994-1998. The following period enjoys a considerable rise in oil-related taxes that make possible the rise of budgetary pressure without additional fiscal efforts.

Table 14 shows the aggregate expenditure and its sources of funding in real terms by political period. It can be seen that, until 1993, one half of total expenditure is funded by taxes on income from the oil industry. Since 1993, the introduction of the VAT has made taxes on consumption to represent one third of total expenditure. Non-taxes, which basically include taxes on oil exploitation (royalties), have also increased their share of total expenditure, especially since 1998. According to IMF figures, financing of the deficit through public debt has come to represent 13% of total real expenditure recently<sup>47</sup>.

In summary, it can be said that the recent rise in budgetary pressure have been the combination of two factors. First, since the mid nineties, the introduction of the value-

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<sup>47</sup> As explained in a previous footnote, the IMF figures are preliminary. According to data from the Venezuelan Ministry of Finance, also preliminary, there is no deficit financing but a 1% surplus. I keep the reference to IMF figures for the sake of consistence of the analysis over time.

added tax as well as the use domestic financing of increasing budget deficits offset the recurrent fall in oil-related fiscal revenues. Second, since year 1999, an increase in international oil prices have produced a new rise of oil-related fiscal revenues that have allowed the Venezuelan government to revamp its expenditure without additional fiscal efforts.

### 3.2.1. Social Security Contributions

Social security is one of the most important mechanisms for redistribution in advanced societies. By collecting contributions from the workforce and distributing pensions and health services to pensioners, social security may effectively distribute income over time, among generations and/or income strata.<sup>48</sup> The Instituto Venezolano de los Seguros Sociales, was created in the mid forties and provides social insurance for retirement, job accidents, unemployment and health services to the contributing workers and their family. Its finances depend on contributions paid by workers and their employers, as well as by transfers from the central government. As can be seen in Table 15, the latter source has become a predominant component of its total expenditure. From the mid-nineties, the Venezuelan Social Insurance is unable to cover at least one third of its outlays. This is the consequence, among other things, of the decline in the percentage of the labor force that contributes (it falls from 35% in the mid seventies to less than 25% in 2003) and a rise in the number of beneficiaries per contributor (from 2.6 to 4.0 in the same period). Table 16 shows that, by year 2003, the system is collecting from a smaller share of the population (less than 9%) and taking care of larger share of it (36%).

Since the mid nineties, several proposals for reforming the system have been launched, but none has been adopted. Consequently, given the decline in contributions and growing population needs, the central government is financing a larger share of social security. In other words, it is turning a social insurance system into a social assistance system. It is doing so through sources of revenue other than contributions and, hence, is making the

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<sup>48</sup> For a textbook reference on the economics of social security see Barr (2004), chapter 9.

system more progressive. As was explained before, this redistribution hinges not on collecting proportionately more on better-off workers but on the availability of oil-related fiscal revenues, value-added taxes and public debt.<sup>49</sup>

#### 4. Conclusions

The former analysis of income distribution and redistribution in Venezuelan over the last three decades can be summarized with three general statements. First, income distribution in Venezuela appears to be more unequal and poorer in recent years than in the early seventies. Second, this unfavorable evolution is associated to the fall in capital accumulation, which, in turn, is the cause of the growth collapse that has been documented here and elsewhere. Third, the decline in capital formation does not seem to be associated to initial inequality but perhaps it is related to consequent re-distributive policies. Hence, it can be said that the Venezuelan growth collapse has led to more inequality and poverty and re-distributive efforts have by some means affected economic growth. Let us elaborate each of these conclusions.

The factorial distribution of income has registered a persistent decline in the share of labor within gross national income. This decline coincides with a falling capital/labor ratio, which may be interpreted as a case where relatively cheaper labor substitutes capital but in a less than proportionate manner thus increasing the share of capital returns within national income. In addition, labor earnings inequality declined during the eighties because of a fall in the returns to human capital, but increased again during the nineties as a consequence of informalization of the labor market. Both phenomena can also be associated to the dearth of capital investment, which lowers demand for skilled labor and entails the creation of self-employment activities as last-resort survival strategy for urban families. The combination of a smaller labor share within national income with labor

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<sup>49</sup> In fact, as can be seen in Table 12, the share of social security contribution within total government expenditure has fallen from 6% in 1970 to 2% in 2003. Interestingly, according to the simulations by Seijas et al. (2003), the contributions to the Venezuelan Social Security System are only slightly progressive. The Suits index for payroll taxes and contributions is around  $-0.10$ .



earnings as unequal today as in the late seventies most likely implies that the size distribution of income is more unequal today than it was in the past.

The increasingly higher levels of poverty that have been recorded since the late seventies are mainly associated to the decline in labor productivity. Three quarters of the growth in the poverty headcount can be ascribed to the decline in average wages and the remaining quarter to the more unequal distribution of wages. Again, the fall in labor productivity that drives the rise in poverty must be somehow associated to the lack of productive investment so both worsening inequality and poverty can be associated to falling capital accumulation.

May the initial distribution of income or subsequent re-distributive policies have affected capital accumulation? This question may elicit two answers. On the one hand, it could be argued that capital accumulation was not affected by distributive matters. First, poverty and inequality in Venezuela in the mid seventies were much lower than in many other Latin American countries that did not suffer a growth collapse (see IADB, 1999). Second, fiscal proceeds have relied heavily on taxing the oil-industry, not the private sector. It was not until the mid nineties that a neutral or mildly regressive value-added tax was introduced which, does not have to affect investment and, if it had, the economy had already been falling for almost two decades.

On the other hand, it could be argued that re-distributive policies did affect capital accumulation. Social expenditures by the government have remained remarkably stable over the thirty-year period under study. This stability, in periods of falling oil-related fiscal proceeds, may have affected investment in other growth-related areas such as infrastructure and law enforcement, which are complementary inputs for capital formation. Similarly, the heavy reliance of the government on oil-industry fiscal proceeds may have affected the expansion of the oil industry and so forestalled the development of complementary private investments.

In any case, the theoretical literature warns us that the current situation of a more unequal and poorer income distribution may hinder future economic growth in Venezuela. Further re-distributive policies to ameliorate this situation may be counterproductive for growth. With the exception of the nationalization of the oil industry in 1975 and the introduction of the value added tax in 1993, no fundamental changes in the mechanisms of income distribution and redistribution have been put in place. Despite these two changes, the country still depends on the oil rent for financing social expenditures, the tax system is just moderately progressive and the social security system is mildly regressive, but unfunded.

Currently, the decline in poverty that has been registered by official sources has more to do with spreading of the proceeds from a new oil-prices boom than with a recovery of labor productivity. If the rents from oil production were to stagger, as they did in the mid eighties and nineties, social policies will require new funding. Foreseeable alternatives to oil-related fiscal proceeds such as nationalization of other industries, higher income or consumption taxes and larger collection of social security contributions may all be detrimental for capital accumulation. It is now that the distributive conflict will harshly affect future economic prospects for Venezuela.

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Table 1: Tests of unit-roots and cointegration for capital/labor ratio and factors share

Variable	Dickey-Fuller test	Critical values		
		1%	5%	10%
		(one lag, no trend)		
capital/labor income share	-0.996	-3,614	-2,944	-2,606
capital/labor ratio	-0.098	-3,614	-2,944	-2,606
residuals <sup>1</sup>	-3,677	-3,628	-2,950	-2,608
		(one lag with trend)		
capital/labor income share	-2,823	-4,196	-3,520	-3,192
capital/labor ratio	-1,261	-4,196	-3,520	-3,192
residuals <sup>1</sup>	-3,629	-4,214	-3,528	-3,197
<u>Source:</u>	Author's calculations			
<u>Notes:</u>				
	(1) residuals from equation in column 2 of table 2			

**Table 2:** Regressions of factorial distribution on capital/labor ratio

dependent variable: capital/labor share within national disposable income (excluding oil)					
	OLS		Prais-Winstein		
capital/labor ratio <sup>1</sup>	-0.3117 ***	-0.3313 ***	-0.2961 ***	-0.3121 ***	
	(0.0430)	(0.0576)	(0.0451)	(0.0614)	
capital/labor ratio (lagged difference)			-0.1348	-0.0906	
			(0.1684)	(0.1762)	
capital/labor ratio (lead difference)			0.0637	0.0636	
			(0.1901)	(0.1833)	
base 1957	-0.4472 ***	-0.4216 ***	-0.4548 ***	-0.4279 ***	
	(0.0538)	(0.0598)	(0.0582)	(0.0610)	
base 1968	-0.1674 ***	-0.1425 ***	-0.1767 ***	-0.1545 ***	
	(0.0401)	(0.0451)	(0.0467)	(0.0485)	
base 1984	0.1034 ***	0.1198 ***	0.0959 ***	0.1129 ***	
	(0.0236)	(0.0279)	(0.0255)	(0.0285)	
year trend	-0.0029 **	-0.0026	-0.0031 **	-0.0027	
	(0.0014)	(0.0017)	(0.0015)	(0.0017)	
constant	5.9821 **	5.3682	6.1844 **	5.5492	
	(2.7790)	(3.3616)	(2.9566)	(3.4954)	
Observations	45	45	44	44	
F(5,39)	379.44	252.53	309.6	162.14	
Adj R-squared	0.9773	0.9662	0.9797	0.9633	
Durbin Watson statistic	4.981	1.2873	5.065	1.31589	
Bresuch-Godfrey LM	5.215		5.562		
rho		0.3640		0.373114	
Source:	Author's calculations				
Notes:					
(1)	in logarithms				

**Table 3: Wage Inequality decomposition by groups**

	1977	1992	2000
Total <sup>1</sup>	0.3199	0.2265	0.3445
gender	1.1%	0.4%	0.1%
age	5.5%	3.8%	2.9%
education	24.7%	14.4%	15.9%
occupation	27.8%	16.7%	17.9%
function	9.2%	6.5%	9.1%
activity	6.4%	3.1%	4.8%
sector	0.2%	0.7%	1.8%
location	5.6%	3.0%	5.1%
<u>Source:</u> Author's calculations using INE (various years) Encuesta de Hogares por Muestreo			
<u>Notes:</u>			
(1) Given the additive decomposition: $G = G_b + G_w$ , each entry represents $G_b/G$ , where $G$ is the generalized entropy index with parameter 2, $G_b$ is the between groups component, and $G_w$ is the within groups component			

**Table 4: Wage inequality decomposition by productive characteristics and their returns**

	indexes <sup>1</sup>		differences <sup>2</sup>							
	1977	1992	total		due to characteristics		due to prices		due to unobservables	
Gini	0.391	0.328	-0.063	100.0%	0.007	-11.8%	-0.046	73.4%	-0.024	38.4%
90/10 percentile ratio	6.649	4.651	-1.998	100.0%	-0.278	13.9%	-1.328	66.5%	-0.392	19.6%
90/50 percentile ratio	2.750	2.273	-0.477	100.0%	-0.069	14.5%	-0.313	65.6%	-0.095	20.0%
50/10 percentile ratio	2.415	2.047	-0.369	100.0%	-0.040	10.9%	-0.248	67.1%	-0.081	22.0%
	1992	2000								
Gini	0.328	0.396	0.067	100.0%	-0.014	-20.1%	0.012	17.8%	0.069	102.3%
90/10 percentile ratio	4.651	6.818	2.167	100.0%	-0.259	-12.0%	0.284	13.1%	2.142	98.9%
90/50 percentile ratio	2.273	2.727	0.455	100.0%	-0.160	-35.1%	0.183	40.3%	0.431	94.9%
50/10 percentile ratio	2.047	2.500	0.453	100.0%	0.032	7.1%	-0.042	-9.3%	0.463	102.2%
	1977	2000								
Gini	0.391	0.396	0.005	100.0%	-0.005	-109.8%	-0.037	-807.9%	0.047	1017.7%
90/10 percentile ratio	6.649	6.818	0.169	100.0%	-0.489	-288.9%	-1.013	-598.5%	1.671	987.3%
90/50 percentile ratio	2.750	2.727	-0.023	100.0%	-0.162	712.6%	-0.125	549.9%	0.264	-1162.5%
50/10 percentile ratio	2.415	2.500	0.085	100.0%	-0.035	-41.6%	-0.290	-343.4%	0.410	485.0%
<u>Source:</u> Author's calculations using INE (various years) Encuesta de Hogares por Muestreo										
<u>Notes:</u>										
(1) refer to inequality measures for hourly wages										
(2) decomposition according to Juhn, Murphy and Pierce (1993)										



Table 5: Earnings equations for selected years

Dependent variable: hourly wage (in logarithms)		1977		1992		2000	
	coefficient	(s. e.)	coefficient	(s. e.)	coefficient	(s. e.)	
<b>Gender:</b>							
female	-0.286 ***	(0.005)	-0.187 ***	(0.005)	-0.149 ***	(0.012)	
<b>Age group:</b>							
less than 25 (omit)							
25 to 34	0.307 ***	(0.005)	0.195 ***	(0.006)	0.169 ***	(0.013)	
35 to 44	0.378 ***	(0.006)	0.295 ***	(0.006)	0.222 ***	(0.014)	
45 to 54	0.394 ***	(0.007)	0.328 ***	(0.008)	0.269 ***	(0.016)	
55 to 64	0.349 ***	(0.009)	0.328 ***	(0.010)	0.223 ***	(0.024)	
65 and more	0.251 ***	(0.015)	0.250 ***	(0.016)	0.081 ***	(0.031)	
<b>Schooling</b>							
no schooling	-0.240 ***	(0.006)	-0.164 ***	(0.009)	-0.166 ***	(0.021)	
some primary (omit)							
some high school	0.299 ***	(0.006)	0.177 ***	(0.005)	0.161 ***	(0.013)	
some technical college	0.608 ***	(0.035)	0.387 ***	(0.015)	0.317 ***	(0.025)	
some college	0.705 ***	(0.012)	0.500 ***	(0.010)	0.434 ***	(0.021)	
non-declared	-0.135 ***	(0.010)	-0.068 ***	(0.019)	0.101	(0.149)	
<b>Occupation</b>							
professionals and technicians	0.391 ***	(0.010)	0.309 ***	(0.009)	0.256 ***	(0.020)	
executives and other managerial positions	0.371 ***	(0.010)	0.354 ***	(0.014)	0.412 ***	(0.030)	
sales people, vendors and other white collar workers (omit)							
agricultural workers	-0.231 ***	(0.017)	-0.177 ***	(0.022)	-0.039	(0.046)	
mining workers	0.019	(0.035)	0.138 ***	(0.035)	-0.033	(0.104)	
drivers, pilots and others	0.029 ***	(0.010)	-0.014	(0.011)	0.070 ***	(0.026)	
artisans and operatives	-0.028 ***	(0.008)	-0.041 ***	(0.008)	0.022	(0.022)	
manufacturing operatives	-0.102 ***	(0.011)	-0.104 ***	(0.010)	-0.039	(0.030)	
service workers	-0.244 ***	(0.008)	-0.214 ***	(0.008)	-0.069 ***	(0.017)	
armed forces personnel and diplomats	0.207 ***	(0.029)	0.216 ***	(0.036)	0.113 **	(0.055)	
<b>Function</b>							
public sector (white collar) <sup>1</sup>	0.140 ***	(0.008)	0.103 ***	(0.009)	0.248 ***	(0.021)	
public sector (blue collar)					0.172 ***	(0.022)	
private sector (white collar) <sup>1</sup>	-0.076 ***	(0.006)	-0.069 ***	(0.006)	0.128 ***	(0.016)	
private sector (blue collar)					-0.022 *	(0.013)	
cooperative worker					0.041	(0.050)	
self-employed (omit)							
employer	0.436 ***	(0.009)	0.424 ***	(0.010)	0.328 ***	(0.031)	
<b>Economic Activity</b>							
agriculture	0.006	(0.016)	0.053 **	(0.022)	-0.137 ***	(0.044)	
mining	0.427 ***	(0.019)	0.143 ***	(0.023)	0.457 ***	(0.057)	
manufacturing	0.098 ***	(0.008)	0.146 ***	(0.008)	0.108 ***	(0.021)	
utilities	0.082 ***	(0.016)	0.117 ***	(0.018)	0.083 *	(0.046)	
construction	0.221 ***	(0.009)	0.139 ***	(0.009)	0.173 ***	(0.025)	
commerce	0.033 ***	(0.009)	0.069 ***	(0.009)	-0.003	(0.017)	
transportation and communications	0.177 ***	(0.011)	0.197 ***	(0.012)	0.155 ***	(0.029)	
finance	0.170 ***	(0.013)	0.201 ***	(0.011)	0.126 ***	(0.025)	
services (omit)							
<b>Geographic Location</b>							
Distrito Federal (omit)							
Anzoategui	-0.138 ***	(0.013)	-0.069 ***	(0.010)	0.063 **	(0.032)	
Apure	-0.480 ***	(0.046)	-0.058 **	(0.027)	-0.247 ***	(0.051)	
Aragua	-0.149 ***	(0.006)	0.010	(0.010)	-0.206 ***	(0.024)	
Barinas	-0.292 ***	(0.019)	-0.241 ***	(0.017)	-0.256 ***	(0.038)	
Bolivar	0.039 ***	(0.008)	0.010	(0.008)	-0.058 ***	(0.018)	
Carabobo	-0.049 ***	(0.006)	-0.064 ***	(0.010)	-0.092 ***	(0.024)	
Cojedes	-0.265 ***	(0.011)	-0.132 ***	(0.024)	-0.059	(0.064)	
Falcon	-0.190 ***	(0.008)	-0.186 ***	(0.013)	-0.229 ***	(0.019)	
Guarico	-0.208 ***	(0.008)	-0.045 ***	(0.013)	-0.043	(0.030)	
Lara	-0.264 ***	(0.007)	-0.183 ***	(0.011)	-0.326 ***	(0.018)	
Merida	-0.386 ***	(0.014)	-0.364 ***	(0.014)	-0.236 ***	(0.031)	
Miranda	0.035 ***	(0.009)	-0.005	(0.010)	0.003	(0.018)	
Monagas	-0.253 ***	(0.015)	-0.186 ***	(0.015)	-0.032	(0.027)	
Nueva Esparta	-0.245 ***	(0.016)	-0.222 ***	(0.015)	-0.419 ***	(0.046)	
Portuguesa	-0.105 ***	(0.008)	-0.196 ***	(0.014)	-0.295 ***	(0.021)	
Sucre	-0.249 ***	(0.014)	-0.198 ***	(0.011)	-0.377 ***	(0.033)	
Táchira	-0.474 ***	(0.015)	-0.370 ***	(0.013)	-0.311 ***	(0.025)	
Trujillo	-0.432 ***	(0.014)	-0.307 ***	(0.014)	-0.357 ***	(0.038)	
Yaracuy	-0.225 ***	(0.008)	-0.196 ***	(0.016)	-0.325 ***	(0.034)	
Zulia	-0.231 ***	(0.008)	-0.150 ***	(0.009)	-0.202 ***	(0.017)	
Amazonas			-0.106 ***	(0.023)	-0.143 ***	(0.035)	
Delta Amacuro	-0.096 ***	(0.014)	-0.087 ***	(0.011)	-0.206 ***	(0.024)	
Constant	3.263 ***	(0.015)	5.597 ***	(0.015)	8.091 ***	(0.032)	
Number of obs	223990		94477		27134		
F(56, 27077)	1605		727		154		
Prob > F	0.000		0.000		0.0000		
R-squared	0.546		0.448		0.2708		
Root MSE	0.482		0.449		0.6611		
Source: Author's calculations using INE (various years) Encuesta de Hogares por Muestreo							
Notes:							
(1) in 1977 and 1992 it includes both white and blue collar workers							

**Table 6: Income share of the poorest quintile**

			Income share of the poorest quintile <sup>1</sup>			
	1977		2.7%			
	1992		2.3%			
	2000		1.0%			
<u>Source:</u>	Author's calculations using INE (various years) Encuesta de Hogares por Mue					
<u>Notes:</u>						
(1)	Refers to accumulated take-home pay					
	by the 20% poorest individuals (defined by monthly labor income per head)					
	as a percentage of non-oil national disposable income					

**Table 7: Poverty Headcount decomposition by household groups**

	1980			1992			2000		
	Poverty Incidence <sup>1</sup>	Group share within total population	Proportion of total poverty index <sup>2</sup>	Poverty Incidence <sup>1</sup>	Group share within total population	Proportion of total poverty index <sup>2</sup>	Poverty Incidence <sup>1</sup>	Group share within total population	Proportion of total poverty index <sup>2</sup>
TOTAL	7.0%	100.0%	100.0%	15.1%	100.0%	100%	29.9%	100.0%	100%
<b>Household head gender</b>									
Female	14.9%	18.9%	40.4%	21.6%	23.1%	33.0%	36.6%	27.3%	33.5%
Male	5.1%	81.1%	59.5%	13.2%	76.7%	66.7%	27.7%	72.7%	67.4%
<b>Household head schooling</b>									
no schooling	15.9%	19.7%	44.8%	28.8%	14.1%	26.8%	45.5%	12.3%	18.7%
some primary	5.4%	51.4%	40.0%	16.6%	47.3%	51.8%	32.1%	59.5%	64.0%
some high school	1.8%	17.8%	4.6%	8.8%	27.2%	15.8%	19.8%	14.3%	9.5%
some technical college	2.7%	0.2%	0.1%	4.2%	1.3%	0.4%	17.6%	2.7%	1.6%
some college	1.4%	4.4%	0.9%	4.1%	6.8%	1.8%	13.9%	7.0%	3.2%
non-declared	8.7%	6.6%	8.2%	18.5%	3.3%	4.0%	25.3%	4.3%	3.6%
<b>Household head employment status</b>									
unemployed/inactive	21.6%	11.4%	35.1%	28.3%	11.1%	20.9%	42.6%	23.0%	32.8%
public sector	2.0%	19.6%	5.6%	9.1%	16.9%	10.2%	15.9%	11.4%	6.1%
private sector	5.7%	33.5%	27.3%	15.3%	34.9%	35.2%	28.0%	27.8%	26.1%
cooperative worker							13.7%	1.7%	0.8%
self-employed	8.0%	27.2%	31.0%	17.5%	25.4%	29.4%	31.1%	29.4%	30.6%
employer	1.6%	8.3%	1.9%	6.0%	11.5%	4.5%	16.4%	6.7%	3.7%
<b>Household size</b>									
one or two members	13.4%	4.2%	8.1%	15.5%	5.2%	5.3%	33.5%	4.7%	5.3%
3 to 6 members	4.8%	46.5%	31.8%	10.9%	57.8%	41.7%	24.1%	57.3%	46.2%
more than 6 members	8.5%	49.2%	60.0%	21.6%	37.1%	53.0%	38.1%	38.0%	48.5%
<b>Geographic location</b>									
capital	2.3%	25.2%	8.3%	9.1%	21.5%	12.9%	23.8%	20.3%	16.2%
center	3.6%	13.8%	7.1%	9.6%	14.4%	9.1%	22.4%	14.9%	11.2%
eastern	8.4%	13.1%	15.7%	16.4%	12.5%	13.5%	36.4%	12.2%	14.9%
western	9.0%	12.8%	16.4%	19.0%	12.4%	15.6%	36.2%	11.8%	14.4%
andean	16.3%	11.6%	27.0%	24.7%	10.6%	17.4%	29.8%	9.8%	9.8%
plains	10.8%	8.6%	13.3%	22.3%	9.8%	14.5%	36.1%	11.6%	14.0%
south	7.1%	2.8%	2.8%	12.0%	6.3%	5.0%	27.1%	6.2%	5.6%
zulia	5.4%	12.2%	9.3%	14.5%	12.5%	12.0%	31.8%	13.2%	14.0%
<b>Source:</b> Author's calculations using INE (various years) Encuesta de Hogares por Muestreo									
<b>Notes:</b>									
(1) refers to percentage of individuals whose monthly family labor earnings per-head are below the extreme poverty line									
(2) decomposition of poverty headcount as explained into population weighted poverty headcount per group									

**Table 8: Poverty headcount decomposition into growth and inequality components**

	indexes		differences <sup>2</sup>					
	1980	1992	total		due to growth		due to inequality	
Poverty Headcount <sup>1</sup>	7.0%	15.1%	0.081	100.0%	0.107	131.4%	-0.026	-31.4%
	1992	2000						
Poverty Headcount <sup>1</sup>	15.1%	29.9%	0.148	100.0%	0.076	51.2%	0.072	48.8%
	1980	2000						
Poverty Headcount <sup>1</sup>	7.0%	29.9%	0.229	100.0%	0.17	73.0%	0.06	27.0%
Source: Author's calculations using INE (various years) Encuesta de Hogares por Muestreo								
Notes:								
(1) Refers to percentage of individuals whose family monthly labor income per head is below a nationally representative poverty line								
(2) decomposition according to Kolenikov and Shorrocks (2005)								

**Table 9: Gini coefficient before and after taxes in Venezuela (1997)**

	case 1	case 2
Before taxes and social expenditures	0.4006	0.4006
After taxes and before social expenditures	0.3782	0.3930
After taxes and social expenditures	0.3011	0.3140

Source: Seijas et al. (2003), p. 69

Notes: Case 1 refers to the assumption of 100% incidence of corporate tax upon consumers, whereas case 2 refers to the assumption of 50% incidence of corporate tax upon consumers and 50% upon shareholders.

**Table 10: Decomposition of social expenditures by political period**

	GDP	budgetary pressure	fiscal priority	interaction	social expenditure
(comparing end-year to end-year)					
1974-1978	4.0%	34.4%	-18.5%	-6.0%	14.0%
1979-1983	-18.6%	-4.3%	19.6%	-3.5%	-6.9%
1984-1988	5.2%	-15.0%	3.0%	-1.1%	-7.9%
1989-1993	-0.9%	-18.0%	55.0%	-10.2%	25.9%
1994-1998	-2.4%	11.2%	-27.7%	-2.6%	-21.5%
1999-2003	-23.7%	28.9%	18.5%	-7.2%	16.6%

(comparing 5-year averages)

1979-1983	-8.3%	-12.3%	29.5%	-4.8%	4.1%
1984-1988	-11.4%	-19.9%	14.1%	-1.8%	-19.0%
1989-1993	2.8%	-9.1%	25.7%	-1.9%	17.4%
1994-1998	-0.1%	0.1%	-11.1%	0.0%	-11.0%
1999-2003	-11.6%	15.5%	6.5%	-1.7%	8.7%

Source: Author's calculation using IMF's Government Financial Statistics (various years) as well as Ministry of Finance and ONCEPRE data processed by CESAP's Venescopio

**Table 11:** Elasticity of changes in Social Expenditure

	Contemporaneous			Lagged <sup>(1)</sup>		
	OLS	Prais-Winsten	2SLS	OLS	Prais-Winsten	2SLS
Constant	0.031 (0.058)	0.054 (0.051)	0.044 (0.062)	-0.078 (0.043)	-0.082 ** (0.040)	-0.078 ** (0.043)
Expansion ( dicotomous variable)	0.103 (0.086)	0.082 (0.077)	0.090 (0.089)	0.183 (0.067)	0.186 (0.061)	0.180 *** (0.069)
Total Government Expenditure ( change in log of real millions of Bs)	0.767 *** (0.350)	1.042 *** (0.287)	0.825 *** (0.360)	0.362 *** (0.204)	0.359 *** (0.170)	0.362 *** (0.204)
Interaction (expansion x total gov. expenditure)	-1.046 *** (0.481)	-1.266 *** (0.422)	-1.104 *** (0.489)	0.053 *** (0.440)	-0.065 *** (0.430)	0.056 (0.442)

Source: Author's calculation using IMF's Government Financial Statistics (various years)

Notes: Dependent variable: Change in logarithm of Social Expenditure. Standard errors in parentheses. Significance with 95% (\*\*\*) and 90% (\*\*) confidence

(1) It refers to Total Government expenditure lagged one period

Table 12: Consolidated Central Government tax collection by source in Venezuela

	Revenues							Debt/Surplus (financing)	TOTAL EXPENDITURE (2)
	Taxes					Non Taxes	Other Revenues		
	on Income	Social Security and payroll	on Property and other	on Goods and Services	on International trade				
1970	39.7%	6.1%	1.1%	6.6%	6.3%	29.5%	2.0%	8.8%	11,454
1971	52.3%	6.2%	1.2%	6.3%	6.2%	27.8%	0.5%	-0.6%	12,527
1972	50.5%	6.2%	1.0%	6.3%	5.7%	25.1%	1.1%	4.2%	13,943
1973	63.1%	6.1%	1.1%	5.9%	5.1%	25.4%	0.2%	-6.8%	16,058
1974	70.0%	3.8%	0.5%	2.5%	3.7%	25.5%	0.1%	-6.1%	41,985
1975	64.3%	4.0%	0.7%	2.9%	6.7%	26.0%	0.2%	-4.7%	40,565
1976	56.3%	4.2%	0.9%	4.2%	6.1%	19.1%	0.3%	9.1%	43,972
1977	50.9%	4.4%	0.9%	4.2%	5.9%	19.8%	0.3%	13.6%	49,735
1978	45.7%	5.3%	2.0%	4.5%	7.3%	20.9%	0.4%	13.8%	49,797
1979	65.8%	5.5%	1.1%	6.1%	8.0%	21.5%	0.4%	-8.4%	47,146
1980	67.2%	5.6%	0.8%	4.2%	6.7%	15.2%	0.4%	-0.2%	66,693
1981	71.8%	4.2%	0.7%	2.8%	5.4%	10.8%	0.4%	3.8%	101,725
1982	53.7%	4.8%	0.9%	4.1%	7.2%	15.9%	0.4%	13.1%	96,690
1983	52.0%	5.2%	0.9%	5.6%	16.7%	14.1%	0.2%	5.4%	81,864
1984	67.5%	4.8%	1.0%	4.9%	20.5%	16.0%	0.1%	-14.9%	91,078
1985	75.7%	4.8%	1.4%	6.0%	16.8%	18.1%	0.1%	-22.9%	102,976
1986	39.4%	4.8%	1.2%	8.1%	21.4%	16.7%	0.0%	8.4%	118,625
1987	45.9%	0.0%	0.9%	7.0%	10.1%	17.6%	0.0%	20.4%	154,595
1988	46.4%	3.7%	1.7%	5.9%	10.1%	15.4%	0.0%	19.9%	209,722
1989	63.1%	3.0%	0.5%	4.1%	7.8%	26.1%	-5.1%	0.4%	289,648
1990	64.0%	3.8%	0.1%	3.2%	6.8%	22.3%	0.0%	-0.2%	538,595
1991	68.8%	3.6%	0.1%	3.9%	8.7%	24.0%	0.0%	-9.2%	658,443
1992	45.9%	4.3%	0.1%	6.4%	9.7%	19.1%	0.0%	14.6%	877,296
1993	45.4%	3.9%	0.2%	11.0%	9.7%	18.1%	0.0%	11.7%	1,071,008
1994	28.9%	4.3%	5.5%	16.0%	6.9%	14.9%	0.0%	23.6%	2,060,930
1995	28.1%	3.5%	0.2%	26.8%	7.5%	16.0%	0.0%	18.0%	2,736,412
1996	37.1%	1.8%	0.1%	30.2%	7.5%	32.0%	0.0%	-8.6%	5,311,298
1997	38.1%	1.7%	0.1%	33.3%	7.5%	29.6%	0.0%	-10.3%	9,285,487
1998	14.6%	3.4%	2.5%	25.8%	9.1%	27.0%	0.0%	17.6%	10,919,236
1999	18.9%	3.9%	7.0%	26.7%	8.6%	22.6%	0.0%	12.4%	12,251,621
2000	25.3%	3.3%	3.6%	20.2%	6.7%	32.0%	0.0%	9.0%	17,853,900
2001	16.6%	2.9%	2.1%	21.2%	5.9%	35.7%	0.0%	15.5%	22,883,800
2002	10.5%	2.3%	7.0%	19.7%	4.8%	43.3%	0.0%	12.4%	28,117,400
2003	11.4%	2.1%	6.5%	20.0%	3.0%	42.3%	0.0%	14.6%	37,786,000

Source: IMF, Government Financial Statistics, various years

Notes: (1) As a percentage of total expenditure

(2) In million of current Bolivares

**Table 13:** Decomposition of budgetary pressure by political period

	Change in...			Change in budgetary pressure
	...oil/gdp	...non-oil/gdp	...debt/gdp	
(comparing end-year to end-year)				
1973-1978	-4.0%	13.0%	25.4%	34.4%
1979-1983	-1.5%	5.9%	-8.7%	-4.3%
1984-1988	-9.1%	-17.5%	11.6%	-15.0%
1989-1994	-3.0%	-4.7%	-10.4%	-18.0%
1994-1998	-10.5%	13.9%	7.8%	11.2%
1994-1998	27.6%		1.3%	28.9%
1999-2003 <sup>(3)</sup>	32.1%	-4.1%	-16.2%	11.8%

Source: Author's calculation using IMF's Government Financial Statistics (various years) as well as Ministry of Finance and ONCEPRE data processed by CESAP's Venescopio

**Table 14:** Aggregate Consolidated Central Government revenues by political period <sup>(1)</sup>

	Taxes					Non taxes		Deficit / surplus	TOTAL EXPENDITURE
	on income		Social Security and payroll	Other Taxes		total	of which: oil		
	total	of which: oil		total	on consumption <sup>(2)</sup>				
1973-1978	51,451,254	43,482,168	3,876,392	9,461,124	3,273,115	20,137,412	15,682,407	4,617,273	89,543,454
	57%	49%	4%	11%	4%	22%	18%	5%	100%
1979-1983	53,585,267	44,500,193	4,285,732	11,906,878	3,795,607	13,300,397	7,777,978	3,006,428	86,084,701
	62%	52%	5%	14%	4%	15%	9%	3%	100%
1984-1988	37,510,387	26,938,754	2,473,467	16,097,620	4,439,548	11,627,557	3,384,527	2,378,445	69,319,504
	54%	39%	4%	23%	6%	17%	5%	3%	100%
1989-1994	42,100,511	36,573,867	2,756,846	10,698,765	4,231,975	15,400,935		2,695,692	73,652,750
	57%	50%	4%	15%	6%	21%		4%	100%
1994-1998	24,129,363		2,457,731	29,700,279	21,841,786	19,767,521		7,024,756	83,079,650
	29%		3%	36%	26%	24%		8%	100%
1999-2003	15,287,541		2,692,862	30,190,480	20,048,782	33,437,836		12,095,606	93,704,491
	16%		3%	32%	21%	36%		13%	100%
1999-2003 <sup>(3)</sup>	7,262,840		2,692,862	28,815,860	-	74,691,832		-632,708	114,096,122
	6%		2%	25%	0%	65%		-1%	100%

Source: Author's calculation using IMF's Government Financial Statistics (various years); Ministry of Finance "Resultado Financiero del Sector Público restringido" and ONCEPRE data processed by CESAP's Venescopio

Notes: (1) In millions of real bolivares (2000=100)

(2) The Value-added tax was introduced in 1993.

(3) Figures according to Ministry of Finance



**Table 15:** Balance Account of the Venezuelan Social Security

	Revenues		Expenditure	Balance	Share of deficit/surplus
	Total	Extra			
1980	4.6		3.4	1.2	35.3%
1981	5.2	1.5	3.9	1.3	33.3%
1982	5.5	1.6	4.1	1.4	34.1%
1983	5.1	1.6	4.5	0.6	13.3%
1984	5.4	1.8	4.4	1.0	22.7%
1985	5.8	2.1	5.0	0.8	16.0%
1986	7.2	2.9	6.4	0.8	12.5%
1987	8.4	2.6	7.5	0.9	12.0%
1988	11.4	3.2	9.2	2.2	23.9%
1989	15.0	7.3	14.9	0.1	0.7%
1990	26.5	6.4	27.5	-1.0	-3.6%
1991	33.3	9.4	33.4	-0.1	-0.3%
1992	56.3	18.9	38.8	17.5	45.1%
1993	99.1	57.2	103.4	-4.3	-4.2%
1994	127.8	55.8	127.8	0.0	0.0%
1995	122.3	27.9	126.8	-4.5	-3.5%
1996	187.5	87.9	274.3	-86.8	-31.6%
1997	228.1	65.6	476.3	-248.2	-52.1%
1998	910.4	534.6	910.4	0.0	0.0%
1999	756.4	277.1	1184.2	-427.8	-36.1%
2000	829.8		1436.7	(606.9)	-42.2%
2001	1192.1		1858.4	(666.3)	-35.9%
2002	1296.9		2295.0	(998.1)	-43.5%
2003	1953.0		3216.0	(1263.0)	-39.3%

Sources

VENEZUELA, Ministerio del Trabajo, Memoria 2001

OCEI, Anuario estadístico, varios años

IVSS, Memoria y Cuenta 1997

**Table 16:** Venezuelan Social Security Coverage

	Contributors	Beneficiaries	Beneficiaries perContributor	Population Coverage	Labor Force Coverage
1975	1,200,725	3,128,735	2.61	24.7%	34.7%
1976	1,265,464	3,289,081	2.60	25.1%	32.2%
1977	1,384,713	3,592,173	2.59	26.4%	33.3%
1978	1,512,989	3,956,343	2.61	28.1%	35.0%
1979	1,522,323	4,482,981	2.94	30.8%	34.2%
1980	2,350,208	6,192,978	2.64	41.2%	50.7%
1981	1,798,100	5,384,845	2.99	34.8%	37.5%
1982	1,836,890	5,464,104	2.97	34.3%	37.3%
1983	1,770,289	5,264,661	2.97	32.1%	35.9%
1984	1,816,597	5,470,132	3.01	32.5%	36.8%
1985	1,896,358	5,768,674	3.04	33.3%	37.1%
1986	1,998,285	6,227,391	3.12	35.5%	37.0%
1987	2,149,156	6,704,929	3.12	37.3%	37.7%
1988	2,333,851	7,319,840	3.14	40.3%	38.7%
1989	2,302,047	7,286,884	3.17	38.6%	37.7%
1990	2,431,694	7,710,160	3.17	39.5%	38.0%
1991	2,524,443	8,071,122	3.20	40.4%	37.7%
1992	2,448,289	7,790,756	3.18	38.1%	35.0%
1993	2,738,750	8,621,861	3.15	40.8%	38.6%
1994	2,642,569	9,297,358	3.52	43.0%	36.4%
1995	2,354,328	8,365,856	3.55	37.9%	30.7%
1996	2,372,585	8,460,157	3.57	37.5%	30.3%
1997	2,383,484	8,500,948	3.57	36.9%	28.8%
1998	2,367,563	8,619,497	3.64	36.7%	27.2%
1999	2,194,035	8,444,793	3.85	35.3%	25.2%
2000	2,247,626	8,687,953	3.87	35.6%	25.5%
2001	2,283,088	8,945,772	3.92	36.0%	24.3%
2002	2,297,570	8,994,565	3.91	35.5%	23.7%
2003	2,301,660	9,278,983	4.03	35.9%	23.6%

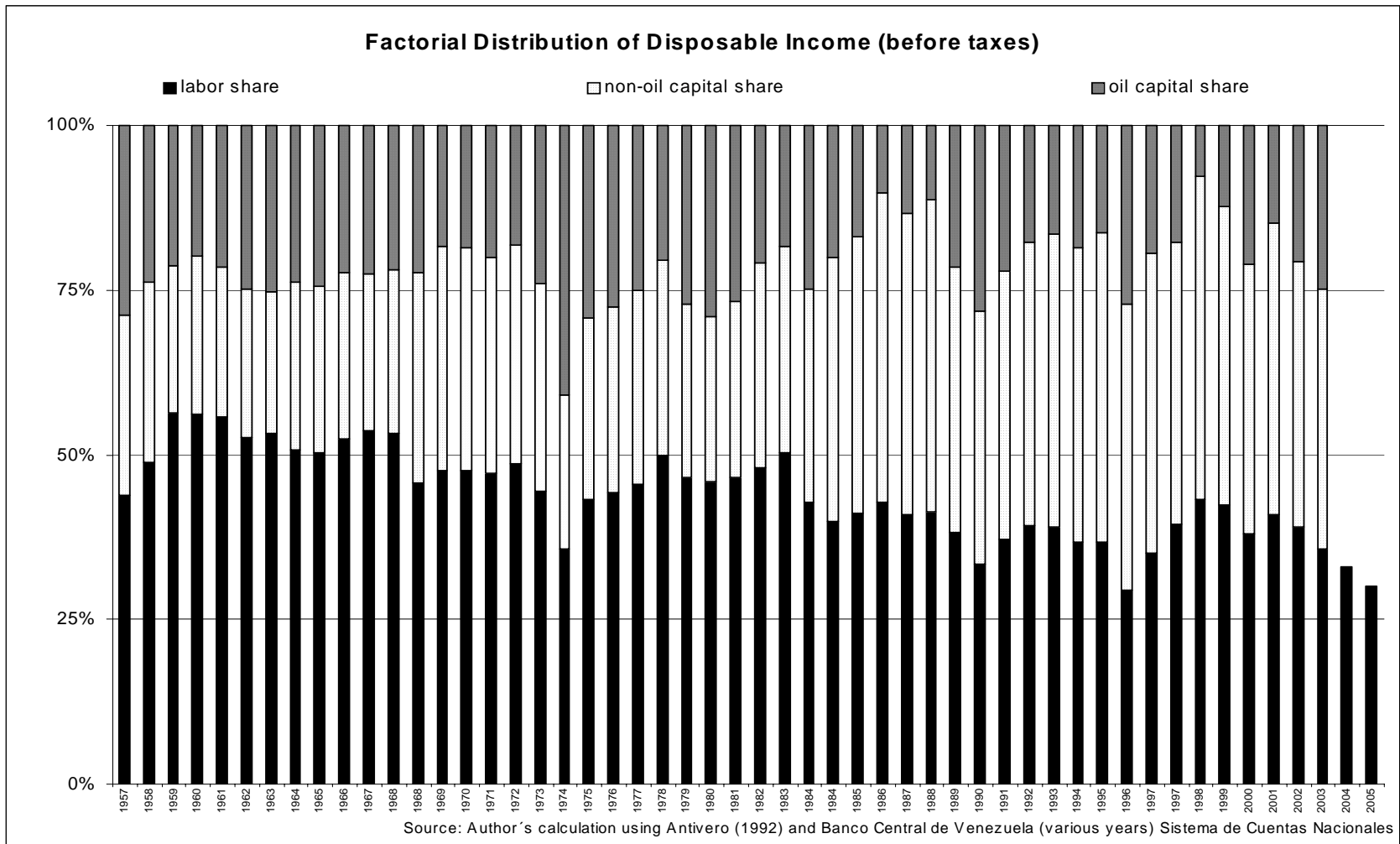
Source:

OCEI, Anuario Estadístico de Venezuela, varios años.

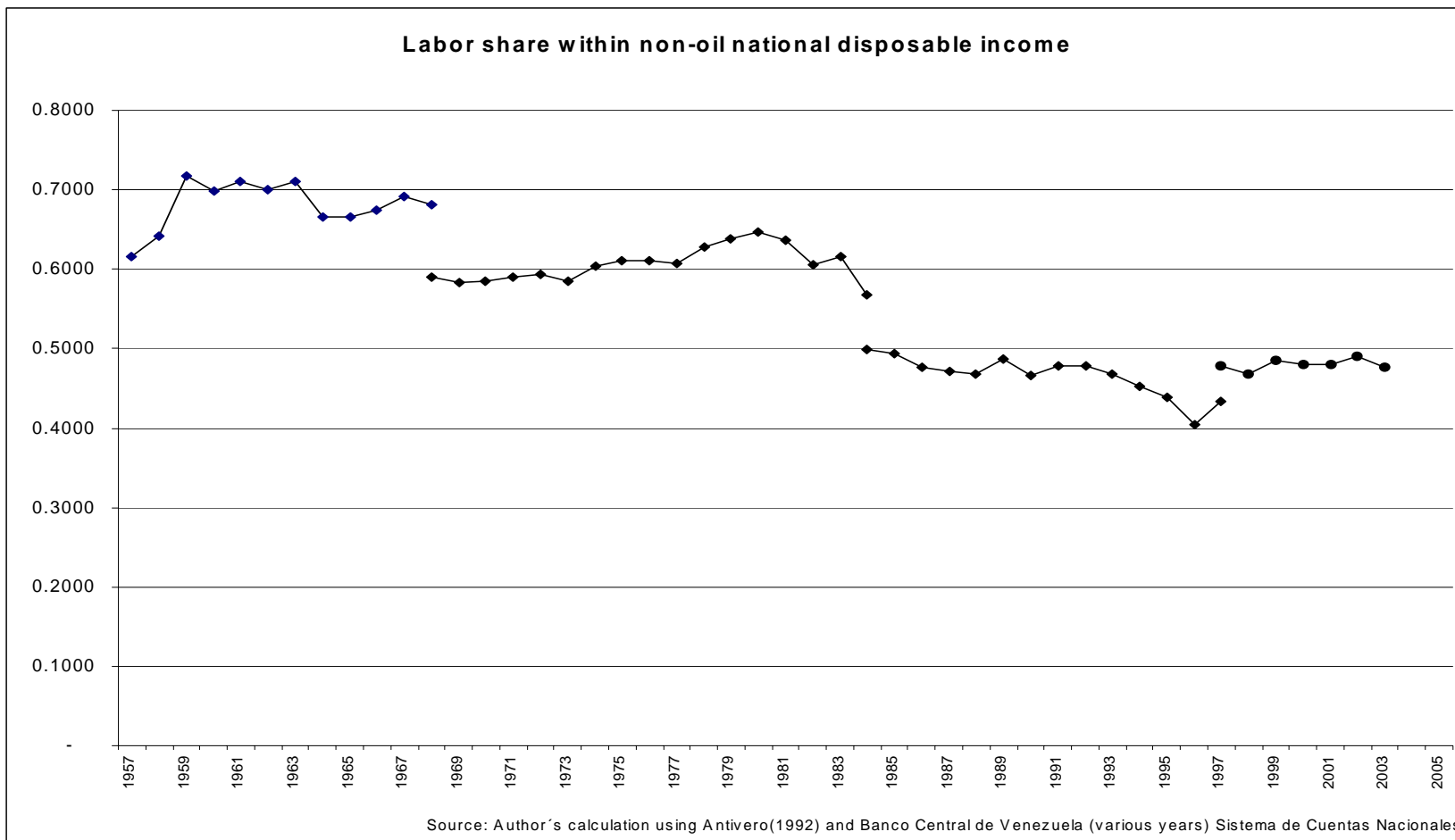
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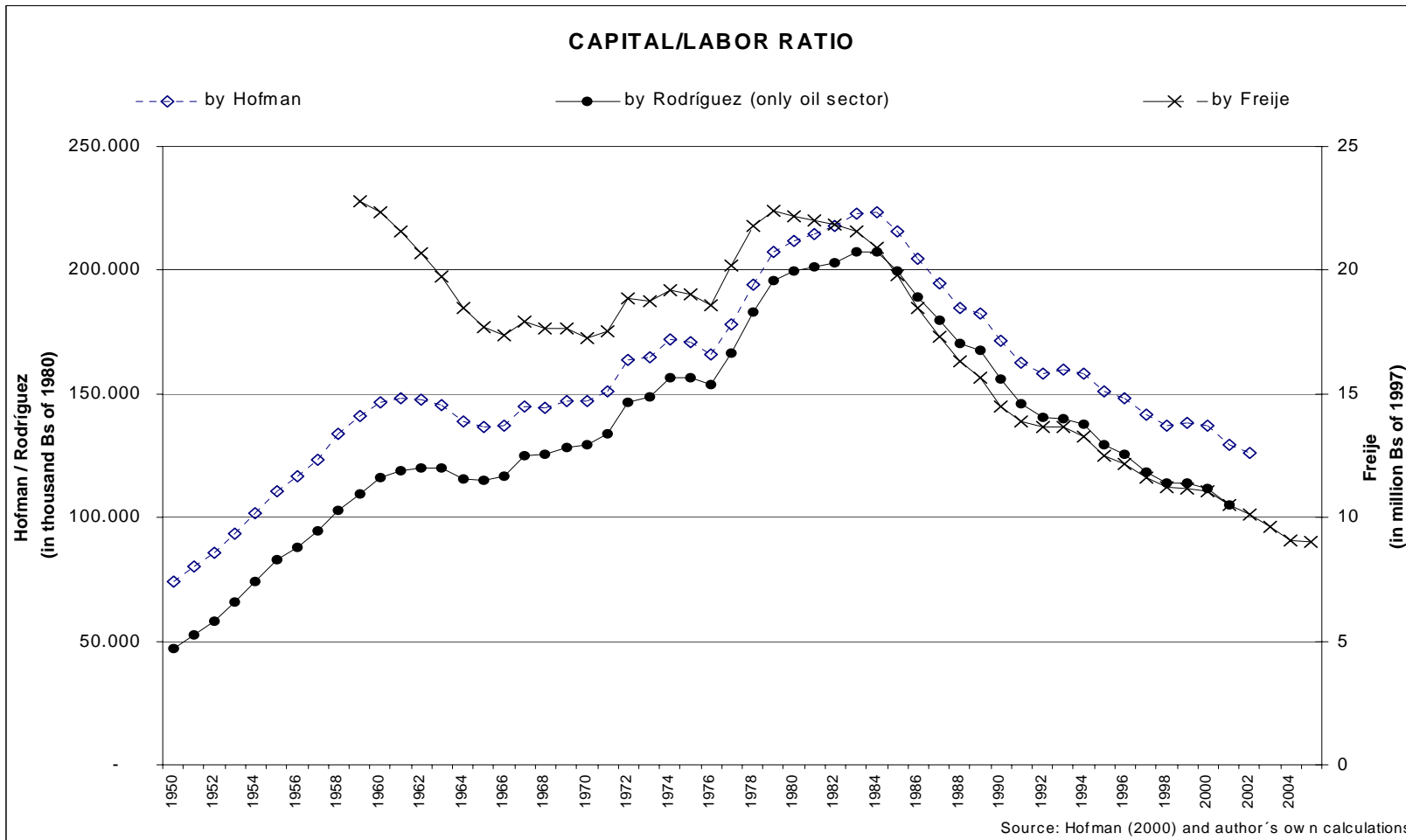
Figure 1: Factorial distribution of Disposable Income (before net taxes) in Venezuel



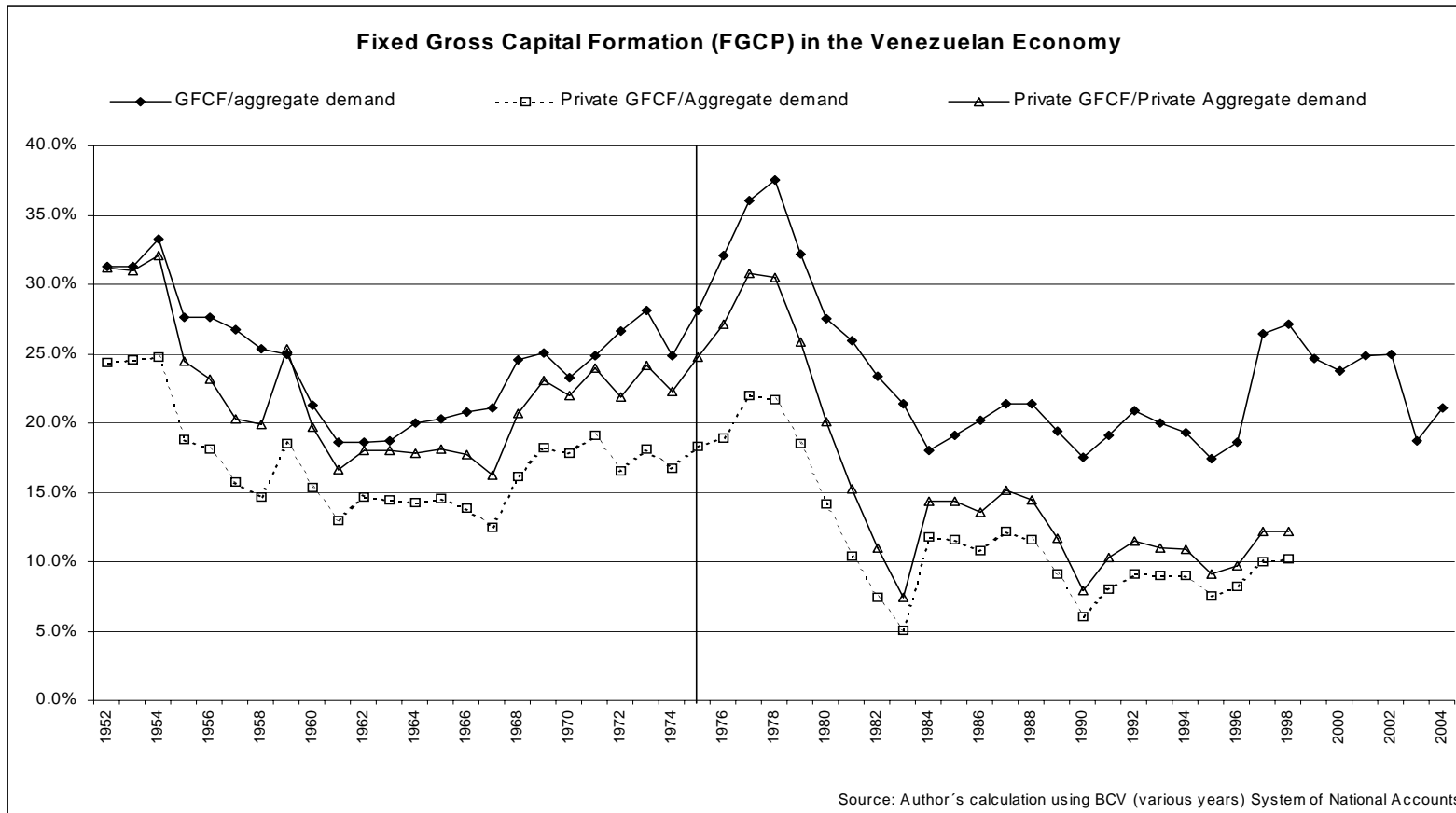
**Figure 2: Share of Labor within non-oil national income**



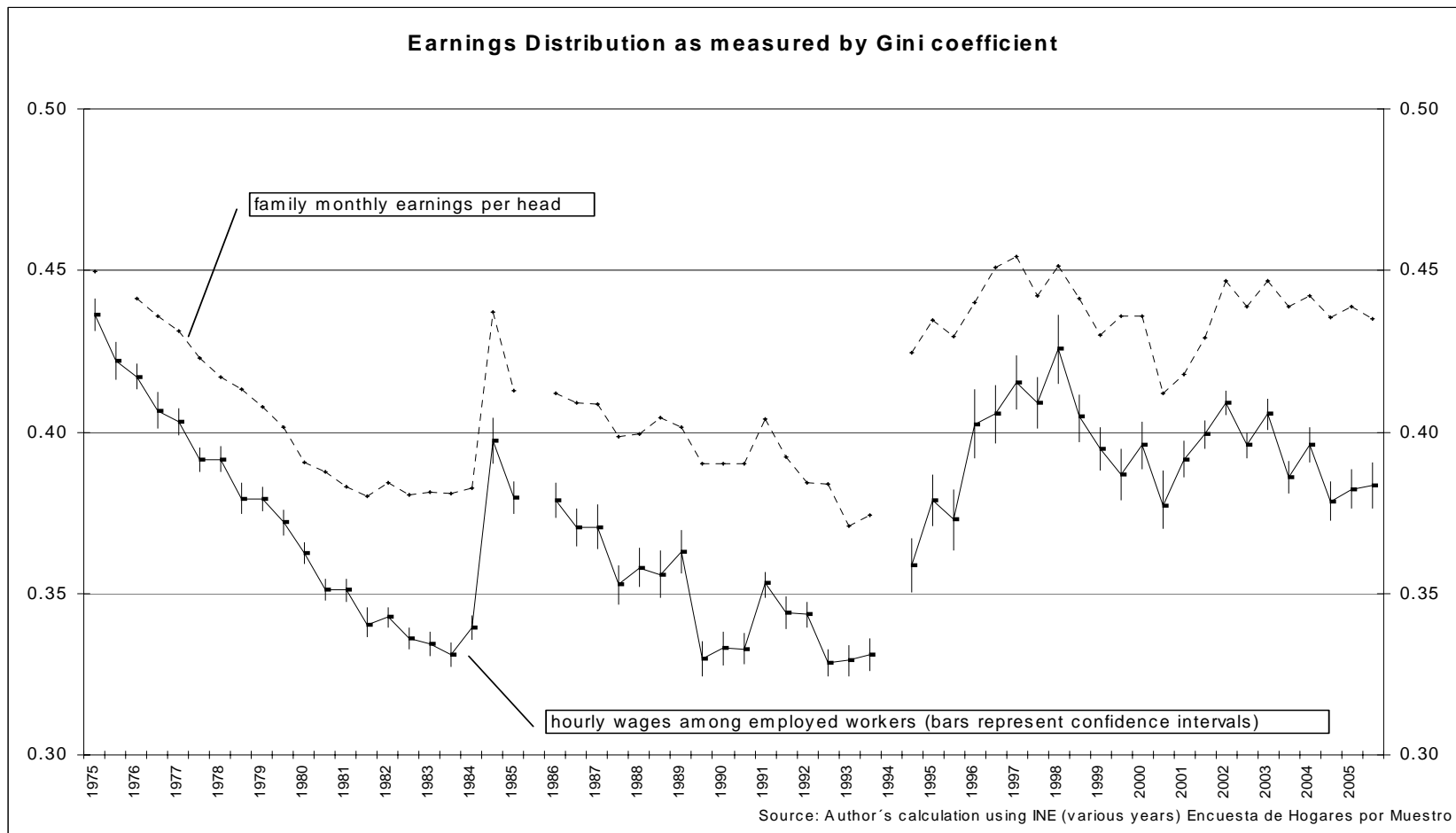
**Figure 3: Capital/Labor Ratio**



**Figure 4: Investment/output ratios**

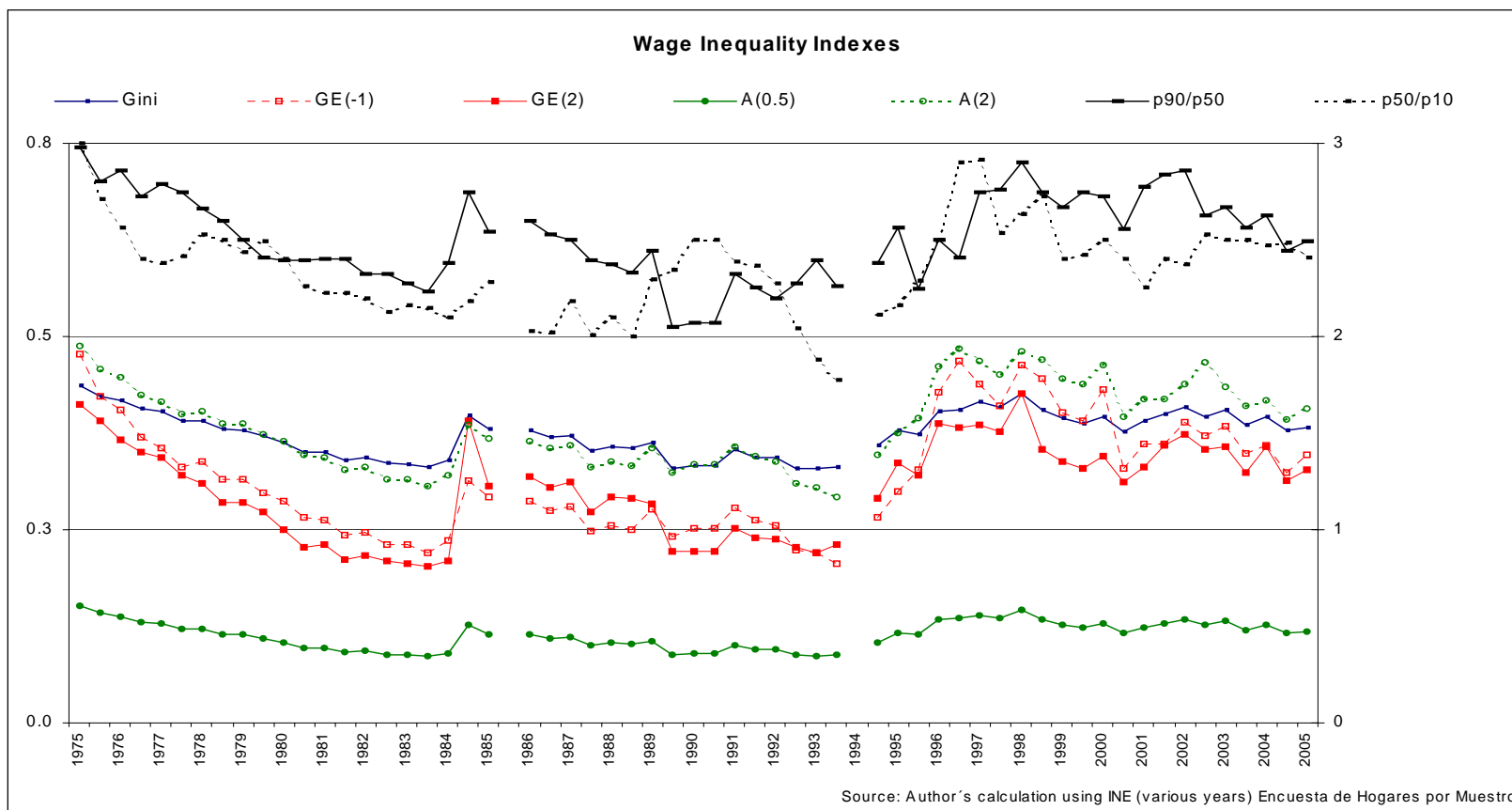


**Figure 5:** Family and workers Gini coefficient

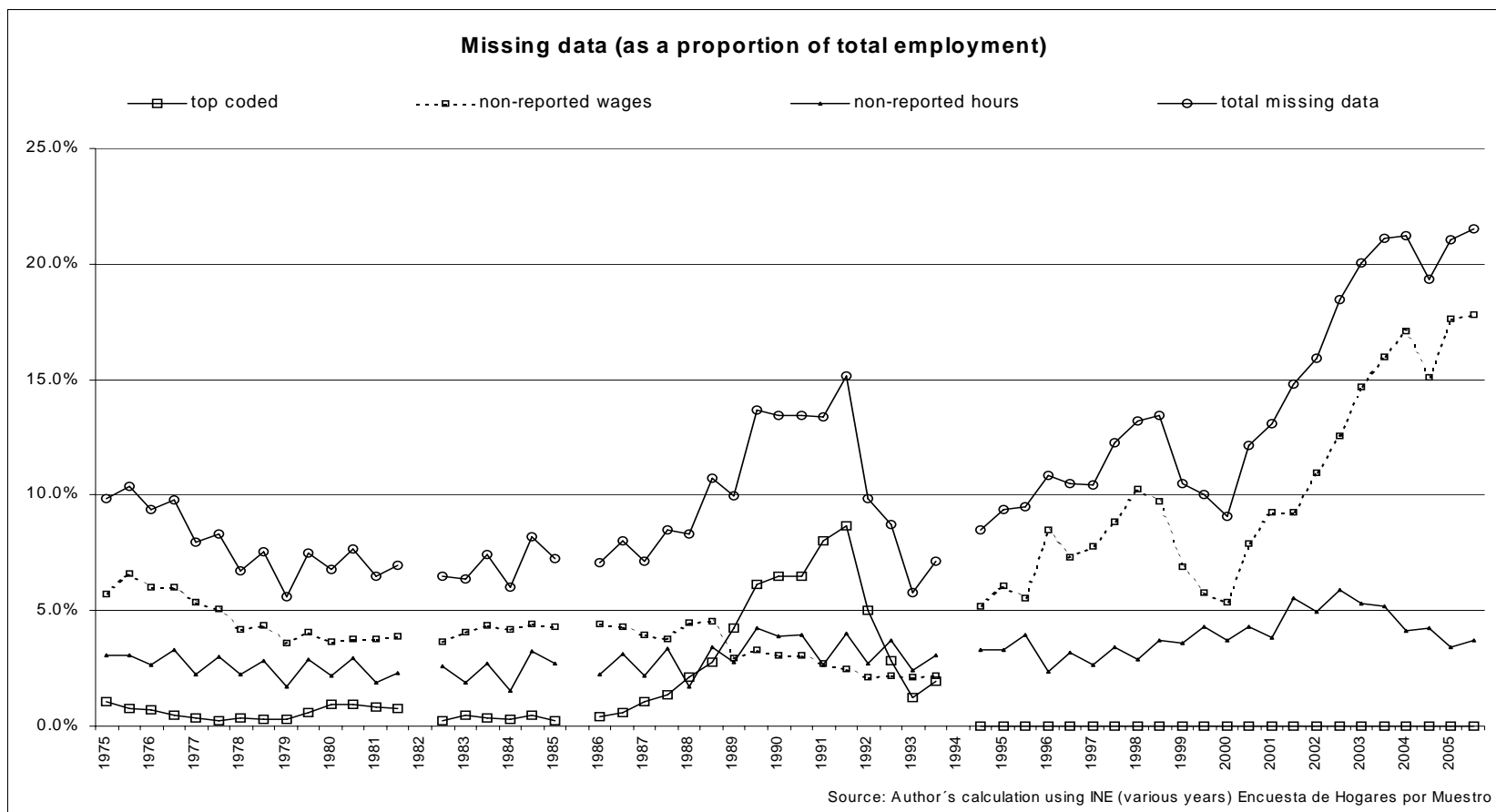




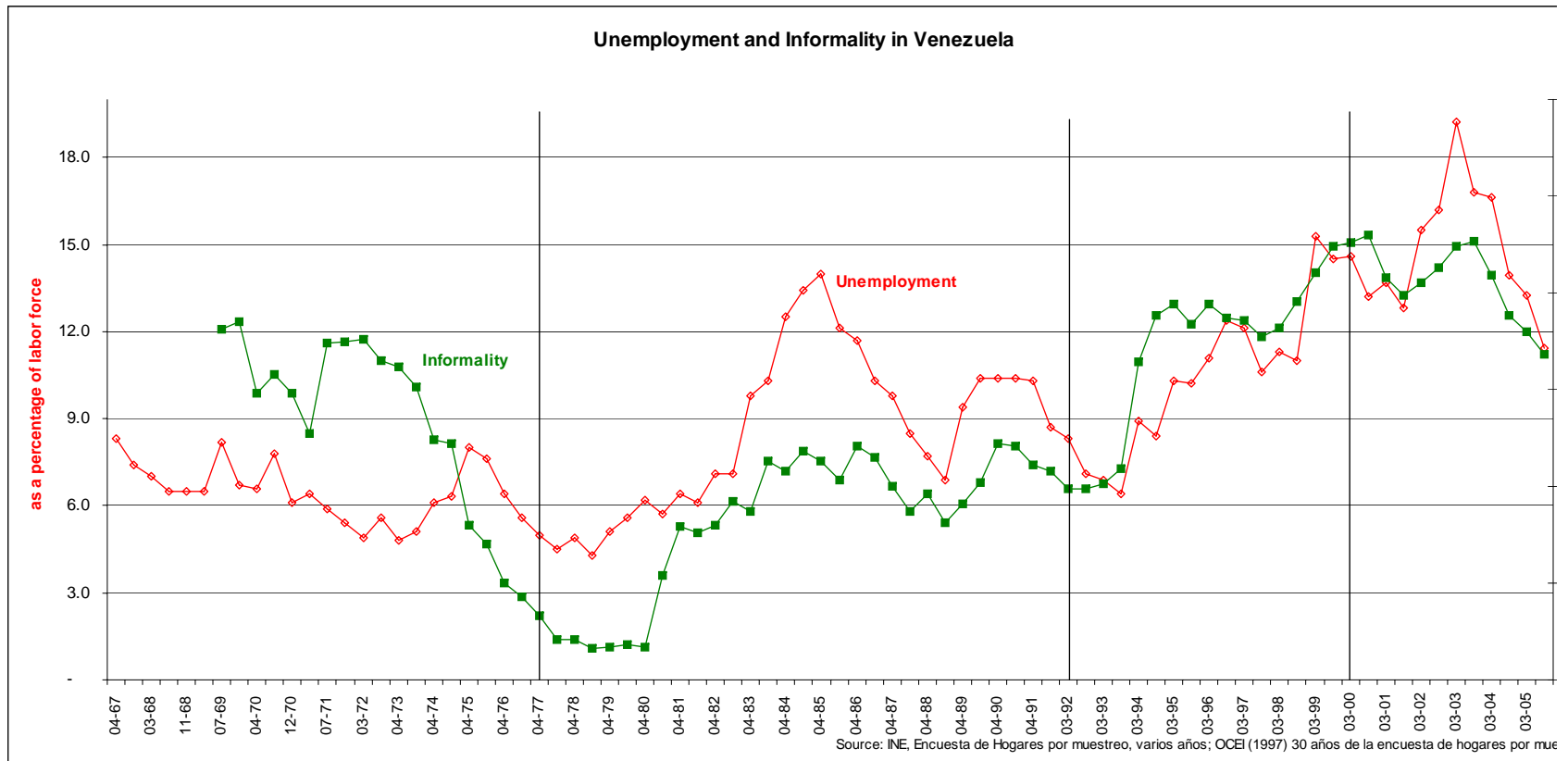
**Figure 6:** Inequality indexes for hourly wages among employed workers



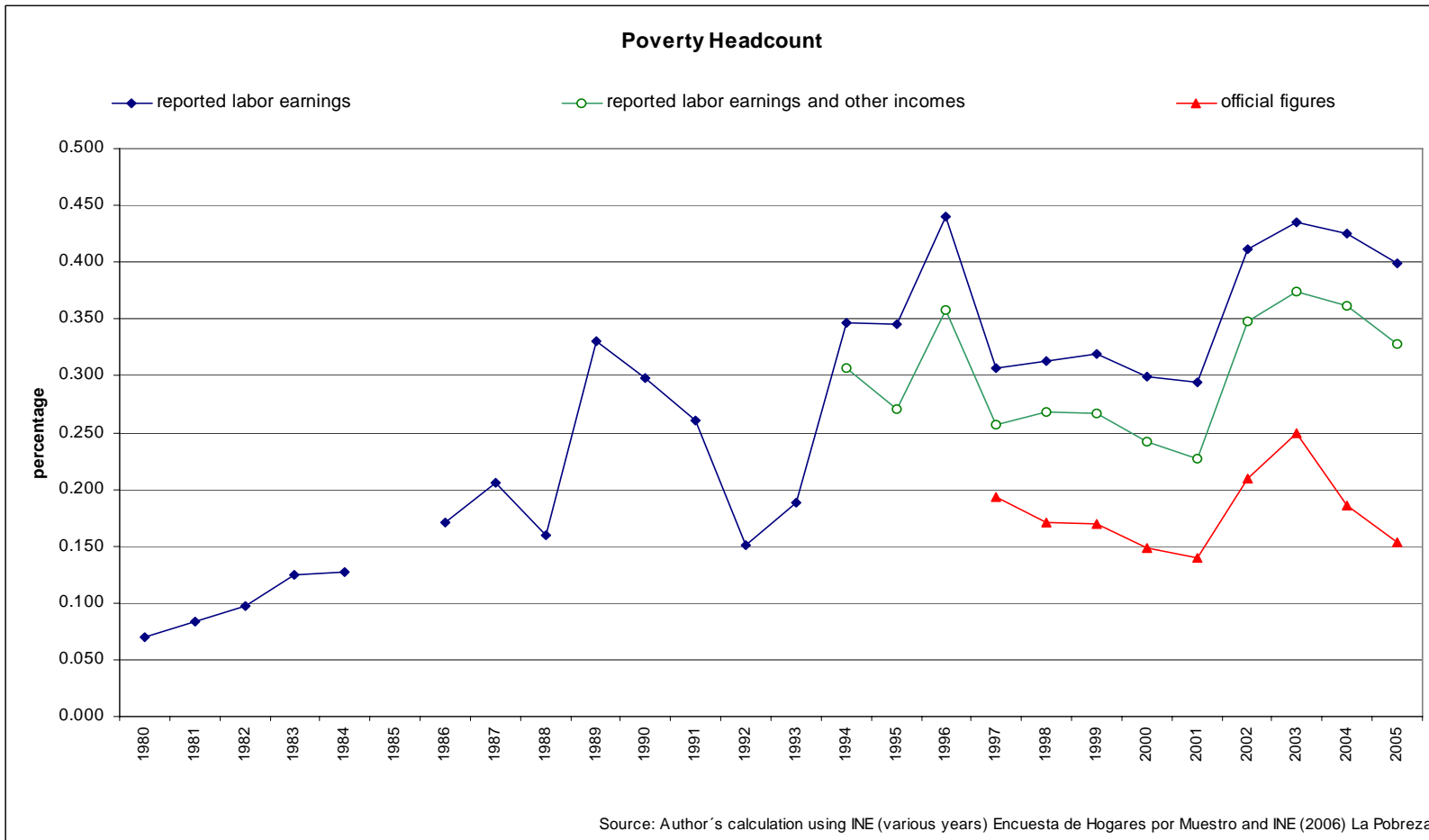
**Figure 7: Missing observations as a proportion of total employment**



**Figure 8: Open Unemployment and Informal Employment Rates**



**Figure 9: Poverty headcount**



**Figure 10: Real wages, GDP per worker and GDP per head**

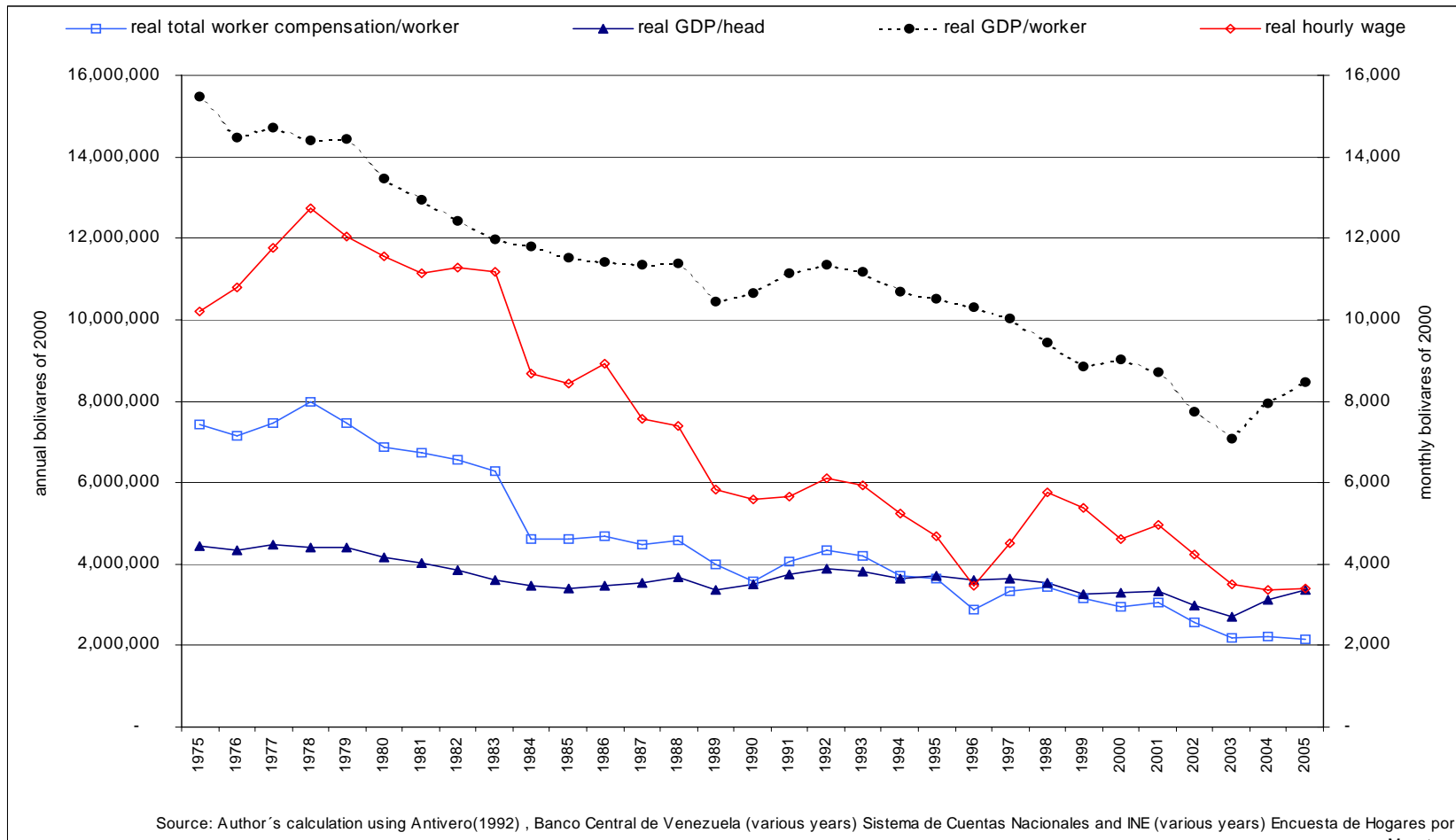
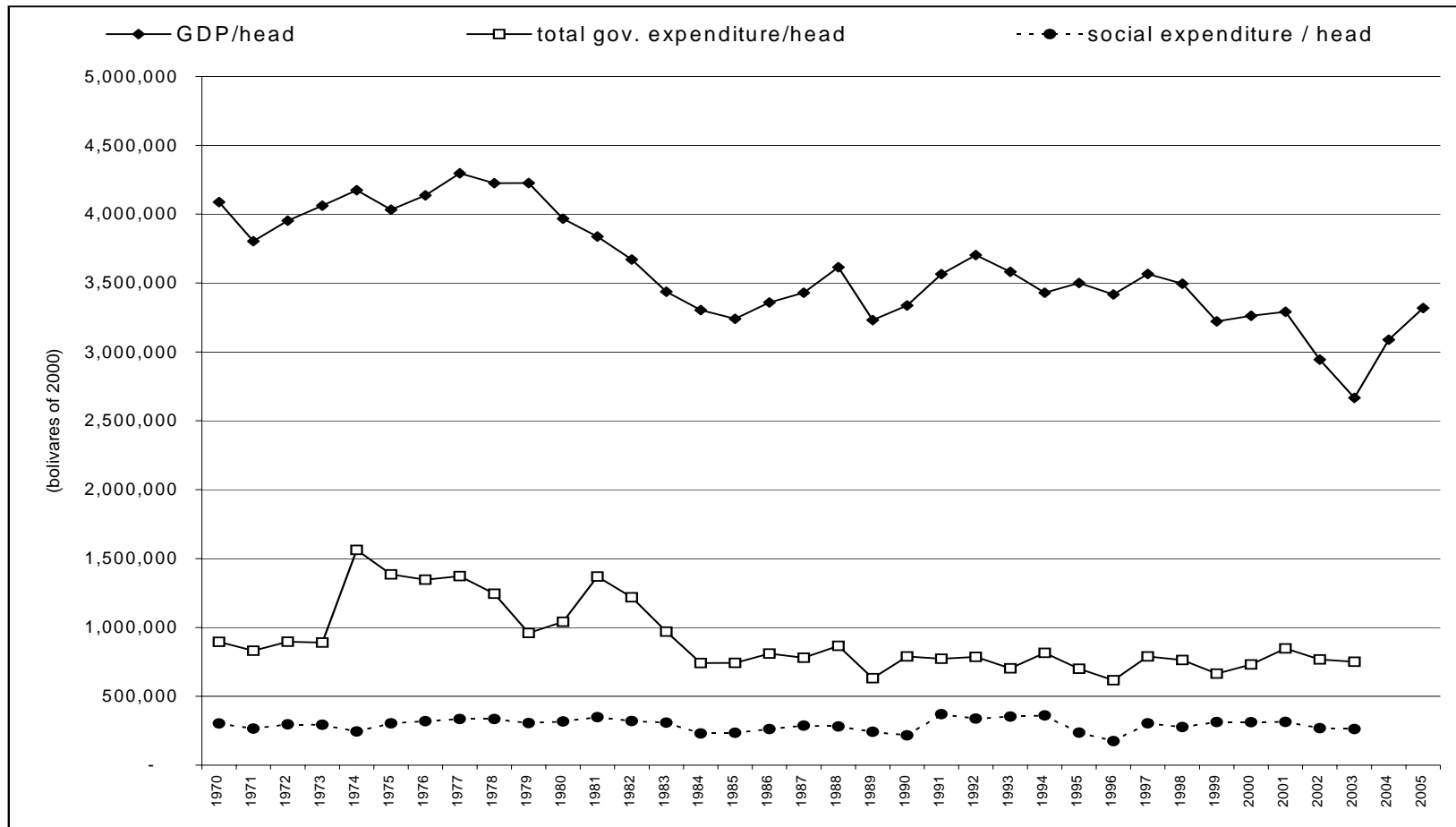
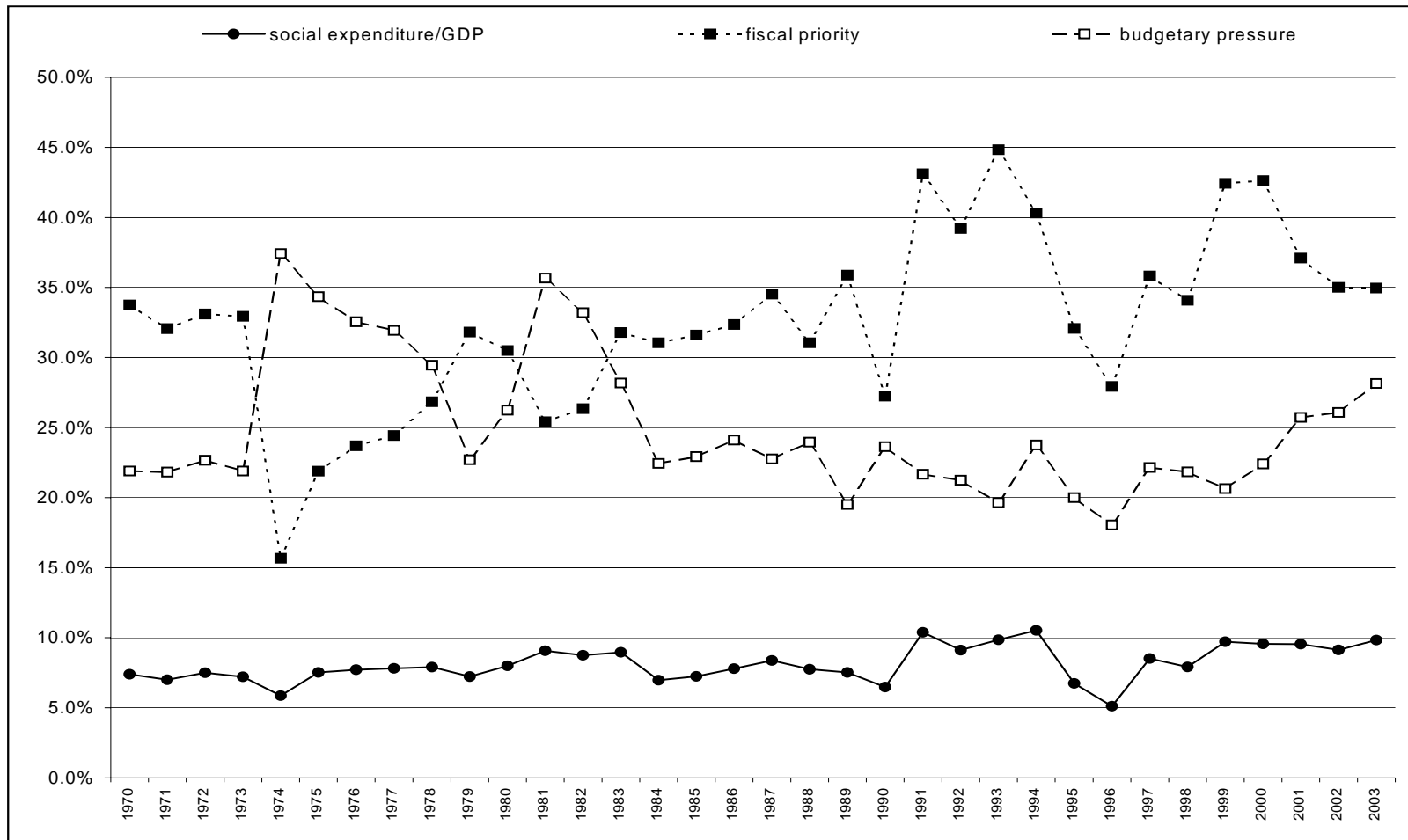


Figure 11: GDP, Total and Social Public Expenditures per head in Venezuela



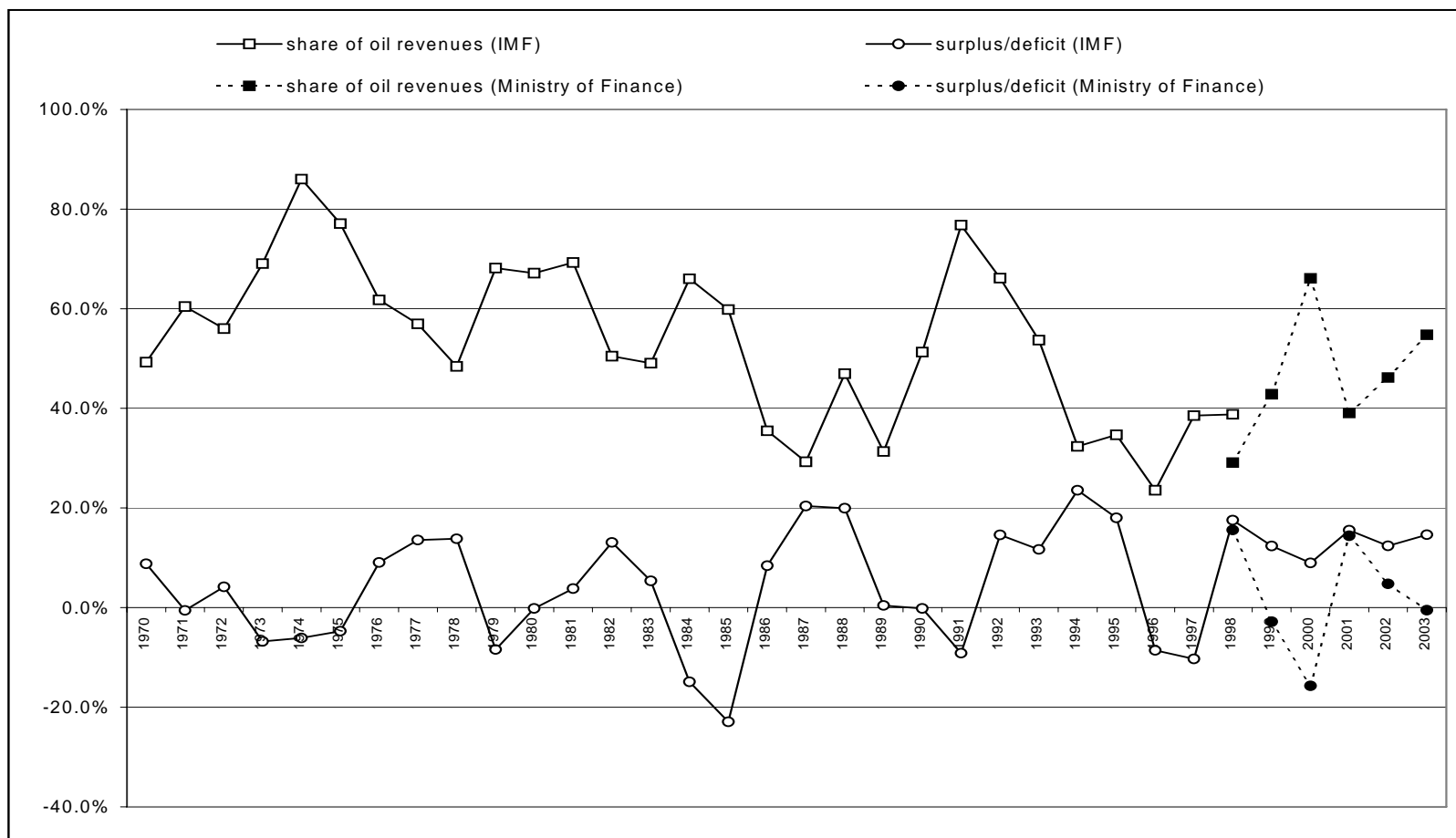
Source: Author's calculations using IMF's Government Financial Statistics (various years) and CESAP's Venescopio

Figure 12: Evolution of Social expenditure, fiscal priority and budgetary pressure



Source: Author's calculations using IMF's Government Financial Statistics (various years) and CESAP's Venescopio

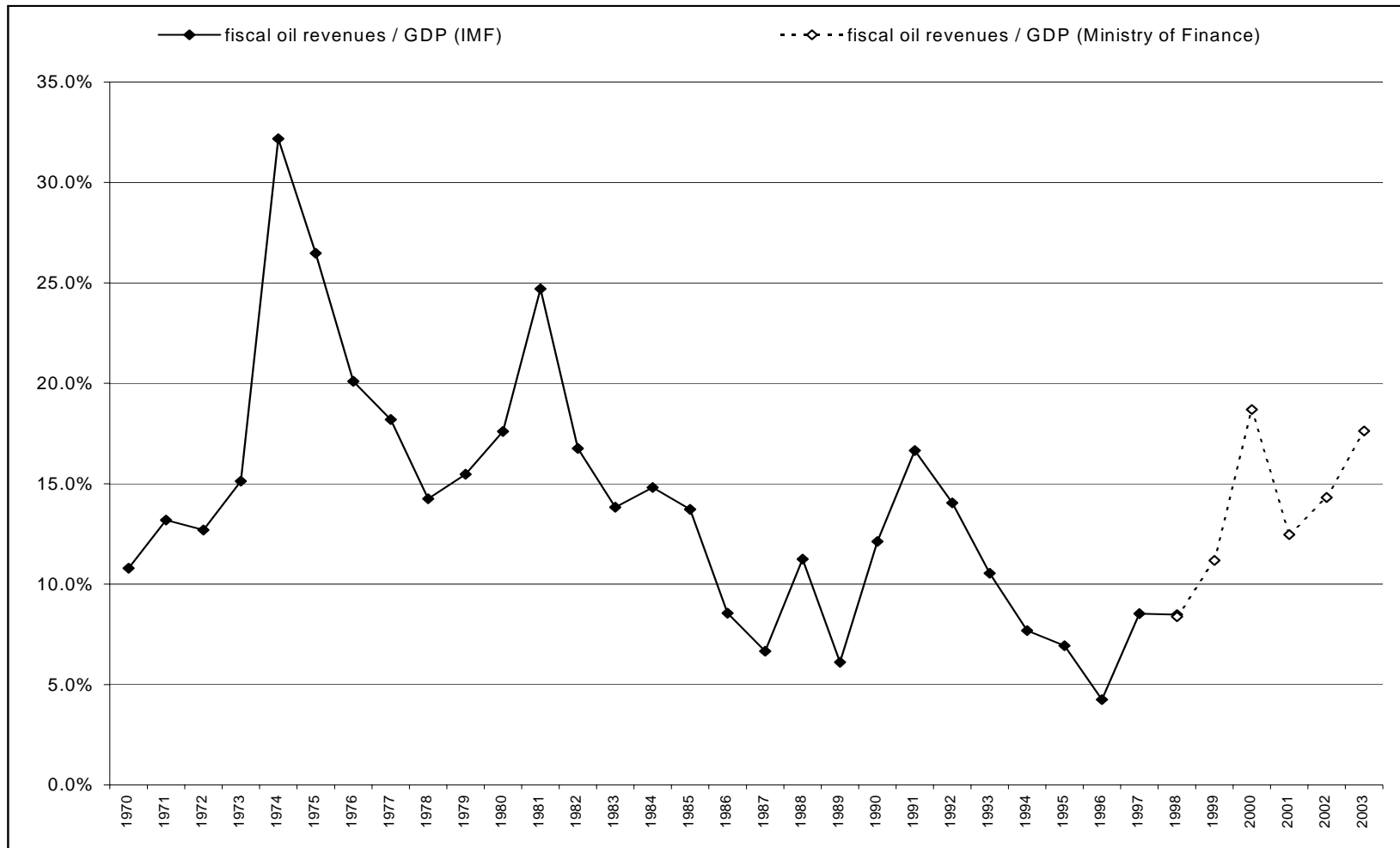
**Figure 13: Share of consolidated central government expenditure by income source**



Source: Author's calculations using IMF's Government Financial Statistics (various years) and Ministry of Finance



**Figure 14: Evolution of the fiscal oil-industry-related revenues to GDP**



Source: Author's calculations using IMF's Government Financial Statistics (various years) and Ministry of Finance

**CHAPTER 9:**  
**Competing for Jobs or Creating Jobs?**  
**The Impact of Immigration on Native-Born Unemployment in Venezuela,**  
**1980-2003 \***

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**Abstract**

The Venezuelan economic collapse since 1980 was associated with very large inflows of Colombians and even larger outflows of Europeans in the past three decades. We shed light on the impact that these large migrant inflows and outflows have had on the labor market performance of native-born Venezuelans. To identify the causal effect of net migrant inflows on native labor market outcomes, we exploit exogenous variation in migrant inflows driven by economic shocks in migrant source areas. We find that exogenous increases in Colombian presence in Venezuelan industries has led to increases in native-born unemployment, suggesting that Colombians compete directly with Venezuelans for jobs. We estimate that native-born unemployment rises roughly one-for-one with increases in Colombian presence in Venezuelan industries. In contrast, declines in European presence are likely to have been neutral in their effect on Venezuelan unemployment. Exogenous declines in European presence in Venezuelan industries have not led to declines in native-born unemployment rates, perhaps because European presence has a “job creating” effect that on average offsets any competition for jobs between Europeans and Venezuelans.

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\* Email: [dan\\_levy@ksg.harvard.edu](mailto:dan_levy@ksg.harvard.edu), [deanyang@umich.edu](mailto:deanyang@umich.edu). We thank Miguel Almunia-Candela, Todd Pugatch, and Ariel Sznajder for excellent research assistance.

## **1. Introduction**

Between 1965 and 2000, the fraction of individuals living outside their countries of birth grew from 2.2% to 2.9% of world population, reaching a total of 175 million people in the latter year.<sup>1</sup> What effects do migrant inflows have on the labor market outcomes of natives in host countries? This question is of great interest to officials in charge of immigration policy in both developed and developing countries, but the empirical work on the topic has provided unclear guidance. Card's (1990) study of the impact of the Mariel Boatlift on the Miami labor market found no effect of a large influx of Cuban refugees on the wages of potentially affected (lower-skilled and Cuban) workers. Friedberg and Hunt's (1995) survey of the literature concludes that immigration has only a small effect on the labor market outcomes of native workers, a finding echoed by Smith and Edmondston (1997). In contrast, in an analysis of labor supply shifts across education/experience groups in the United States, Borjas (2003) found relatively large negative effects of immigration on the wages of competing workers.

Venezuela is unique among Andean nations in having experienced dramatic migrant inflows and outflows in the post-World War II period. The question naturally arises: how have these migrant inflows and outflows affected the labor market performance of Venezuelan natives?

In this chapter we characterize the history of international migration in Venezuela in the 1975-2003 period, and assess the link that migrant flows may have had with the country's growth collapse. We characterize international migration in Venezuela by examining three questions: (1) how has the stock of immigrants evolved over time? (2)

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<sup>1</sup> Estimates of the number of individuals living outside their countries of birth are from United Nations (2002), while data on world population are from U.S. Bureau of the Census (2002).

how has the composition of immigrants evolved over time? and (3) how do immigrants differ from Venezuelan natives in their entrepreneurship and their human capital?

We assess the link between international migration and growth by investigating the extent to which changes in the presence of foreign-born people in Venezuelan industries affected unemployment among Venezuelan natives. A standard prediction from a basic labor market model is that exogenous increases in foreign-born labor supply in a given industry leads to higher native-born unemployment, a “job competition” effect. This presumes wage stickiness, as well as an imperfect ability of existing workers to shift from one industry to another in response to an influx of new workers from overseas. On the other hand, it is also possible that inflows of foreign labor might *create* jobs for native workers, if the new foreign workers establish new entrepreneurial enterprises that employ natives.

Our empirical analysis tests which effect dominates on average, looking separately at the effect of inflows of Colombians, on the one hand, and Europeans, on the other. To identify the causal effect of net migrant inflows on native labor market outcomes, we exploit exogenous variation in migrant inflows driven by economic shocks in migrant source areas. We find that exogenous increases in Colombian presence in Venezuelan industries has led to increases in native-born unemployment as Colombians compete directly with Venezuelans for jobs. Native-born unemployment appears to rise roughly one-for-one with increases in Colombian presence in Venezuelan industries. In contrast, declines in European presence have had no apparent effect on Venezuelan unemployment. Exogenous declines in European presence in Venezuelan industries have not led to declines in native-born unemployment rates, perhaps because European

presence has a “job creating” effect that on average offsets any competition for jobs between Europeans and Venezuelans.

The next section of this chapter provides a brief history of immigration to Venezuela. We then describe the data used in this paper’s empirical analyses in Section 3, and describe major trends in immigration to Venezuela in the last three decades in Section 4. Section 5 sheds light on the impact of migrant inflows to Venezuela on unemployment rates among natives. Section 6 concludes.

## **2. A brief history of immigration to Venezuela**

Large migrant inflows to Venezuela started in 1922 with the beginning of the full exploitation of the country’s oil resources. In 1936, the Venezuelan government passed the Law on Immigration and Settlement which set guidelines for the more than one million skilled immigrants that arrived from 1948 to 1958. Much Colombian immigration came at this time due to the petroleum boom. A period in Colombia’s history between 1948 and 1966 known as *La Violencia* led to massive internal migrations to the 2,219 kilometers of land bordering Venezuela as well as Ecuador and Panama.

The majority of immigrants to Venezuela in the post-World War II period came from Europe. Many immigrants stayed in ethnic enclaves in Caracas and specialized in certain industries: Italians focused on arts and crafts, construction and were often employed as mechanics. Spaniards were more diversified, working as plumbers, carpenters and managers of cafes and restaurants, while Portuguese usually worked in foodstuffs retail. Colombian immigrants in the 1960s usually worked in the manufacturing, agricultural and construction sectors.

In 1958 and 1959, the government began to discourage immigration, but immigration was already in sharp decline, and Venezuela began a period of negative net migration flows (Blutstein et al 1985). The 1950s had been dominated by post-war European immigrants to the cities, while immigration in the 1960s was mainly undocumented immigrants from Colombia and other Latin American countries who worked in the rural sector (Sassen-Koob 1979, p. 478).

In 1965, European immigrants in Venezuela numbered roughly 300,000 (Mille 1965). In that year, 54.9% of immigrants lived in the Caracas metropolitan area, whereas Colombian immigrants were concentrated in the bordering states of Táchira (8.6%), Zulia (10.3%) and Aragua, Carabobo (8.6%) and other (17%) (Chen 1968).

In 1973, following a 250% rise in government revenue due to the rise in international oil prices, the Venezuelan government instituted a selective policy to encourage immigration to respond to the increase in labor demand (Sassen-Koob 1979, p. 456). Following the 1980 economic downturn, immigrant populations began to arrive from the Dominican Republic, Guyana and Haiti (Torales 2003, p. 35). By 1990, more than half of foreign residents in Venezuela came from Colombia, with the majority living in the Venezuelan border states of Zulia and Táchira. In 1999, violence was a major catalyst for Colombian migration to Venezuela, with the United States' *Plan Colombia* causing refugee flows into Venezuela. In Colombian border provinces, Arauca and Norte de Santander, 1.51% and 3.52% of the population respectively, have been displaced into Venezuela.

### **3. Data**

The main data source used in this study is the Venezuelan *Encuesta de Hogares*, a semi-annual survey conducted since 1975 on representative samples of households living in Venezuela. For every year in which the survey was conducted, we have information on the year of birth and place of birth of the person interviewed. This allows us to construct a history of the number of foreign-born people living in Venezuela and of the net flows of foreign-born.

The survey has information on whether the individual was an employer, and we code all employers as entrepreneurs for the purposes of the study. It also has information on the years of schooling of each person, which allows us to look at whether there are large differences in levels of schooling between migrants from different countries.

The survey has two main limitations for the purposes of our study: First, it began in 1975, which means we cannot rely on it to characterize migration before then, and we can only assess the link between international migration and the growth collapse from 1975 onwards.<sup>2</sup> Second, because it only samples people living in Venezuela, we do not know how many foreign-born left the country and how many came into the country from one year to another, i.e. we can only infer net flows of foreign-born people living in Venezuela.

### **4. Large-scale trends in international migration to Venezuela**

The number of foreign born living in Venezuela increased from about 600,000 in 1975 to about 1,000,000 in 2003. Most of the increase occurred in the first five years of this period. Since 1980, the number of foreign-born living in Venezuela oscillated

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<sup>2</sup> The survey collected data on year of arrival to Venezuela, but only for the period 1994-2003.

between 800,000 and 1,000,000. Given that the overall population in Venezuela grew during the 1975-2003 period, this pattern in the evolution in the number of foreign born meant that the proportion of foreign-born living in Venezuela increased in the 1975-1980 period (from about 5% to 6%), and declined consistently since then (to about 4% in 2003). See Figure 1 and Appendix Table 1 for details.

Foreign-born people are much more likely to be entrepreneurs than Venezuelans. In fact, the fraction of foreign-born people living in Venezuela who are entrepreneurs ranged between 14% and 31% in the 1975-2003 period, whereas the fraction of Venezuelans who are entrepreneurs ranged between 4% and 6% in this same period. Among the foreign-born living in Venezuela, the Europeans are much more likely than the Colombians to be entrepreneurs (Appendix Table 2).

There was a big shift in the composition of foreign-born from mostly Europeans to mostly Colombians in the period 1975-2003 (Figure 2). The fraction of Colombians went up from about a third to two thirds, whereas the fraction of Europeans went down from about 50% to about 15%. The fraction of foreign-born that was not born in either Colombia or Europe stayed relatively constant throughout the period.<sup>3</sup>

This shift in composition of foreign-born changed entrepreneurship in Venezuela (Figure 3). As the fraction of Europeans among people living in Venezuela has decreased over time, so has the fraction of entrepreneurs who are foreign born. Indeed, the fraction of entrepreneurs who are foreign born decreased from about 27% in 1975 to about 14% in 2003. Europeans entrepreneurs who represented almost 20% of all entrepreneurs in Venezuela in 1975 now represent less than 4% (Appendix Table 2). The number of

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<sup>3</sup> The age trends are consistent with a higher influx of Colombians than of Europeans. The average age of Colombians increased from 31 to 44 years old in the period 1975-2003, whereas the average age of Europeans increased from about 40 to about 60 years old in that same period.



foreign-born entrepreneurs living in Venezuela started at about 65,000 in 1975, reached its peak (around 120,000) in the period 1987-1992, and then declined to about 75,000 in 2003.

While there are some modest differences between Europeans and Venezuelans in terms of average years of schooling, these differences are very small among the subset of entrepreneurs (Appendix Table 3). European entrepreneurs and Venezuelan entrepreneurs have on average about the same level of schooling (7 years).

In summary, the main findings on the history of international migration in Venezuela that are relevant to this chapter are the following: (1) the percent of foreign-born living in Venezuela has decreased from about 5% to about 4% in the period 1975-2003, (2) there has been a big shift in the composition of foreign born from mostly Europeans to mostly Colombians, (3) the foreign born much more likely than Venezuelans to be entrepreneurs, but the fraction of foreign born entrepreneurs decreased over time, and (4) Foreign born individuals do not differ markedly from locals in terms of educational attainment. The next section describes how these factors may have been related to the growth collapse in Venezuela.

## **5. Impact of foreign-born presence on native-born unemployment**

The dramatic declines in European presence and the increases in Colombian presence in Venezuela over the last three decades prompts the question: how have these changes affected the labor market performance of Venezuelan natives?

The standard prediction from a basic labor market model is that exogenous increases in foreign-born labor supply in a given industry would lead to higher native-

born unemployment, a “job competition” effect. This presumes wage stickiness, as well as imperfect or delayed ability of existing workers to shift from one industry to another in response to an influx of new workers from overseas. One might expect that this “job competition” effect would be more important if the new incoming workers have similar skill characteristics to existing native-born workers.

However, a less widely-considered possibility is that inflows of foreign labor might *create* jobs for native workers, if the new foreign workers establish new entrepreneurial enterprises that employ natives. We might expect that this “job creation” effect would be more likely for inflows of workers with entrepreneurial skills, available financial capital, or higher education levels.

In principle, then, the impact of new inflows of the foreign-born into Venezuelan industries could have either a negative or positive effect on native unemployment. The empirical analysis will test which effect dominates on average, looking separately at inflows of Colombians, on the one hand, and Europeans, on the other.

### 5.1. Identification strategy

Consider the following regression equation for the unemployment rate  $U_{it}$  for native-born Venezuelans in industry  $i$  in year  $t$ :

$$U_{it} = \alpha F_{it}^j + \mu_i + \gamma_t + \varepsilon_{it}. \quad (1)$$

In equation (1),  $F_{it}^j$  is the presence in industry  $i$  of individuals born in location  $j$  in year  $t$ .  $\mu_i$  is a fixed effect for industry  $i$ ,  $\gamma_t$  is a year fixed effect, and  $\varepsilon_{it}$  is a mean-zero error term.

A problem with estimating this regression equation via ordinary least-squares is that the coefficient on foreign-born presence in the industry,  $\alpha$ , need not represent the causal effect on native-born unemployment. For example, there may be reverse causation, if net inflows of native-born workers into the industry stimulate net exit by the foreign-born, leading negative bias in the regression coefficient. Omitted variable concerns also arise, such as third factors (e.g., technology-driven improvements in worker productivity) that stimulate inflows of both native- and foreign-born workers. This latter case would lead the regression coefficient on  $F_{it}^j$  to be positively biased.

It is therefore important to isolate a source of variation in foreign-born industry presence that is exogenous with respect to native-born outcomes in the industry. We therefore focus on variation in foreign-born industry presence that is driven by economic fluctuations taking place *outside* of Venezuela, in migrant *source countries*. To the extent that migrant flows to Venezuela are in part driven by economic conditions in migrant source areas, improvements in economic conditions overseas should reduce net migration (inflows minus outflows) to Venezuela.

Economic conditions outside of Venezuela should help predict net migration to the country as a whole, but how then does one predict the allocation of these migrants across Venezuelan industries? We assume that when migrants arrive, they are more likely to seek employment in industries where migrants from the same source areas are already employed. This makes sense if the existence of within-industry migrant networks lower the costs of job search (as in Munshi 2003).

To make this idea more concrete, consider Table 1, which displays foreign-born presence (Europeans and Colombians separately) by industry in Venezuela for three time periods (1975-1979, 1980-1991, and 1992-2003). In the earliest period, European-born industry presence was highest in international organizations (39.49%), wholesale trade (13.22%), real estate and services to firms (12.50%), and restaurants and hotels (11.89%), and lowest in hydraulic works and water supply (1.26%), public administration and defense (0.92%), and wood extraction (0.21%). In the same time period, Colombian-born presence showed different patterns, being highest in professional services including housekeeping (9.19%), wood industry and furniture (5.15%), restaurants and hotels (5.01%), and clothing and leather (4.50%), and lowest in fishing (0.40%), oil and natural gas production (0.19%), and carbon mines exploitation (0.00%).

If existing migrant networks lower job search costs for newly-arrived migrants, we should expect that new migrant inflows into Venezuela should lead to larger percentage-point increases in migrant presence in those industries where migrant presence is already high. Conversely, when net migrant outflows occur, we should expect larger percentage-point declines in industries where the migrants were initially well-represented.

As documented earlier in this chapter, the past three decades have seen dramatic increases in Colombian immigration to Venezuela. We would then expect that Colombian presence by industry rises more (in percentage-point terms) in industries where Colombians were initially well-represented. This prediction receives some support in Table 1. The largest percentage-point increases in Colombian industry presence from 1975-1979 to 1992-2003 were in two industries that had nearly the highest initial

Colombian presence: wood industry and furniture (initial share 5.15%, rising to 9.82%) and clothing and leather (initial share 4.50%, rising to 9.82%).

With the large declines in net migration by the European-born into Venezuela, we see an analogous pattern but with the opposite sign: the largest percentage-point declines in European-born industry presence occur in industries where Europeans were initially well-represented. Most dramatically among the larger industries, European presence in wholesale trade declines from 13.22% to 2.44%, and in real estate and services to firms from 12.50% to 2.28%. (The decline in European presence in international organizations is even larger, from 39.49% to 10.06%, but this is a very minor employment classification.)

Motivated by these considerations, we construct an instrumental variable for foreign-born industry presence  $F_{it}^j$ , which is lagged overseas economic conditions in location  $j$  ( $Y_{it-1}^j$ ) *interacted* with initial industry presence of those born in location  $j$  ( $F_{i0}^j$ ). (We lag overseas economic conditions by one year because migration cannot typically occur immediately, but should require some advance planning.) The first-stage regression predicting foreign-born industry presence  $F_{it}^j$  is therefore simply:

$$F_{it}^j = \alpha(F_{i0}^j * Y_{it-1}^j) + \delta_i + \lambda_t + v_{it}, \quad (2)$$

where  $\delta_i$  is a fixed effect for industry  $i$ ,  $\lambda_t$  is a year fixed effect, and  $v_{it}$  is a mean-zero error term.

Our strategy, then, is to examine whether and how these instrumented changes in foreign presence are associated with changes in native-born unemployment. The predicted value of foreign presence from the first stage,  $\hat{F}_{it}^j$ , is used instead of  $F_{it}^j$  in the

second-stage instrumental variables regression:

$$U_{it} = \alpha \hat{F}_{it}^j + \mu_i + \gamma_t + \varepsilon_{it}. \quad (3)$$

In panel data contexts, positive correlation in the error terms across observations in different time periods but within the same unit of analysis (in this case, 2-digit industries) biases standard errors downwards (Bertrand, Duflo, and Mullainathan 2004). We therefore report standard errors that account for arbitrary covariance structures among observations from the same industry (standard errors are clustered by industry).

It is desirable to have the regression estimates represent the impact of foreign-born presence for the typical Venezuelan worker. However, industries vary considerably in total size, and so simple unweighted regressions would give equal weight in the analyses to smaller as well as larger industries. We therefore run weighted regressions, where we weight each industry-year observation by its size (total number of workers) in the initial (1975-1979) period.

## 5.2. Construction of the dataset for analysis

Data for the empirical analysis comes from the Venezuelan *Encuesta de Hogares* (described earlier) from 1975 to 2003. Data are aggregated at the industry-year level to calculate European-born presence, Colombian-born presence, and the native-born unemployment rate. The European and Colombian presence variables are simply the fraction of workers in the industry who were born in either Europe or Colombia. We do not break out Europeans by exact country of birth because, unfortunately, for most years of data (all years prior to 1994) the exact country of birth within Europe is not reported in the survey. All industries that are represented in the data for 25 or more years are

included in the analysis (some minor industries only appear in the survey for a few years over the time period). To eliminate outliers that are likely to be due to inconsistencies in data collection over time, we apply a data-cleaning screen to all key independent and dependent variables used in the analyses: we replace the value of a variable with missing if its value is more than three standard deviations away from the mean value of the variable across all years.

In constructing the instrumental variables for both Colombian- and European-born industry presence, the first component is Colombian- and European-born industry presence in an initial period, which we take to be 1975-1979. The measure of economic conditions is simply log per capita GDP (lagged one year) in the place of origin from World Development Indicators 2004. Log per capita GDP is clearly defined for Colombia, but what about the analogous measure for European migrants?

While the *Encuesta de Hogares* records the exact country origins of Europeans in 1975-1979, we do know that most Europeans in Venezuela during that period would have been from southern European countries. The 1971 Venezuelan census (which was somewhat better at recording exact country of birth) found that among the roughly 0.6 million foreign-born individuals in the country, 30% were born in Colombia, 25% in Spain, 15% in Italy, 14% in Portugal, and the remaining 16% in other locations (including other Latin American countries) (Blutstein et al 1985). Therefore, the measure we use for economic conditions in European source areas is the weighted average of log per capita GDP among the three most highly-represented southern European countries, Spain, Italy, and Portugal. We use weights that are proportional to relative presence of

migrants from these countries in the 1971 Venezuelan census (0.46, 0.28, and 0.26, respectively).

Summary statistics for the key variables used in the analysis are presented in Table 2. The unit of observation is the industry-year, across 33 industries and 24 years (1980-2003). The first year of data we use is 1980 because the initial years of data (1975-1979) are used to estimate the initial foreign-born presence by industry, and therefore cannot be used in the main empirical analysis. The mean values of European and Colombian presence across industries and time periods are 0.025 and 0.35 respectively. The native-born (Venezuelan) unemployment rate has a mean of 0.206, with a standard deviation of 0.085 and a range of [0.000, 0.486].

### **5.3. First-stage estimates**

Coefficient estimates on the foreign presence instruments from estimation of first-stage equation (2) are presented in Table 3. The first two columns present coefficient estimates in regressions where the dependent variable is Colombian-born presence in the industry, while in the latter two columns the dependent variable is European-born presence.

In column 1, the coefficient on the instrument for Colombian presence is negative and statistically significantly different from zero at the 1% level. Improvements in Colombian economic performance (with a one year lag) lead to greater declines in Colombian presence in industries where Colombians have greater presence to begin with. The regression in column 2, is identical to that in column 1 except that the instrument for European presence is included as an independent variable. The instrument for European



presence is comparatively very small in magnitude and is not statistically significantly different from zero. This is sensible: shocks in Europe do not affect Colombian presence in Venezuelan industries. Inclusion of the European instrument does not materially affect the coefficient on the Colombian instrument.

The magnitude of the coefficient on the Colombian instrument in both columns 1 and 2 indicates that, for an industry with initial Colombian presence of 0.05 (5%), a 0.02 decline in log per capita GDP in Colombia leads to a 0.0022 (0.22%) increase in Colombian industry presence.

Results for European presence are quite similar. The coefficient on the European presence instrument in column 3 is negative and statistically significantly different from zero at the 1% level. Inclusion of the Colombian presence instrument in column 4 does not materially change the coefficient on the European presence instrument. Improvements in European economic performance lead to greater declines in European presence in industries with greater initial European presence, with a one year lag. Somewhat surprisingly, the coefficient on the Colombian presence instrument is also negative and statistically significantly different from zero at the 1% level, and in magnitude is nearly two-fifths the size of the European presence instrument. One possibility is that European-born migrants currently residing *in Colombia* consider the Colombian and Venezuelan labor markets to be relatively close substitutes and decide where to locate on the basis of Colombian economic conditions. The European-born who enter Venezuela via Colombia may distribute themselves across industries in a manner more similar to the Colombian-born than the European-born. This would mean that the

Colombian presence instrument is correlated with their propensity to locate across Venezuelan industries.

The magnitude of the coefficients on the European instruments in columns 3 and 4 indicates that for an industry with initial European presence of 0.05 (5%), a 0.02 decline in weighted-average southern European log per capita GDP leads to a 0.0013 (0.13%) increase in European industry presence.

Both the Colombian and European instruments are quite strong, as exhibited by the F-statistics at the bottom of Table 3. By themselves, F-statistics for each respective source-country instrument exceed the rule-of-thumb level of 10 recommended by Bound, Jaeger, and Baker (1995). When the other migrant source location's instrument is included in the regression, the F-stat increases in the regression for European presence (column 4), but declines somewhat in the regression for Colombian presence (column 2).

#### **5.4. Second-stage estimates (ordinary least squares and instrumental variables)**

Table 4 presents regression estimates of the impact of Colombian and European presence on native-born unemployment in Venezuelan industries. Panel A presents ordinary least squares estimates from estimation of equation (1), while Panel B presents instrumental variables estimates. In the IV regressions, predicted values of Colombian and European presence from the first-stage regressions of Table 3. All regressions include fixed effects for industry and year. In both panels, the regression in column 1 additionally includes only the Colombian presence variable on the right hand side; the regression in column 2 includes only the European presence variable on the right hand

side; and the regression in column 3 includes both Colombian and European presence separately on the right hand side.

The ordinary least squares results in Panel A indicate that increases in Colombian presence in Venezuelan industries are associated with increases in Venezuelan unemployment. The coefficients on Colombian presence in both columns 1 and 3 are statistically significantly different from zero at the 5% level. By contrast, European presence is not strongly associated with Venezuelan unemployment by industry: the coefficients on European presence are small in magnitude (and actually negative in sign) and are very far from being statistically significantly different from zero at conventional levels.

The ordinary least squares results cannot be given a causal interpretation, so we now turn to the instrumental variables results in Panel B. As it turns out, these results confirm the patterns found in the ordinary least squares regressions. The coefficient on instrumented Colombian presence is large in magnitude (ranging from 1.05 to 1.167 across specifications) and is statistically significantly different from zero at the 1% level in both columns 1 and 3. By contrast, the coefficient on instrumented European presence (here positively signed, in contrast to the ordinary least squares results) is smaller in magnitude and is not statistically significantly different from zero at conventional levels.

In sum, exogenous increases in Colombian presence in Venezuelan industries *cause* increases in Venezuelan unemployment. When it comes to Colombian-born presence in Venezuelan industries, the “job competition” effect would appear to dominate any “job creating” effect. The negative effect of Colombian presence is large: the coefficient estimates on instrumented Colombian presence—from 1.050 to 1.167—

indicate that the native born unemployment rate rises roughly one-for-one with Colombian presence in the industry. By contrast, there is no statistically significant effect of exogenous increases in European presence, perhaps because some fraction of European entry into Venezuelan industries is “job creating” and therefore offsets to some extent any “job competition” effect. This may be due to Europeans’ greater likelihood of being entrepreneurs. On net, we cannot distinguish the effect of European presence on Venezuelan unemployment from zero.

## **6. Conclusion**

We document in this chapter that the Venezuelan economic collapse since 1980 has been associated with very large inflows of Colombians and even larger outflows of Europeans in the past three decades. We shed light on the likely impact that these large migrant inflows and outflows have had on the labor market performance of native-born Venezuelans.

Our analysis of Venezuelan labor market data from 1980 to 2003 reveals that exogenous increases in Colombian presence in Venezuelan industries has led to increases in native-born unemployment as Colombians compete directly with Venezuelans for jobs. Our estimates indicate that native-born unemployment rises roughly one-for-one with increases in Colombian presence in Venezuelan industries. In contrast, declines in European presence are likely to have been somewhat neutral in their effect on Venezuelan unemployment. Exogenous declines in European presence in Venezuelan industries have not led to declines in native-born unemployment rates, perhaps because

European presence has a “job creating” effect that on average offsets any competition for jobs between Europeans and Venezuelans.

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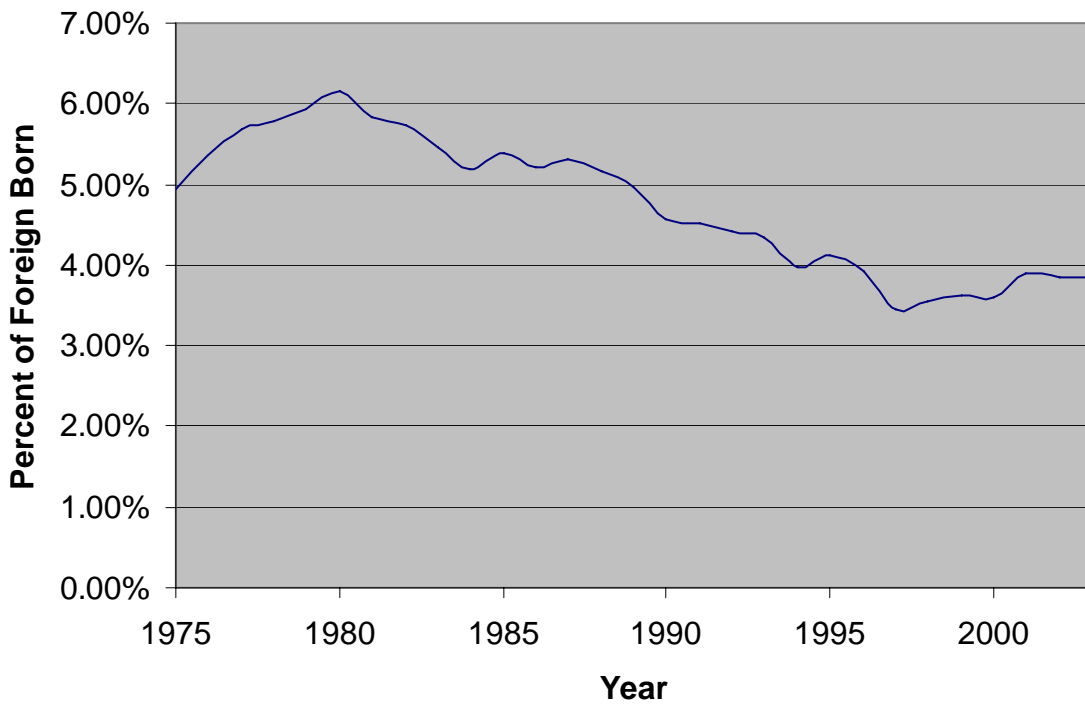
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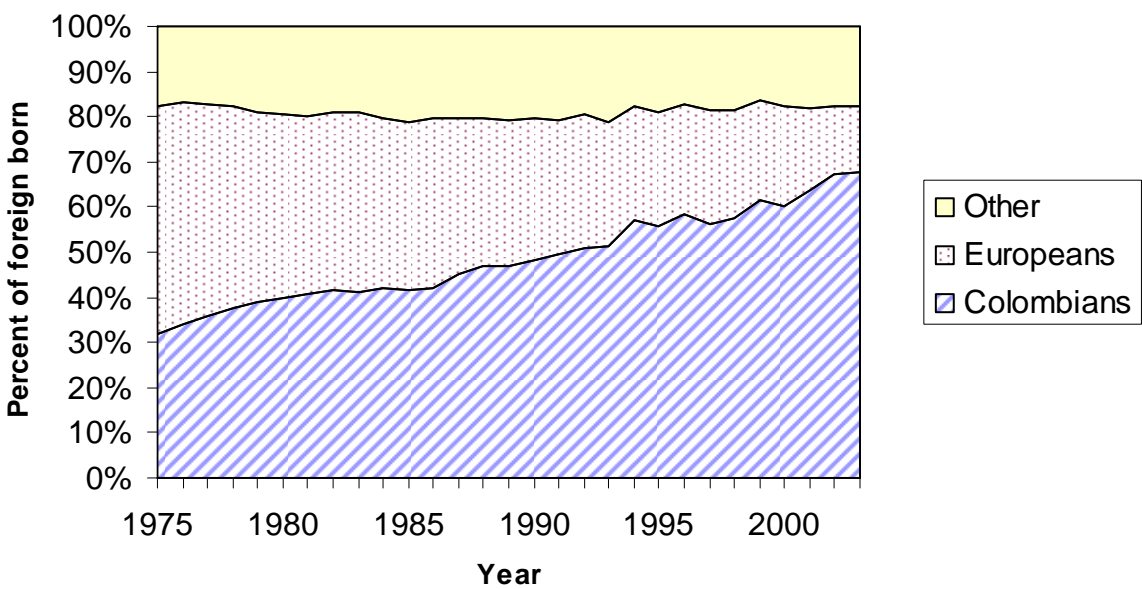
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**Figure 1 - Foreign born as a percentage of total population**

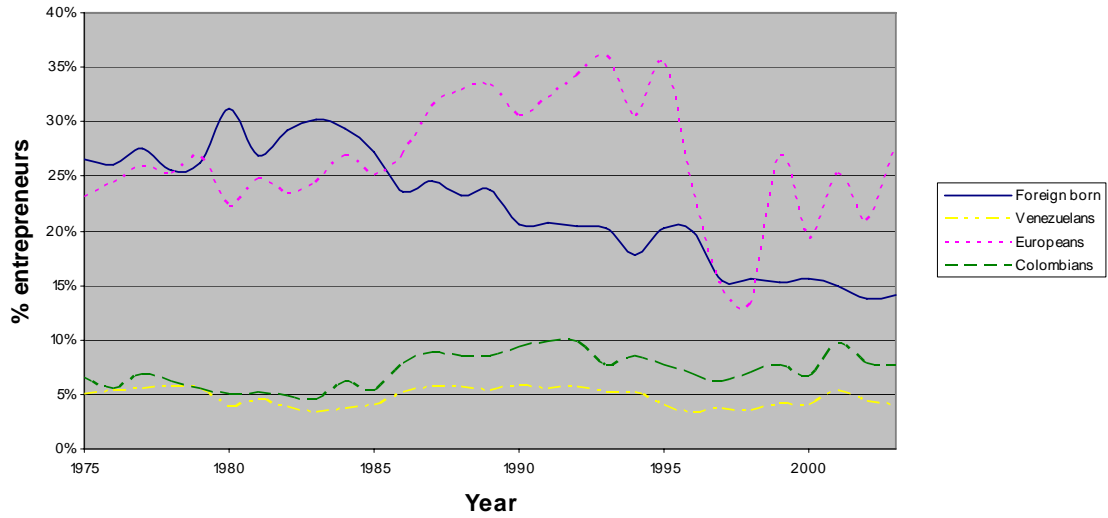


**Figure 2 - Composition of stock of foreign-born over time**

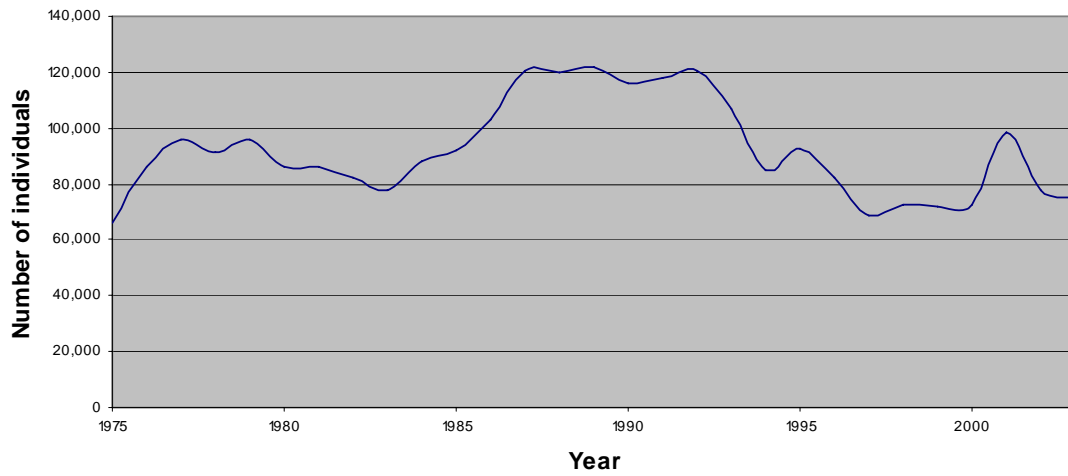




**Figure 3 - Prevalence of entrepreneurship**



**Figure 4 - Number of Foreign born entrepreneurs living in Venezuela**



**CHAPTER 10:**  
**Sleeping in the Bed One Makes:**  
**The Venezuelan Fiscal Policy Response to the Oil Boom**

**María Antonia Moreno and Cameron A. Shelton\***

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## Introduction

At the broadest level, Venezuelan fiscal accounts went through three phases between the democratic consolidation of 1958 and the constitutional reform of 1999. A pre-boom period of remarkable calm existed from 1962-1973 during which per capita oil revenues were relatively stable and so too were fiscal accounts. This was followed by a pair of incomprehensibly massive spikes in per capita oil revenues—peaking first in 1974, receding, then peaking again in 1981—which gradually eroded to pre-boom levels by 1985. This period witnessed massive increases in spending during the first peak, adjustment as the peak subsided, a resurgence during the second peak, and renewed adjustment as the second peak subsided. But the pre-boom calm was never restored: from 1986 through the 1990s, per capita oil revenues continued to decline significantly below their pre-boom levels necessitating continued fiscal adjustment. During this period, fiscal policy was in considerable turmoil: oil revenues volatile and declining, new sources of non-oil revenues developed, and both the magnitude and composition of expenditures fluctuating significantly from year to year.<sup>1</sup>

The story of Venezuelan fiscal policy is the reaction to these massive, exogenous shocks to revenues. In this chapter, we will document this reaction, compare it to theoretical prescriptions for optimal fiscal policy when faced with such shocks, and assess the degree to which suboptimal fiscal policy in the face of these shocks is responsible for the sustained contraction in non-oil per-capita GDP that Venezuela suffered from 1979-2003.

The essential questions are two. First, was the windfall of the oil booms spent wisely? The answer here is pretty clearly “no” though it must be qualified by a realistic appraisal of the political feasibility of optimal fiscal policy. Second, to what extent did excesses during the boom years saddle the economy with a crippling legacy that can account for the continued decline? Or to restate: why didn’t the squandering of the boom simply represent a missed opportunity after which the economy could resume its original growth path? Was the aftermath of the boom entirely to blame, was post-boom fiscal policy also at fault, or were non-fiscal factors to blame? This second question must be addressed to judge the degree to which the *sustained* growth collapse can be laid at the door of improvident fiscal policy.

### Optimal Fiscal Policy in the Face of a Deluge

Fluctuations in Venezuelan fiscal accounts, and indeed in the economy as a whole, are driven primarily by fluctuations in the international market for crude oil. Oil revenues averaged 66% of total central government revenues during the period leading up to the collapse 1962-1979. Moreover, oil revenues had a coefficient of variation 2.3 times as

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<sup>1</sup> The period 2000- present could be characterized as a fourth distinct period due to both rejuvenated oil prices and the adoption in December 1999 of a new and dramatically different constitution replacing the previous one of 1961. This period will remain outside of our analysis as largely irrelevant to the question of whether Venezuelan fiscal policy has contributed to the growth collapse of 1979-2003. It remains to be seen whether the Venezuelan economy will accrue more lasting benefits from the current boom in oil prices than it did from the first boom.

high as non-oil revenues over the same period. Before the collapse and the ensuing volatility in GDP and instruments of taxation, fluctuations in total revenues were driven almost entirely by fluctuations in oil revenues. As we will see, expenditures roughly follow revenues, with negligible inter-temporal smoothing.

The magnitude of the shock to revenues resulting from the oil price hikes of 1973-4 is staggering. The increase in central government revenues between 1973 and 1974 due to the oil sector was 34.5% of 1973 GDP. Over the entire period of high oil prices from 1974 to 1985, the increase of oil prices above their 1960-1973 average contributed an additional 523% of 1973 GDP to a government that traditionally occupied 18-20% of the economy. These figures do not account for the additional profits retained by the oil sector which then had an indirect impact on government revenues through spending in the non-oil sector. To deliver an equivalent shock to the present-day US economy would require the addition of \$69 trillion (constant 2006 dollars) over the next eleven years *to government revenues alone*. A boom of this magnitude simply has no precedent in the developed world and had few precedents anywhere in 1974.

What constitutes optimal fiscal policy in the face of such a colossal influx of revenues? If we view the government as a unitary, benevolent social planner facing an inter-temporal optimization problem, consumption of this windfall ought to be smoothed by investing the vast majority of it. But there are several obstacles to such an increase in the investment rate.

First of all, it is difficult to believe that the domestic economy could find efficient use for this much new capital in such a short span of time. Neo-classical growth models assume diminishing returns to capital implying that developing countries earn higher raw rates of return on investments than advanced economies. These models further assume that the productivity of investments is independent of the speed with which they are undertaken: there exists a set of investments ready to be undertaken whenever the economy can raise the capital. From the perspective of growth models, it follows that all investment ought to be domestic.

This assumes that the proper growth path and associated investments are costlessly and instantly identifiable. But the profitability of an investment depends on the future stream of profits which depend in turn on the future state of the marketplace. The required projection of the marketplace becomes far more elusive in a climate of ultra-rapid growth and sectoral change. Moreover, easy liquidity often results in laxity of due diligence. The resulting combination has historically lead to devastating excesses in developing and advanced economies alike. The over-investment in internet infrastructure and spate of barely-planned dot-coms in the late 1990s US is but the most recent and widely publicized of a long history of irrational investment bubbles. A future of potentially exciting but poorly understood opportunities acts like soapy water. All that is required is a puff of easy credit to produce a raft of bubbles.

In essence, most growth models assume there is no horizon to the growth path. On the contrary, identification of profitable investments requires knowledge of current prices

and ability to project future prices. If individual investments are sufficiently small and are taken in sequence such that each subsequent investment may observe the previous one, then investments are likely to proceed along an efficient path. When one's stride is short compared to the horizon, one can keep to the path. However, if investment is undertaken all at once, even by a single social planner who can solve coordination problems, it seems unlikely that such a planner would be capable of anticipating the complex web of interactions between the various investments to be undertaken simultaneously. During such a rapid flow of funds, the economic landscape may change too quickly for price signals to adjust, be noticed, and the implications processed. This is especially true if allocations are no longer governed by prices but by an industrial planning ministry. If one takes a stride many times longer than the horizon, one may find the path of development has turned aside and one has striven blindly into a quagmire.

The traditional solution in developing countries is state-planned industrialization. Central coordination may ease some, though not all, of the difficulties with directing massive investment. Certainly the direction of capital by a single social planner makes possible projects exhibiting increasing returns to scale, requiring broad technical expertise or the coordination of many firms, or requiring long gestation periods. The perils of planning a large step all at once are somewhat alleviated by the existence of developed countries further up the growth path whose histories may provide some guide to successful industrialization. Nonetheless, the past forty years have made it abundantly clear that no one-size-fits-all development strategy exists. Moreover, even if the broad brushstrokes are correctly painted, successful implementation is fraught with unforeseen, country-specific perils.

Drawing on sixteen case studies of natural resource booms, Ascher (1999) details the unforeseen difficulties governments face trying to pursue centrally planned investment strategies for natural resource windfalls—low accountability of State-owned Enterprises (SOEs), unwise investments within the sector, mis-pricing of inputs and outputs, failure to minimize costs, under-exploitation and inefficient exploitation due to under-capitalization. His cases highlight the difficulty in sustainably extracting revenues from the natural resource sector. As both Ascher and many contributions to this volume (Di John, Manzano, and Haussmann and Rodriguez) detail, Venezuela struggled to extract revenues without crippling the development of the oil industry.

Perhaps as worrying is the likelihood that a rapid and massive investment, even if properly directed, would result in a divergence of aggregate supply and demand. The challenge is not simply in refraining from killing the hen that lays the egg. There is also the danger that the egg will not hatch.

In the long run, spending the boom on productive investments (as opposed to consumption or projects with poor returns) ought to increase aggregate supply as well as aggregate demand. In practice, increases in the former lag behind increases in the latter as investments take time to produce returns. Moreover, proper coordination of centrally directed industrialization is nontrivial and can easily result in disappointing productivity

gains. This is especially true of the kind of big-push policies to which Venezuela turned in 1974. Di John (this volume) writes

“Big push” natural-resource-based industrialization strategies commit large sums of state resources to long-gestating, technologically demanding investment projects, which require complementary investment and state-business conglomerate coordination. ... The greater learning costs and gestation periods of such ‘big push’ investments bring greater economic and political challenges and risks that distinguish this type of economic strategy from the small-scale and simple technology of the easy ISI stage. ... As it turned out, the Achilles Heel of Venezuelan industrialization strategy was to be a growing inefficiency in the implementation of ‘big push’ strategies.

Di John then explains how failures in the coordination, monitoring, and discipline of the state owned enterprises and private businesses receiving government loans—due largely to populist, clientele politics—led to a failure of the investments to lead to productivity gains.

Absent productivity gains and export earnings, a huge increase in government investment produces an imbalance between domestic aggregate supply and demand, leading to too many dollars chasing too few goods. This kind of imbalance may regularly result from investments that are unproductive or whose returns are delayed. But in an economy on a smooth growth path, this sort of imbalance will simply be part of the steady state. Given the enormity of the Venezuelan oil boom, the associated imbalances are likely to be a sizeable fraction of GDP, swamping other effects, resulting in considerable overheating and the attendant misallocations: in short, dire consequences for the non-oil sector. A smoother growth path of government expenditure would serve to prevent domestic aggregate demand from outstripping domestic aggregate supply thus preventing runaway inflation.

Di John describes the difficulties in selecting the proper firms, coordinating complementary investments, monitoring the use of funds, and effectively conditioning government loans and transfers on performance. The question that is often glossed over is the ability of the central government to identify the proper growth path. Di John submits that Venezuela invested in exactly the same mix of heavy manufacturing industries—steel, chemicals, -- as the countries which industrialized successfully through big push policies. While this signals that such an industrial mix is not fatally flawed, it does not necessarily follow that this was either the correct mix for Venezuela or the most efficient mix overall.

The clear prescription would be to establish an oil fund to smooth the domestic absorption of the windfall. The fund would buy foreign securities—in effect lending the money overseas to larger markets with a larger pool of credible investment opportunities—to be repatriated in the future. In the meantime, a smaller, more manageable fraction of the money would be steadily invested in the proven domestic enterprises whose rate of return exceeded that available overseas. Reducing the ratio of new investment to the size of the established economy would have two effects. First, breaking the windfall into several moderate strides rather than one long one would enable institutional learning-by-doing, enabling the economy to adjust to and address mistakes in

the initial approach. Second, it would reduce the magnitude of the inevitable momentary divergences of demand and supply. And third, by lengthening the period over which the windfall is invested, it would deliver a longer period for new projects to gestate before the fiscal tap is turned off, making the transition from oil to non-oil economy smoother.

During the sample period, Venezuela failed to put into practice a functioning oil development fund to smooth the use of the windfall.<sup>2</sup> Practically the entirety of the boom was domestically invested as soon as it was accrued: net foreign loans never constituted more than 1% of total expenditures in any year, and averaged just over one third of one percent during the boom years from 1974-1985. The fiscal balance averaged a deficit of 0.6% of total GDP during the period 1974-1985. We will show that this unwillingness to smooth the entry of oil revenues into the economy contributed to an overheating of the economy which undermined growth. In effect, there was neither inter-temporal smoothing of the surplus, nor rationing of domestic credit. The fiscal authority failed to control the taps so the economy was deluged.

### **The Venezuelan Growth Spiral**

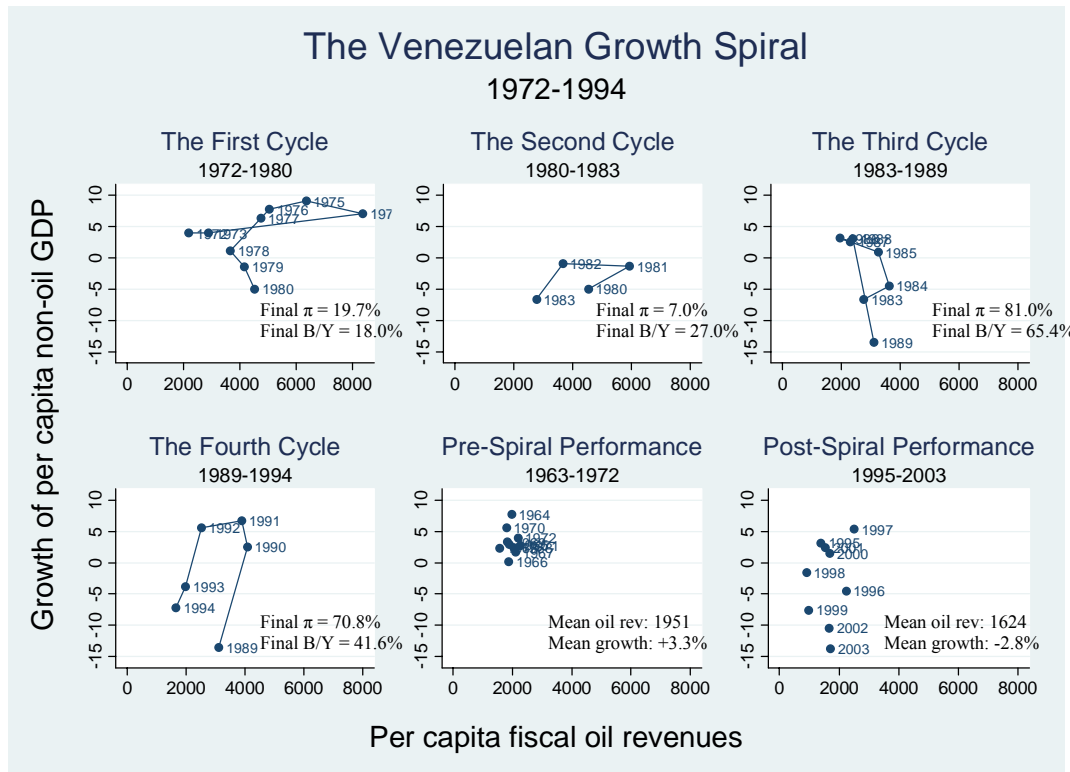
During the period 1972-1994, the Venezuelan economy underwent four repetitions of a distressing cycle (see figure 1). Driven by a surge in the price of oil, a boom in per capita oil revenues led to a surge in growth of the non-oil sector.<sup>3</sup> As the initial boost to revenues (and expenditures) subsided, the growth surge continued a few years longer before the economy slid into recession. The next oil price spike rescued the economy from recession briefly only to lead to a new cycle. But the cycle is not closed: as we progress from one to the next, the economy gradually spirals downward. Each new cycle begins with some combination of higher inflation, more debt, and slower growth than the previous cycle. The last two frames of figure 1 compare the pre-spiral era to the post-spiral era to show the cumulative effect on the economy. The average annual growth rate of real per capita non-oil GDP has declined from 3.3% in the pre-boom era to -2.8% in the post boom era. Moreover, growth is far more volatile in the post-boom era. True, oil revenues are on average 16.7% lower in the post-spiral era and are also more volatile, but

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<sup>2</sup> An oil stabilization fund was enacted in a reform to the Central Bank Law in 1960, but it was later eliminated in 1974. More than two decades later, in 1998 an Investment Fund for Macroeconomic Stabilization (Spanish acronym FIEM) was created; however, its law underwent several reforms (1999, 2001, 2002, 2003). In 2003, a new law was approved (Macroeconomic Stabilization Fund Law), but it has not been operative yet.

<sup>3</sup> The first cycle is driven by the first oil price hikes in 1973-4. The second cycle is driven by the second oil price hikes in 1979-81. The fourth cycle is driven by the mild oil price spike accompanying the Persian Gulf War. Unlike the others, the third cycle is driven not by an increase in the international price of crude oil, but by a 25% devaluation of the Venezuelan nominal exchange rate in 1984. Because a large fraction of Venezuela's fiscal revenues come from the export of oil, devaluation adjusts the relative price of oil exports and public goods, balancing the fiscal accounts. This was a trick the Venezuelan government was to resort to again in 1986 when the price of oil finally collapsed from the abnormally high levels that prevailed from 1974-1985. In effect, one could actually split the third cycle into two sub-cycles: one from 1984-1986 driven by the first devaluation and another from 1986-1989 driven by the second devaluation. Taken together, these sub-cycles were weaker than the others and resulted in a more dire final downturn because they were not the result of an oil boom but rather a devaluation in the face of a revenue decline.

the differences in both the average growth rate and its volatility seem out of proportion to this decline. One imagines that had the economy gone directly from the oil revenues of the pre-spiral period to those of the post-spiral period, skipping over the volatile years, the consequences would not have been so dire. The Venezuelan economy has exhibited significant hysteresis in response to the oil shocks.



**Figure 1:** Successive shocks to per capita oil revenues generate bursts of growth which eventually overheat the economy, leading to inflation. As the revenue burst subsides, spending adjusts with a slight lag, leading to an increase in debt. The ratio of debt to GDP is exacerbated by the output decline of the overheated economy. The economy is never allowed to cool off fully before a new influx of revenues is added. As a result, each new cycle begins from a more dangerous position. Post-cycle economic performance is dramatically worse than pre-cycle performance: the boom has left a bad legacy.

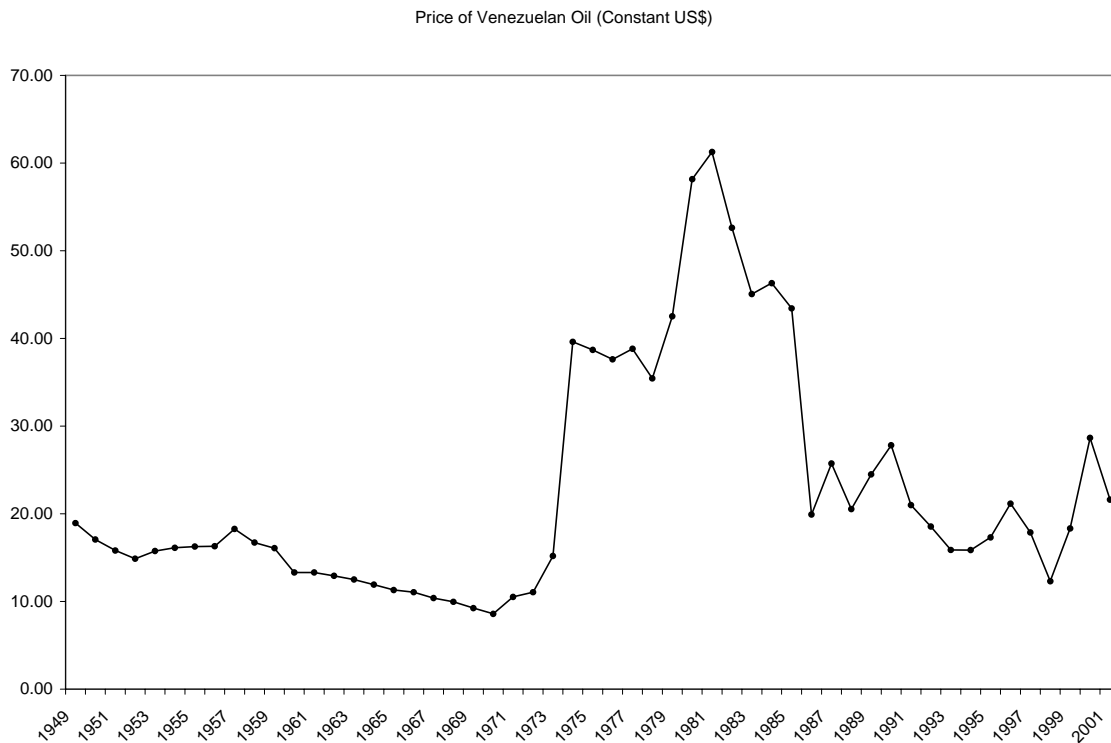
Source: author's calculations based on oil price data from Lopez-Obragon and Rodríguez (2001), and GDP data from Rodríguez (2004).

Is fiscal policy responsible for this hysteresis? Part of the answer comes from the efficiency of fiscal policy during the boom. Did an increase in government spending or transfers to enterprise (whether publicly or privately operated) actually stimulate output growth? Figure 1 strongly suggests not! But figure 1 does not separate the effects of discretionary fiscal policy from other concurrent effects of the oil boom. To isolate the effects of fiscal spending on the economy, we first discuss the evolution of fiscal accounts and then estimate a three-variable VAR—net transfers, government consumption, and output growth—with oil revenues as an exogenous forcing process.



## Driven by Oil

Throughout this chapter, we take these oil revenues as largely exogenous to fiscal policy decisions for two main reasons. Like a producer in any market, a country may perhaps raise the price of its own oil, depending on its market share, substitutability between its oil and that of other producers, and other factors. However, given the limited government control over quantity before nationalization, its limited vote in the OPEC cartel, and its limited market share in all periods, it is unclear exactly how much market power Venezuela as an individual country, distinct from its membership in OPEC, has been historically able to exercise over periods longer than a few quarters.<sup>4</sup> Nonetheless, even if the Venezuelan oil industry is considered a price taker, oil revenues may still be considered endogenous for a second reason. The strategy of exploration and extraction determines the time-path of the quantity of oil produced and thus the time path of revenues, given a price. Thus oil revenues can be considered exogenous only to the extent that the oil development strategy remains stationary.



**Figure 2:** Constant dollar price of Venezuelan oil.

Source: author's calculations on data from Lopez-Obragon and Rodríguez (2001)

<sup>4</sup> Ascher (1999) describes an incident in 1982 when the Minister of Hydrocarbons and Mines raised the price of Venezuelan heavy crude to offset the loss of revenues from OPEC's decisions to reduce prices on light crude by stating that "it was clear to oil experts that the price increase would soon reduce demand for Venezuelan heavy crude." Though not a formal estimate of elasticity, this incident illustrates that Venezuela did retain control over some prices under OPEC but that demand exhibited significant elasticity on a time-scale of a few quarters.

As Manzano explains in his contribution to this volume, Venezuelan oil development policy is characterized by three broad philosophies during our sample. These philosophies broadly coincide with three different eras in the price of Venezuelan oil (see figure 2 and table 1). In the first era (1962-1973), oil prices are low and relatively stable. The Venezuelan policy is one of conservation leading to high taxation and low investment. During the second period (1974-1985), prices are high and moderately volatile. Nonetheless, production and revenues per capita are falling in Venezuela due to low investment in previous years and the OPEC strategy of further limiting production to keep prices high. In the third period (1986-1999), prices are middling and highly volatile. Meanwhile, conservation and total nationalization is deemed unsuitable and a relaxation of taxes and limited return of private investment leads to a modest expansion in production. As the development strategy shifts, the data generating process for revenues changes. But within an era, shifts in revenues are driven mainly by exogenous factors that affect the world oil market, with one crucially important exception. As oil revenues fell and adjustment was sometimes incomplete or delayed, the fiscal authority often faced serious deficits. Several times during the sample period, Venezuela devalued the official exchange rate to increase oil fiscal revenues to shore up fiscal accounts. Thus we have divided the sample into these three periods for analysis: 1962-1973, 1974-1985, and 1986-1999 but we measure oil prices variously in either Bolivars or Dollars. In our descriptive analysis we refer to prices in constant Bolivars. In the structural VAR, we enter oil prices in constant dollars to keep it from including exchange rate policy.

	Average	Standard Deviation	Coefficient of Variation	Average <i>absolute</i> rate of growth	Characterization of the era
Period 1 (1962-73)	11.22	1.77	0.158	8.39	Low level, Low volatility
Period 2 (1974-85)	44.96	8.31	0.185	10.18	High Level, Moderate Volatility
Period 3 (1986-99)	19.77	4.17	0.211	19.80	Moderate Level, High Volatility

**Table 1:** The average level and volatility of oil prices during the three distinct eras. Source: Author's calculations on data from Lopez-Obragon and Rodríguez (2001)

### Spending the Windfall

Figure 3 shows that the first peak in oil revenues (1973-4) initiated an increase in government consumption which continued to grow even as the peak in revenues subsided (1974-78) and was sustained through the upswing of the second peak (1979-1981).<sup>5,6</sup>

<sup>5</sup> Government consumption is taken to be the sum of wages and salaries, purchases of good and services, and transfers, both current and capital, to administrative entities. Administrative Entities (AEs) are Central Government's autonomous agencies that provide public services in a variety of areas including education,

Additional revenues went initially to the Venezuelan Investment Fund (Fondo de Inversiones de Venezuela-- FIV) through which the government would finance its development strategy contained in the Fifth National Plan: investment in large-scale industrial development projects (steel, petrochemicals, aluminum, electricity). In the fiscal area, funding was mainly vested in autonomous entities, which included hospitals, highways, a hydroelectric consortium, shipbuilding firms, a national steamship company, an airline, among others); in the classification by sector, the spending firstly favored expenditures directed to productive activities (especially, agriculture) and, secondarily, social items. In part, this represented a continuation of the policy of sowing oil: continued investment in education, health, electricity, potable water, and other basic projects. But it also represented a significant foray into large-scale industrial development.

Government accounts show that the deluge was initially directed mostly toward investment rather than government consumption. Looking at figure 3, one can see that the composition starts out well enough, with much more of the windfall in the first few years earmarked for investment categories than for government consumption. Table 2 shows that the mixture of loans, grants, and outright public investment varied from year to year. For the first few years after an increase in oil revenues, most of the additional investment takes place as a boost in loans to public and private firms after which a transition to direct government investment or outright transfers to SOEs occurs.

As we shall demonstrate later, government expenditures on the whole are only mildly hysteretic during the boom—responding only marginally less quickly to decreases than to increases in revenues. However, this is not true of each individual component of expenditures. As each of the revenue-booms subsided, the increases to government consumption stubbornly persisted while most of the burden of fiscal adjustment fell on investment. As a result, the composition of the additional spending fueled by the rise in oil prices shifted from investment to consumption (see table 2).

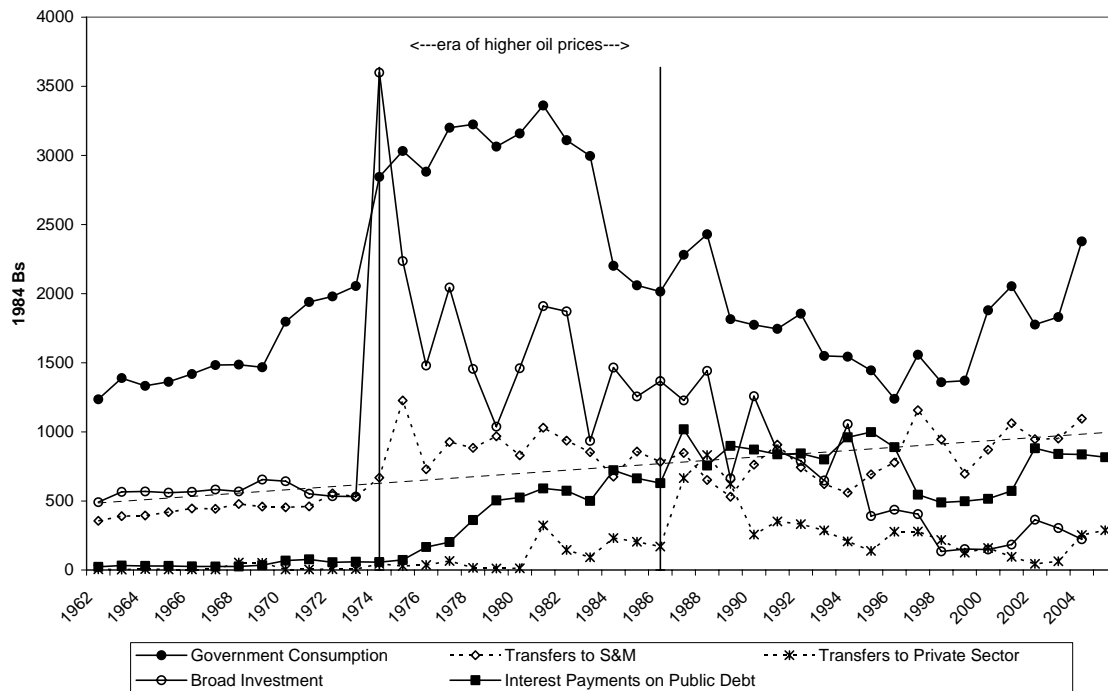
Eventually, government consumption does respond to declines in revenues. For example, real per capita government consumption declines by 38.7% between 1981 and 1985 to return in 1985 to almost exactly its level in 1969, the year before the first big increase. In 1985, real per capita non-oil GDP is still 33% higher than it was in 1969: the contraction of the last six years has not yet completely eroded the gains of the previous decade. Thus government consumption actually occupies a smaller fraction of GDP at this point than it did before the boom. Government consumption would continue to decline over the next decade during the sustained growth collapse.

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healthcare, utilities, transportation and communication, justice, housing, environmental protection, and so on.

<sup>6</sup> In fact, the first big increase in government consumption comes between 1969 and 1971, *before* the oil boom. This pre-boom increase is spent mainly on an expansion of public sector programs on education and healthcare (goods and services +105%) and the additional salaries to government workers (+33%) to administer these programs.

### Per Capita Fiscal Expenditures



**Figure 3:** The lion’s share of the initial boom in 1974 goes to broad investment: government investment, net loans, and transfers to SOEs. But the increases in government consumption are more persistent and as the boom in revenues recedes, they gradually claim a greater share of government expenditures leading to an increase in debt. Explicit transfers to the private sector are not a large part of government finances. Transfers to state and municipal governments gradually increase over the period but remain relatively small. Source: author’s calculations on data from the Central Bank of Venezuela.

#### Spending the Boom: Consumption and Investment

year	Government Consumption [1]	Government Investment [2]	Transfers to SOEs [3]	Net loans-domestic [4]	Total Investment [2]+[3]+[4]	Interest Payments [5]	phase
Increase over historical average (1962-1973) as a fraction of excess oil revenues							
1974	21.3%	0.9%	23.2%	50.1%	51.0%	0.2%	Net Loans
1975	32.5%	3.5%	23.1%	33.8%	37.3%	0.6%	Net Loans
1976	37.2%	23.9%	50.1%	2.1%	26.0%	3.0%	SOEs + GI
1977	48.5%	11.7%	28.4%	32.5%	44.1%	4.0%	SOEs + GI
1978	66.5%	23.6%	27.7%	12.3%	35.9%	10.7%	SOEs + GI
1979	48.8%	10.9%	-9.3%	4.5%	15.4%	12.6%	SOEs + GI
1980	43.5%	-0.3%	-1.3%	24.9%	24.5%	11.0%	SOEs + GI
1981	36.9%	-0.4%	13.7%	28.2%	27.8%	9.4%	Net Loans
1982	53.4%	17.0%	-3.0%	28.5%	45.5%	15.4%	Net Loans
1983	68.6%	-1.3%	-25.2%	19.1%	17.7%	18.4%	Net Loans
1984	22.9%	-8.5%	10.1%	13.5%	32.9%	20.6%	SOEs + NL
1985	20.1%	-11.5%	14.4%	13.2%	28.8%	21.5%	SOEs + NL
total							
1974-85	21.3%	0.9%	23.2%	50.1%	51.0%	0.2%	Net Loans

**Table 2:** These figures give the increase in a spending category over its pre-boom (1962-73) average as a percentage of the excess oil revenues. Excess oil revenues are calculated as that fraction of oil revenues which is due to the increase in the current oil price over its pre-boom average. Notice the different phases during the first and second oil spikes. An initial increase in net loans is eventually crowded out by consumption as the wave of excess revenues subsides. Columns [1] – [5] need not add to 100% due to changes in non-oil revenues or the deficit. Source: author’s calculations on data from the Central Bank of Venezuela.

Unfortunately, with revenues fluctuations of this magnitude, even modest hysteresis delivered deficits which were a non-negligible fraction of GDP. The ratio of debt to GDP declined at the beginning of the boom (1972-1975) due to GDP growth. But despite continued strong GDP growth, indebtedness soared from less than 7% to almost 35% of GDP between 1975 and 1978 as government spending receded more slowly than revenues from the high-water mark of 1974. While the second oil peak improved public finances between 1979 and 1982, the growth collapse meant that the debt ratio merely paused at 40% during these years. As the oil peak subsided, the debt ratio ballooned to 64% over the next two years. It would eventually grow to 74% in 1989 before starting a decade-long decline.

There are two other trends worthy of comment. Gavin and Perotti (1997) have previously noted a mild trend toward decentralization in Latin America as a whole. In Venezuela, however, transfers to state and municipal governments as a fraction of GDP are not statistically significantly different in the second half of the sample than in the first. Direct transfers to private individuals remain small throughout the period, peaking at 3.6% of GDP in 1987 and averaging less than 1% of GDP over the entire sample from 1962 to 1999. As in most Latin American countries, Venezuelan government is not a significant manager of entitlement programs during the sample period.<sup>7</sup>

### **The Bang for the Buck**

Of course, the total economic return on a spending item is not always in line with its classification as either consumption or investment. Our category for government consumption includes spending on education, transportation, law enforcement, healthcare, and other goods that may improve human capital or be classified as public infrastructure and therefore be expected to have significant returns. Similarly, not all investment is productive.

To get a measure of the effectiveness of these spending categories, we estimate a three-variable VAR of GDP, government spending on public goods, and net transfers to the private-goods sector using oil revenues as an exogenous forcing process. All variables are seasonally adjusted using the X12 process. All variables are in log of per capita real values using the 1984 base year. Oil revenues have been converted to \$US to net out Venezuelan devaluations. Due to difficulty acquiring historical quarterly GDP data, our sample is somewhat truncated, running from 1976:1 to 1999:4. Appendix A details the construction of these variables from fiscal accounts as well as the construction of the elasticities required for the identification strategy. The specification is

$$X_t = A(L)X_{t-1} + B(L)O_t + u_t$$

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<sup>7</sup> This more limited role for government accounts for the majority of the difference in government size between Latin American governments and European governments. The fraction devoted to provision of public goods is roughly the same in both sets of countries.

where  $X_t = [T_t \ G_t \ Y_t]'$  is the vector of net transfers to the private goods sector, government expenditures on consumption and public investment, and output growth,  $O_t$  is the exogenous variable oil revenues, and  $u_t$  are the VAR disturbances. The VAR is estimated with four lags of each endogenous variable, four lags of the exogenous variable, plus a constant term and quarterly dummies (not shown). The number of lags was chosen using Wald lag exclusion statistics. The quarterly dummies are excluded from the calculation of impulse responses so the impulse response functions correspond to a shock in quarter one. In practice, the differences in responses by quarter are miniscule. Dickey-Fuller and Philips-Peron tests strongly indicate that all variables are  $I(1)$ , thus the VAR is estimated on first differences. The reported impulse responses are for the original un-differenced variables.

Identification is achieved via the strategy detailed in Blanchard and Perotti (2002) and Perotti (2004). Without loss of generality, the VAR innovations are written as functions of the structural shocks,  $e$ . For shocks  $e$  and  $u$ , the subscript refers to the quarter, the superscript to the endogenous variable.

$$u_t^t = \alpha_{ty} u_t^y + \beta_{tg} e_t^g + e_t^t$$

$$u_t^g = \alpha_{gy} u_t^y + \beta_{gt} e_t^t + e_t^g$$

This identification strategy is based on the assumption that discretionary fiscal policy cannot respond to output within the same quarter, thus  $\alpha_{TY}$  and  $\alpha_{GY}$  consist only of the automatic policy responses of T and G to Y.<sup>8</sup> These can be calculated (with effort) prior to the VAR using information on the tax codes and spending rules (see Appendix A). In general they will be time-varying as tax codes and other fiscal rules change. Cyclically adjusted shocks can then be calculated using these estimates.

$$\tilde{u}_t^t = u_t^t - \hat{\alpha}_{ty} u_t^y = \beta_{tg} e_t^g + e_t^t$$

$$\tilde{u}_t^g = u_t^g - \hat{\alpha}_{gy} u_t^y = \beta_{gt} e_t^t + e_t^g$$

Assuming a particular Cholesky ordering of T and G allows one to restrict either  $\beta_{tg}$  or  $\beta_{gt} = 0$ .<sup>9</sup> This system can then be solved for the structural shocks  $e^g$  and  $e^t$ . These can then be used as instruments for the VAR innovations to estimate the structural parameters for output,  $\alpha_{yt}$  and  $\alpha_{yg}$ .

$$u_t^y = \hat{\alpha}_{yt} u_t^t + \hat{\alpha}_{yg} u_t^g + e_t^y$$

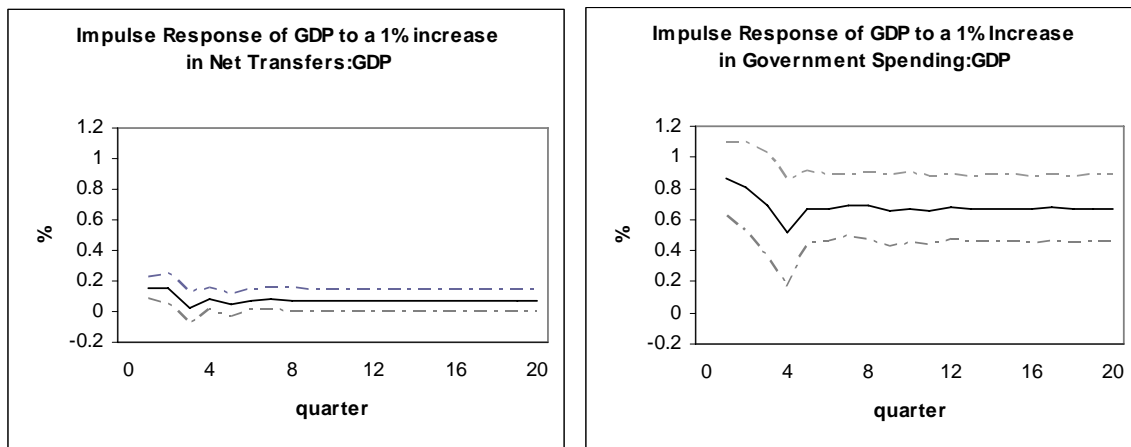
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<sup>8</sup> We include contemporaneous oil revenues on the right-hand side to allow for a within-quarter response of fiscal accounts to oil revenues.

<sup>9</sup> In their studies of the US and other OECD countries, Blanchard and Perotti suggest there is little theoretical or empirical guidance for the choice of ordering between G and T and note that it makes little difference due to the low correlation between the cyclically adjusted residuals for G and T. However, in our case, there is clear anecdotal and empirical evidence that spending decisions respond to revenues rather than the other way around. Hence we choose to order net transfers before spending.

Thus the structural parameters are identified. For a careful response to several of the major criticisms of this method including the timing of fiscal shocks, whether VAR innovations simply reflect the delivery schedule of fiscal programs, whether VAR innovations simply reflect accounting principals, and whether fiscal shocks are anticipated and therefore misidentified by the structural VAR, we refer you to Perotti (2004).

Our decomposition of fiscal accounts separates government purchases and investments in public goods (G) from net transfers to private actors and SOEs (T).<sup>10</sup> The intent is to separately identify the effectiveness of direct public sector stimulus from that of transfers to the private sector.



**Figure 4:** 1976:1-1999:4. Within a five year horizon, government spending on public goods is much more effective than transfers to the private sector.

Figure 4 displays the impulse response of output to increases of 1% of GDP in transfers to the private goods sector and government expenditures for the full sample. Notice that each of these shocks is expected to be expansionary with permanent effects which are almost fully realized within the first 6 quarters. We have chosen our decomposition of fiscal accounts so as to separate transfers for the production of private goods (T) and spending on the provision of public goods (G). Table 3 displays the results when estimated for the sub-periods corresponding to the different eras of the oil sector. Several things become clear when looking at these tables:

- (i) Government spending and investment in public goods is much less effective during the oil boom (1976-1985) than after it (1986-1999); further evidence that the economy was already at full employment during this period.

<sup>10</sup> We have tried other two-variable decompositions of fiscal accounts which more closely match the spirit of the discussion in the preceding section, "Spending the Windfall". However, these decompositions fail to give consistently coherent results. Perhaps this indicates that such groupings are less useful than this more traditional grouping.

- (ii) The minimal and maximal responses of GDP to an increase in transfers indicate that the initial effect is positive but that after perhaps a year, the effect becomes negative.
- (iii) In both sub-periods, government spending on public goods is far more effective at stimulating the economy than government transfers to SOEs and the private sector. The effect of transfers is quite weak.
- (iv) Items (ii) and (iii) are true in both sub-periods but while the effect of direct government spending is stronger in the post-boom, the effect of transfers is stronger during the boom.

Response of GDP to a Net Transfers Shock									
Sample	2	4	8	12	20	max	quarter	min	quarter
76-99	0.15	0.08	0.08	0.07	0.07	0.16	1	-0.16	3
76-85	-0.06	-0.01	-0.06	-0.01	-0.01	0.19	3	-0.19	6
86-99	0.05	-0.04	-0.09	-0.07	-0.08	0.05	2	-0.05	6

Response of GDP to a Public Spending Shock									
Sample	2	4	8	12	20	max	quarter	min	quarter
76-99	0.80	0.51	0.69	0.68	0.67	0.86	1	0.51	4
76-85	0.36	-0.07	0.30	0.48	0.34	0.67	7	-0.07	4
86-99	0.91	1.25	0.96	1.06	1.04	1.25	4	0.91	2

**Table 3:** In conjunction with the evidence of a strong output response to public spending in the post-boom era, the weak response of output to public spending during the boom era is further evidence of an overheated economy.

The response to government spending peaks at 4 quarters with a medium-run multiplier of roughly one in the post-boom period but only one third during the boom. This is strong evidence of an economy that was saturated and overheating during the boom. The results on transfers to the private sector might be interpreted in two (or more) ways. At first glance, the general weakness suggests that government transfers—including transfers to SOEs for the purpose of producing private goods—are not nearly as effective stimulus as government spending on public goods. On the other hand, in an investigation of six OECD countries, Perotti (2004) found a wide variety in the output response of a similarly defined net transfer category. As Blanchard (2006) notes in reference to these results,

This may tell us something about the weakness of structural VARs (vector auto-regressions), as well as something about fiscal policy. I think it would be wrong to say the fault is entirely with the structural VARs. The results may be the effects of the methodology, but they may also reflect something real.

Blanchard and Perotti have somewhat different aims than we do. They are primarily interested in stimulus from income-tax cuts in industrialized countries. On the contrary, we are interested in transfers to SOEs in a developing country. Nonetheless, this is more evidence that the macroeconomic effects of transfers are somewhat more complex than current theory predicts. For our immediate purposes, it is more evidence suggesting that transfers to SOEs failed to deliver the expected stimulus to output within five years.



## **Into the Straits of Messia**

The first cycle dumped a staggering amount of money into the economy. Between 1974 and 1978, the increase in oil prices above their 1960-1973 average contributed 143.6% of 1973 GDP to government revenues. Most of this first windfall was government directed investment though a significant fraction went to an increase in government purchases and the public wage bill. But the economy clearly overheated. Inflation began to rise and GDP first halted in 1978 and then fell in 1979, despite the rebound of oil prices to even greater heights.

In fact, the second oil price spike contributed a second influx of easy money which was, as a fraction of the economy before the spike, similar in magnitude to the first. Between 1979 and 1985, the increase in oil prices above their 1960-1973 average contributed 164.4% of 1978 GDP to government revenues. But the economy was already overheated and not capable of domestically processing this second influx of cash. Inflation, which had spiked from a historical average of 3% in 1972 to almost 12% in 1974, hovered at just under 8% in 1978. The second influx of cash sent it soaring immediately to 20% in 1979.

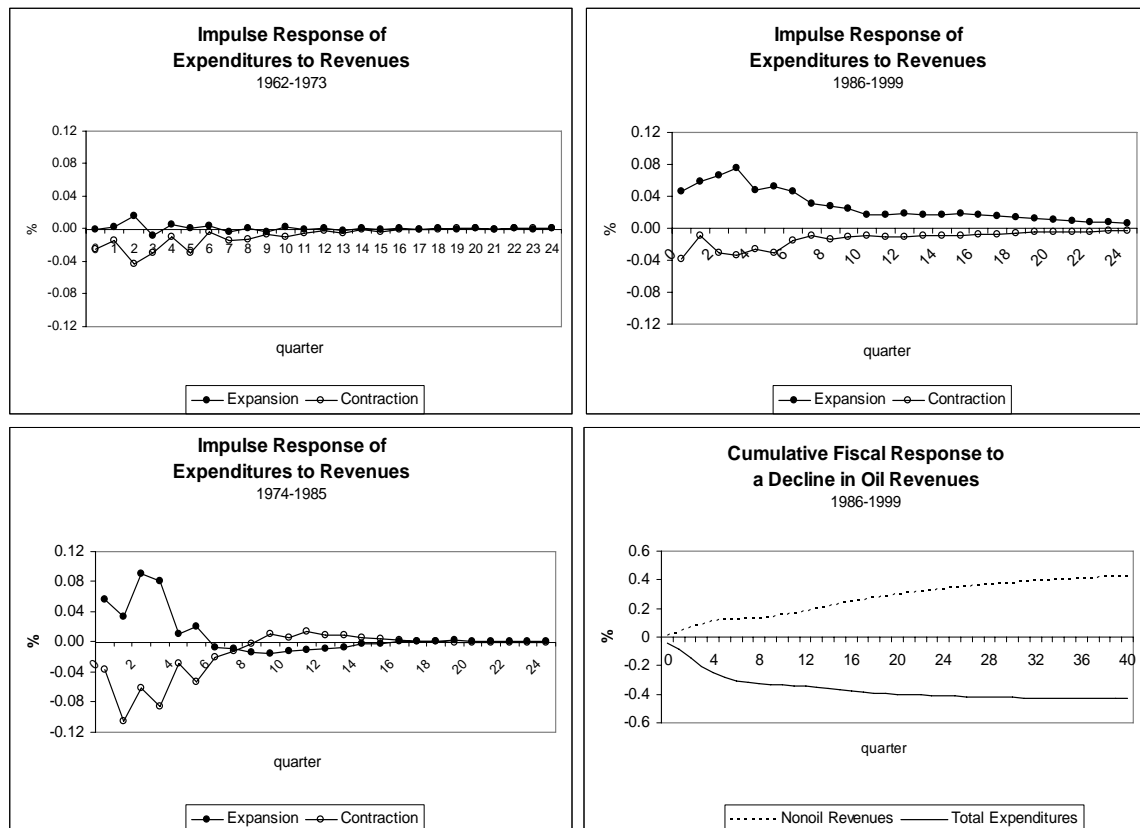
Throughout the second cycle, the economy suffered a deep contraction to work off the inflationary excesses that followed the first boom. By the end of the cycle, inflation had been reduced from a peak of 20% to a more manageable 7%. In 1983, debt was a reasonable 27% of GDP and the budget was close to balanced: the deficit was 1.6% of GDP, down from 4.7% the previous year despite a one-year decline in per capita oil revenues of 24.4%. However, non-oil GDP had contracted by a tragic 6.7% in 1983—the fifth consecutive year of outright decline and the worst.

At this point the government was entering the fiscal equivalent of Odysseus' voyage through the Straits of Messia. Faced with an increasing debt to GDP ratio, the government could choose to do nothing and suffer a rising level of debt with consequences for interest rates and future access to capital, or devalue the Bolivar, increasing the domestic value of fiscal oil revenues and thus balancing the budget. Unfortunately, the latter approach is tantamount to printing money with predictable consequences for inflation. Caught between the Scylla of inflation and the Charybdis of debt.

Naturally, the sustainable option is to reduce expenditures, improving the deficit, leading to a reduction in the debt ratio thus widening the straits. Unfortunately, the short term effect of a fiscal adjustment would be a contraction which would temporarily exacerbate the debt ratio, thus narrowing the fiscal Straits. The trick is to properly gauge the speed of adjustment. Too fast and the straits will constrict so much in the short run that the economy will fall prey to one peril or the other before reaching reaping the benefits of adjustment. Too slow and the stagnation is prolonged. A number of events combined to make the Venezuelan adjustment a long and tricky one. Chief among these was the

continued decline in per capita oil revenues even after they had returned to pre-boom levels and the heightened volatility. Venezuelan fiscal accounts did adjust to each new contraction in revenues, but they did so with a lag. The lag meant that each contraction resulted in further accumulation of debt; a further narrowing of the straits.

Entry into the Straits was prompted by the deep recession of 1978-84 during which per capita non-oil GDP fell by a total of 20% in six years. At the same time, real per capita oil revenues in 1983 were less than half of their peak in 1981. The government did decrease expenditures, mainly by reducing both direct government investment and transfers to SOEs but also partly by reducing government consumption. Thus the deficit never spiraled out of control and was a relatively modest 1.6% of GDP in 1983. Nonetheless, the incredible decline in GDP meant that the deficits run during the adjustment grew relatively larger as the economy shrank. The debt to GDP ratio, having held stable near 40% since 1979, grew to 47% in 1983 and then leapt to 64% in 1984. To keep debt under control, the government devalued in 1984 and again in 1986 (in response to the dramatic fall in world oil prices that year) to temporarily boost the domestic value of its oil earnings, thus earning breathing room from debt at the cost of inflation.



**Figure 5:** Expenditures respond very little to revenues during the period of pre-boom calm. The boom introduces a closer relationship between the two, though there is little evidence of a marked difference in the response to expansions and contractions. In the post-boom period, expenditures do respond only partially to declines in revenues. This partial response is completed by an increase in revenues but raising new revenue takes more time and thus results in a greater accumulation of debt.

The fiscal authority was to face this same dilemma repeatedly for the next fifteen years. A decline in oil revenues would force a decline in spending and lead to slow growth. This would threaten to increase the debt to GDP ratio either through higher deficits or outright contraction of the economy. Contractions initiated by non-oil triggers would equally threaten an explosion of the debt ratio delivering the same dilemma. Should we devalue to steer clear of debt, knowing that this sets a course toward higher inflation?

Before considering whether the straits were well-navigated, it is worth asking whether the necessary adjustment in the face of declining fiscal revenues was swift or slow. To that end, we have estimated a two-variable VAR including total revenues and total expenditure (using that Cholesky ordering) on quarterly data. We have estimated the VAR separately for each era to get a sense of how the responsiveness of the government to revenues shocks has changed as a result of the oil boom. Finally, suspecting that expenditures are more easily and swiftly increased than they are decreased, we have allowed the response to depend on the sign of the change in revenues, hence we have two curves: one for the response of expenditures to an increase in revenues (expansion) and one for the response to a decline in revenues (contraction). Figure 5 shows the results.

We can see that in the pre-boom period, expenditures were pretty well insulated from revenues. Revenue declines were dealt with somewhat more energetically than revenue gains. During this period revenues were fairly stable in both trend and volatility around the trend so there was little reason to respond strongly to annual variation. During the oil boom, when shocks to revenues were immense, expenditures responded rapidly to changes. There is little evidence that stabilizations were delayed—the impulse response of expenditures to revenue declines mirrors the response to revenue growth. However, as we noted earlier, the *composition* does display significant hysteresis in that increases in investment are reversed more swiftly than increases in consumption. It is a different story in the post-boom era. Here expenditures declined more slowly and less completely than they increased. However, it would be premature to conclude that adjustment was incomplete. Adjustments to falling revenue during this period were partly solved on the revenue side by the introduction of new forms of taxation. For example, income taxes were revamped and collection improved following an IMF agreement in 1989, the VAT was introduced in 1994, and taxes are indexed to inflation starting in 1994.<sup>11</sup>

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<sup>11</sup> The administration of Jaime Lusinchi (1983-88) implemented a heterodox stabilization program that included strong cuts in government spending between 1984 and 1985, multi-tier exchange-rate system, import protection, stimulus to agriculture, extended producer and consumer subsidies and the external debt renegotiation. Although these measures stimulated growth from 1985 to 1988, the government could no longer support the subsidies and the high debt burden, particularly after the 1986 fall of oil prices. Carlos Andres Perez (1988-93) launched a neoliberal shock therapy program (*The Great Turn – El Gran Viraje*) with the support of the International Monetary Fund and the World Bank that pursued the reduction of the government's role in the economy through a large-scale privatization, a tax reform, a free-market orientation in economic activities, the correction of macroeconomic imbalances and fiscal deficits, the reform of the financial sector, the liberalization of prices, exchange rates and trade, the renegotiation of the external debt payments and subsidies for the poor. Its implementation, that faced strong political opposition and popular rejection, was incomplete, distorted and even interrupted during periods of unexpected oil price increases. A decentralization process that had been proposed years back and delayed by the traditional political parties (AD and COPEI) was legally approved in 1989, just after a big riot (El Caracazo) exploded as a reaction against those measures;

The bottom-right panel of figure 5 shows the results from a three variable VAR of oil revenues, non-oil revenues, and total expenditures (with that Cholesky ordering) estimated for the post-boom period. The swiftest adjustment to an adverse shock to oil revenues comes via a reduction in expenditures: 75% of the total adjustment of expenditures takes place within the first two years. Adjustment by non-oil revenues takes more time: only 30% of the full adjustment takes place within the first two years and the 75% mark is not surpassed until the 22 quarter. Increases in non-oil revenues and reduction in expenditures contribute almost identical amounts to the full adjustment over ten years, and the total adjustment is a respectable 0.85; statistically indistinguishable from 1.<sup>12</sup>

Nonetheless, while the adjustment is comprehensive and impressive, it is clear that nonzero delay results in transitory deficits making the central dilemma more acute with each contraction in revenues. In essence, even these moderate delays lead to a narrowing of the Straits, making successful adjustment less likely. Hence we can see that the continued decline in per capita oil revenues greatly complicated the adjustment process.<sup>13</sup>

## Conclusion

Our analysis suggests that government spending on public goods was effective fiscal stimulus in the post-boom era, but that use of such stimulus was constrained by continued high levels of inflation and debt. The length of the post-boom fiscal crisis is due in large part to two proximate causes: the exceptionally poor state in which the economy exited the period of higher oil prices and the continued decline of per capita oil revenues.

Taking as given the state of the economy in 1983 and the subsequent decline in oil revenues, Venezuelan fiscal policy coped reasonably well with the predicament. Expenditures were reined in and new sources of non-oil revenue were raised. When fiscal accounts could not adjust sufficiently swiftly, devaluation was used to buy time, albeit at the cost of increased inflation. The fault does not lie in the process of adjustment.

In 1978, on the eve of the second oil boom, per capita non-oil GDP grew at 1.1% and the year's inflation was 7.3%.<sup>14</sup> Comparing these figures to their pre-boom (1962-73)

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however, from a fiscal point of view, its impact will start to be felt since 1996. Rafael Caldera (1993-98) condemned the neoliberal program of the precedent administration and started by reversing some of the previous measures, but a huge financial crisis (1994-95) and the failures of heterodox measures implemented led to a new IMF agreement in 1996 (*The Agenda Venezuela*). Under this program, the social programs were given big publicity, but in practice, they, as well as privatization of public enterprises and the tax reform, were very similar to the neoliberal program of Carlos Andres Perez.

<sup>12</sup> Oil revenues here are measured in constant Bolívares so we have not separated out the effects of devaluation.

<sup>13</sup> Manzano (this volume) suggests that the decline in Venezuelan per capita oil production is not entirely due to the external factors contributing to the oil price boom of the 1970s but may also be fueled by Venezuela's pre-boom oil development and extraction strategy. Thus it is not clear that Venezuela could have escaped adjustment even had oil prices continued to evolve smoothly. How pronounced and difficult the adjustment process would have been without the initial volatility is an open question.

<sup>14</sup> Inflation figures throughout this chapter are punctual inflation—that is the change in price measured from year beginning to year end—rather than average annualized rate of inflation.

averages of 3.3% and 2.4% respectively makes it clear that at this point the economy was seriously overheated. Ball's (1994) estimate of sacrifice ratios suggests that among OECD countries, trimming each point of inflation requires the loss of between 1.8 and 3.3 percentage points of GDP. Studies using US data, including Mankiw (1991) and Cecchetti and Rich (1999) find values in a similar range.<sup>15</sup> Applying these values to the Venezuelan economy in 1978, a return to historical rates of inflation would have required a loss on the order of 9-15 percentage points of GDP.<sup>16</sup> As the gush of oil money slowed, the economy seemed to have entered this period in 1977-8 as evidenced by the decline in non-oil output growth and inflation. Whether such loss would manifest as a protracted period of slower growth or a swift outright contraction would depend on the speed with which the growth of credit was reversed. Given that most of the excess credit sprung from the oil boom, and given the swift reversal of the hike in oil revenues, it seems likely the lost output would have come as a rather sharp contraction. Indeed, the outright contraction of economy between 1979 and 1980 despite renewed oil-driven spending supports this hypothesis.

It was at this moment that the second oil shock brought a second enormous boost of oil revenues. Unfortunately, Instead of accepting a growth slowdown as the price of cooling off the overheated economy, thereby enabling the oil revenues to be put to productive use at a later time, the fiscal authority chose to once again dump the entire surplus into the economy as it was accrued. The evolution from 1978-1983 (see figure 1) shows the predictably lamentable effects.

A more detailed picture of how the first and second gluts of funds first damaged and then wrecked the economy at the sectoral level is a subject for another paper. One suspects that the story is familiar: the deluge of cheap credit frequently redirected labor and capital from truly productive activity to activity whose productivity was an illusion which held only so long as the spigot remained open.

While imprudent and optimistic, it is perhaps understandable that the initial boom was entirely concurrently invested. The political pressure to invest domestically must have been immense and the possible drawbacks probably seemed distant and theoretical. How could such manna from heaven be bad? But by 1978 the clear overheating of the economy should have been stark evidence that productivity growth could not keep pace with the growth in demand and that a different, measured approach was required. Perhaps the second oil boom simply came a few years too early, when the negative side-effects of keeping an open spigot were not yet fully evident. Another look at figure 1 suggests that by 1981 they surely would have been! Alas, the warning was ignored and the second batch of manna from heaven was simply shoveled onto the flames lit by the first.

This misuse left the economy in a crippled condition, facing a difficult adjustment process. The continued decline in oil revenues below their pre-boom levels presented the fiscal authority with a serious and repeated short-run dilemma: a choice between the Scylla of inflation and the Charybdis of debt. Post-boom fiscal policy did not make it through these fiscal Straits of Messina unscathed. Furthermore, fiscal accounts did

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<sup>15</sup> Cecchetti and Rich do caution that their point-estimates come with rather large standard errors and further caution that one model they estimated gave much larger estimates of the sacrifice ratio.

<sup>16</sup> It may be a stretch to apply these values to a developing economy, but recall the prior to the boom, the Venezuelan economy was extremely high performing, with consistently low inflation and stable growth.

continue to adjust to the repeated decline in oil revenues by raising new revenues and reigning in expenditures. As the saying goes, you sleep in the bed you make.

Fiscal policy has a mixed record during the period from 1962-1999. On the one hand, spending the entire amount of the boom concurrently was a clear mistake given the size of the boom relative to the economy and thus doubts about the ability of the economy to absorb it so quickly. The failure to smooth these revenues doubtless contributed to the dire position of the economy in 1983 and thus the difficulty of the subsequent adjustments process.

It may be conceded that the problem was exacerbated by the failure of these investments to produce significant productivity gains meant that as oil revenues, and thus government spending, receded to historic levels, there was little to take its place. This is a failure distinct from the macroeconomic fiscal decisions considered in this chapter. Nonetheless, given the deliberate strategy of investing in projects with lengthy gestation periods, it should have been obvious that increases in productivity and thus in aggregate supply and foreign exchange would lag behind the massive influxes of capital. To expect that such a massive windfall could be absorbed without temporary divergence of aggregate supply and demand; not to realize that, given the size of the windfall, these disparities could crash the economy: these were grave oversights. The failure to adopt an oil investment fund to smooth the absorption of the windfall is a serious policy mistake. Fiscal policy is responsible to a considerable degree for the dismal macro economic position of 1983.

From this point on, the fiscal authority seems to have responded reasonably to a string of exceptionally difficult challenges. As oil revenues continued to fall, new sources of revenue were raised, and expenditures were cut. Unfortunately, budget cuts are never as swift as increases and the lag between revenue fall and the adjustment of expenditures contributed to a mounting debt, narrowing the straits.

The initial reversal of the steady six-decade growth path was due to the excessive haste with which the windfall was spent, exacerbated by the inefficiency of the resulting industrialization. The prolonged nature of the crisis is due partly to the poor position with which the economy exited the boom years—for which fiscal policy is partly to blame—and partly to the prolonged decline in oil fiscal revenues.

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## Appendix A

The coefficients  $\alpha_{TY}$  and  $\alpha_{GY}$  are weighted averages of the output-elasticities of each of the components of net transfers (T) and government spending (G) respectively. Net taxes and government spending are each built from several components of the quarterly fiscal accounts data. Classification was made based on whether the expenditures were spent on the production of public or private goods. Data come from the Central Bank of Venezuela.

Net Taxes (T) =

- Non-oil Income Taxes [NOIT] (includes both corporate and household)
- + Value added Tax [VAT]
- + Customs [CUST]
- + Central Bank Profits [CBV]
- + Liquor, Cigarettes, and Gasoline taxes [LIQ, CIG, GAS]
- Transfers to Private Individuals [PRIV]
- Transfers to State Owned Enterprises [PE]

Government Spending (G) =

- Wages and salaries [SAL]
- + Purchases of Goods and Services [GS]
- + Government Investment [GI]
- + Transfers to State and Municipal Government [SM]
- + Transfers to Administrative Entities [AE]

## Appendix B

Construction of the output-elasticity for each component is as follows.

*Non-oil Income Taxes:*

Income tax withholding for a given year is based on an ex-ante estimate of annual income filed in December of the previous year. Revision based on shock occurs later, at least three months after the shock. Hence, except for new hires, income tax payments do not vary within the same quarter when income has been hit by a shock. Hence the output-elasticity of income tax revenues is equal to the output-elasticity of employment. (see Perotti 2004 Appendix B) Following Perotti, we have taken our estimate of  $\partial e_t / \partial y_t$  to be  $\hat{\beta}_0$  from the following regression.

$$e_t = \sum_{j=-1}^4 \beta_j y_{t-j}$$

Where  $e$  and  $y$  are logged values of employment and real output. This is estimated via the regression and found to be 0.22.

Firms usually adjust their tax payments for windfalls but individuals do not. We have assumed 0.2 across the entire category.



*Customs, Cigarettes, Liquor, VAT*

Estimate the elasticity by again taking  $\hat{\beta}_0$  from the following regression over the longest recent period during which tax rates are constant.

$$\tau_t = \sum_{j=-1}^4 \beta_j y_{t-j}$$

Where  $\tau$  are logged tax revenues.

Results are:

Tax Category	Period	$\varepsilon$
Cigarettes	1982-2006	1.0818
Customs	1992-2006	1.0815
Gasoline	1985-2006	-1.4753
Liquor	1985-2006	1.1345
VAT	1985-2006	0.9799

Not surprisingly, these are mostly very close to 1. Gasoline is more complex because the economy is driven by oil prices.

*Transfers to Administrative Entities and SOEs*

Completely discretionary so elasticity assumed equal to zero.

*Transfers to State and Municipal Governments*

Transfers to sub-national governments are a mandated percentage of revenues so the output elasticity of transfers is equal to the output-elasticity of revenues. This elasticity is estimated using a regression of the same form as that used for excise taxes. The point-estimate is 1.14.

*Other components of G*

The rest of the components of G seem to be completely discretionary and therefore have an output-elasticity of zero.

**CHAPTER 11:  
INSTITUTIONAL COLLAPSE:  
THE RISE AND DECLINE OF  
DEMOCRATIC GOVERNANCE  
IN VENEZUELA<sup>1</sup>**

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## **Abstract**

This study shows that the political institutions that established Venezuela's democracy in the sixties were deliberately set up to generate a cooperative equilibrium with low stakes of power. Constitutionally weak presidents and strong centralized political parties characterized this institutional framework. Cooperation induced a relatively effective policymaking process and good policy outcomes. However, an oil boom and its aftermath, in the seventies and eighties, unraveled the cooperative framework and induced rapid economic decay. The political reforms implemented in the late eighties to improve the democratic process further weakened the party system and induced a highly uncooperative and volatile policymaking process. The recent institutional transformation promoted by President Chávez, increased the stakes of power, stimulating a complete breakdown in cooperation and a highly polarized political system.

## I. INTRODUCTION

In the last quarter of a century, Venezuela has had the worst economic performance in Latin America, with the exception of Nicaragua. In contrast, in the previous thirty years, the country had a remarkable economic and social performance; and was considered a model democracy in the region. This chapter argues that *political economy* variables: the weakening of democratic governance, the poor and declining institutional quality, and the increase in political instability, are key determinants in explaining the poor economic performance in the period under study, in particular during the seventeen years since 1989. Even though the initial fall in growth -in the ten years after per-capita GDP peaked in 1978- can be mainly attributed to the dramatic reduction in per-capita oil income, the debt acquired during the oil boom, and the increasing volatility of oil prices (Hausmann and Rigobón, 2002; Manzano and Rigobón, 2001; Rodríguez and Sachs, 1999); institutional and political variables are crucial to explain why Venezuela has not been able to return to a sustainable growth trajectory in the last two decades.

We claim that the decline in institutions and democratic governance in the last two decades can be largely attributed to four factors: 1) *oil dependence*, which may induce poor institutional quality and creates significant challenges for governance;<sup>4</sup> 2) the dramatic *fall in per-capita oil fiscal revenues* in the late eighties and nineties, which contributed to the decline in the cooperative political equilibrium that prevailed in the 1958-1988 period; 3) *the political reforms* introduced in the late eighties and early nineties, which weakened and fragmented the party system, undermining political cooperation; and 4) the *institutional changes* implemented by President Chavez, which have dramatically increased the stakes of power, producing a complete breakdown in political cooperation.

The chapter mainly characterizes the effects that institutional reforms had over democratic governance, but it also incorporates the role of oil dependence and oil income decline, without which it is difficult to understand the extent of the decay in democratic governance and institutional quality. In turn, the paper argues that the decline in governance and the low quality of institutions in Venezuela has translated into low quality policymaking: i.e. high policy volatility, incapacity to sustain intertemporal commitments, difficulty in implementing sustainable policy reforms, and early reversal of reforms.

For example, Venezuela has been incapable of effectively implementing macroeconomic stabilization mechanisms and fiscal policies have been significantly pro-cyclical. This is particularly problematic for an oil dependent country, which requires strong institutions to manage the challenges arising from the *resource curse*. Other explanations for Venezuela's economic decline (inefficient specialization, macroeconomic volatility) are puzzled by the lack of a coherent economic policy response to the decline in oil income; this paper offers a possible institutional origin to explain such puzzle.

The fall in oil income of the eighties and nineties contributed to erode democratic governance by increasing redistribute conflicts, polarization, and the decline in support for political parties. The interaction between oil and institutions hampered the ability of politicians to change and sustain policies conducive to economic growth. The structural weakness of institutions (partly the result of oil dependence) and the implementation of institutional

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<sup>4</sup> The combination of oil dependence with poor institutional quality has particularly negative consequences for development (Sala-i-Martin and Subramanian, 2003).

reforms further weakened the quality of democratic governance, making it difficult to reestablish economic growth in the period 1989-2005. The deconsolidation of the political system produced political instability, reflected in three military coups, a significant change of the constitutional rules, and the collapse of traditional political parties. We coincide, with other authors in this volume, on the relative significance that oil has played on Venezuela's economic decline; our analysis attempts to complement them, by showing the impact of institutional changes in the policymaking process, and its importance in explaining why Venezuelan politicians were unable to adopt and sustain policies to resume growth.

The governance story of Venezuela is analyzed in three differentiated periods: 1) an initial period, 1958-1998, which began with a power sharing pact, creating an institutional framework with low stakes of power, characterized by a relatively high degree of political cooperation (1958-1988); 2) a second period, after the fall in oil revenues, in which significant political reforms (decentralization and electoral reform) were implemented, characterized by a decline in political cooperation (1989-1998); and 3) a third period (1999-present) in which constitutional rules were completely reshaped, producing a complete breakdown in cooperation.

The paper structure is as follows: Section II discusses the literature on oil, institutions, governance and growth and presents some relevant comparative measures of institutional quality; Section III analyzes the period of democratic consolidation under the *Punto Fijo Pact*; Section IV analyzes the effects of oil decline and political reforms in inducing democratic deconsolidation in the nineties; Section V analyzes the recent institutional reforms of the Chavez administration and its effects over democratic governance; finally Section VI offers some concluding comments, including a brief discussion of alternative explanations to the one presented here.

## **II. OIL, INSTITUTIONS, AND GOVERNANCE**

There is an extensive theoretical and empirical literature arguing that institutions and governance constitute key determinants of long run economic growth (Kauffman and Kray, 2003). However, there still exists some debate over the causality of the phenomena, with some authors proposing that it may run in the opposite direction.<sup>5</sup>

Following IDB (2005), this paper focuses on the role that political institutions have in delivering policies that have positive generic attributes, such as stability, adaptability, coherence, and sustainability; which are necessary conditions for long-run economic growth. Having what might be considered the normatively "right" policies, without these generic attributes is unlikely to yield good economic performance. The paper takes advantage of the analytical framework developed by Spiller and Tommasi (2003) to explore the conditions in which democratic governance generates long-term cooperation between political actors capable of sustaining intertemporal commitments. Institutional environments in which there

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<sup>5</sup> The channels by which good governance and high quality institutions translate into higher growth, which have been proposed by the literature, include: the protection of property rights and its effect over the incentives for investment and human capital accumulation, the capacity to resolve conflicts and maintain political stability when major policy changes are required, the perverse effect of institutions designed for extractive purposes, and the capacity of implementing stable and coherent policies.

are few key players, repeated interaction among them, and small discount rates, would tend to produce long-term political cooperation among the key players. First-best policies would tend to be stable across administrations and only change significantly in response to economic shocks. According such framework, cooperative policymaking processes would tend to produce policies with good features such as stability, coherence, and adaptability. By contrast, institutional settings that induces a larger number of players, few repeated interactions and high discount rates promotes a policy making environment that is less conducive to stable, adaptable and coherent policies (Spiller and Tommasi, 2003; IDB, 2005).

In addition, following Przeworski (1991), the paper evaluates how political institutions determine the “stakes of power,” i.e. the value that key political actors place on being in power as opposed to being in the opposition, and as result how institutions change and affect democratic governance. This point is particularly relevant in the case of oil dependent economies, especially during boom periods, in which the state receives a significant share of its fiscal revenues directly from the oil rents it controls, increasing the stakes of power. Democratic governance requires a limitation of the stakes of holding power; otherwise, political instability, polarization or authoritarianism can arise.

### ***Oil, Institutions, and Democratic Governance***

There exists also a growing empirical literature showing that oil (and mineral) dependence, as well as the external volatility that comes with it, have a negative impact on institutional quality and on democratic governance (Subramanian and Sala-i-Martin, 2003; Isham et al., 2003; Ross, 2001).<sup>6</sup> The proposed channels by which mineral dependence impacts institutions include: fiscal voracity (incentives to increase expenditures and patronage during the boom that are difficult to reverse during the bust), rent seeking (producing misallocation of resources), corruption, and inequality.

The causal mechanisms that produce the proposed negative effect of resource dependence on democratic governance are also still debated. Some hypotheses are: 1) the stakes of power are very high in oil-dependent societies, and control of the oil revenue generates a high value of holding onto power (i.e. increases the stakes of power); 2) oil dependence allows for low levels of non-oil taxation, which leads to a lack of accountability in the use of fiscal revenue and weakens the state’s administrative capacity; 3) oil rents can be spent on patronage, weakening the opposition and the rise of democratic pressures, 4) oil rents can be used for repression; 5) since the state controls most resources, civil society and private entrepreneurs are less autonomous from the government; and 6) oil rents generate a tendency toward high levels of corruption that undermines democratic institutions (Karl, 1997; Ross, 2001; Dunning, 2006).

In contrast, Dunning (2006) presents a theoretical model and empirical cross sectional results showing that, even though mineral revenues generally have an authoritarian effect; in fact, in

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<sup>6</sup> In fact, part of this literature goes a step further by claiming that the resource curse, the proposition that mineral dependence causes slower economic growth, actually works through the negative effect of resource dependence on institutional quality, which in turn hurts growth. As was the case with the institutions and growth literature, this literature has some critics, which argue that resource dependence (as opposed to abundance) is also endogenous to institutions and as result causality cannot be properly assessed. In addition, some authors argue that it is the interaction of resource dependence with low quality institutions, which causes poor growth performance. This literature has also highlighted that countries with strong institutions have been able to manage the resource booms minimizing the perverse economic effects of resource rents (e.g. Chile, Norway, and Botswana).

highly unequal societies, mineral revenues may contribute to democratic governance by reducing the pressures for non-oil income redistribution and therefore the potential for social conflict or elite obstruction/subversion of democracy. His model fits well with the literature on Venezuela's democracy, which has generally argued that oil revenues helped to establish democratic governance by easing political conflict, while the region was generally authoritarian (Rey, 1989; Karl, 1997). This paper concurs with Dunning in arguing that the dramatic decline in oil revenues has been a key determinant of the deconsolidation of the Venezuelan party system and the weakening of democratic governance; however it proposes that political institutions have a crucial role in lowering or increasing the negative effects of oil dependence over democratic governance.

### *Measuring Institutions and Governance*

Put simply, "good" governance involves the capacity to design and implement effective public policies, which are socially and institutionally legitimate, in a stable political environment. The institutional framework in place, in turn, significantly influences the quality of governance. The institutional framework encompasses the formal and informal rules that govern economic, political, and social behavior.<sup>7</sup> For example: the constitution, the laws, the property rights, as well as informal cultural practices.

The incentives generated by political institutions have a significant impact on the stability, legitimacy, and efficiency of democracy. Political institutions such as: regime type (e.g. presidential powers), electoral system (e.g. proportionality), party structure, budget procedures, federal structures, among others; are critical determinants of the degree of political cooperation, government commitment, policy stability, and effectiveness, i.e. key features of good governance (Haggard and McCubbins, 2001; Spiller and Tommasi, 2003).

There are significant difficulties in measuring institutions. In particular most of the recently developed measures of institutional quality are more precisely measures of the outcomes of institutions, including the quality of governance, rather than the root permanent features or constraints of the institutional framework. In addition, most measures are based on perceptions rather than objective variables. Here, the subjective measures of institutional quality developed by multilateral agencies such as the World Bank are shown as evidence that the political framework of Venezuela has been generating low quality governance and poor public policies, at least in the last decade.

The World Bank Institute (WBI) defines *governance* as "the exercise of authority through formal and informal traditions and institutions for the common good, thus encompassing: 1) the process of selecting, monitoring, and replacing governments; 2) the capacity to formulate and implement sound policies and deliver public services; and 3) the respect of citizens and the state for the institutions that govern economic and social interactions among them" (Kaufman, 2003, p.5). For measurement and analysis the WBI has translated these three dimensions into six concepts with their corresponding measure.<sup>8</sup>

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<sup>7</sup> Institutions have been generally analyzed as constraints or as equilibrium outcomes.

<sup>8</sup> 1) Voice and Accountability, includes indicators related to political participation and civil liberties. 2) Political Stability refers to indicators measuring the perception that a government might be overthrown and the relative prevalence of political violence and terrorism. 3) Government Effectiveness, covers indicators related to the quality of bureaucracy, political independence of the civil service, and credibility of the government's commitment to public policies (including the ability to pass legislation and stay in office). 4) Regulatory Quality refers to indicators of the quality of the public policies themselves (excessive regulation, unpredictability, etc). 5) Rule of Law, measures the extent to which agents have confidence and abide by the rules. The degree of

As can be seen in Figure 1, Venezuela fares extremely poorly in all of the WBI indexes.<sup>9</sup> In 2004, the country was well below the Latin American average in all six indicators and, except for *Voice and Accountability*, was ranked between the lowest 10th and the 16th percentile among all the countries in the world. In contrast, the Latin American average for the six indicators is generally between the 40th percentile and the world's median. Venezuela is among the last two countries in five indicators, and among the last three in the other. Using the average of the six indicators, Venezuela is also the last in the region. Moreover, Venezuela fares even worse if compared with the average of countries in the same level of income per-capita, which have percentile ranks of around 65th, this is particularly significant given that there is a very high correlation between income per-capita and governance indicators.

In particular is important to notice that Venezuela is in the 14th percentile in terms of *Political Stability* and second to last in Latin America. This represents a dramatic contrast with the 1958-1988 period when Venezuela was considered among the most stable democracies in the region. The percentile rank of Venezuela has declined in the last eight years (these indexes were first calculated in 1996). Compare the Venezuelan ratings (1996-2004) with the ones for countries such as Costa Rica (84%) or Uruguay (79.1%), which were along with Venezuela considered the most stable countries in the region in previous decades, and the new reality of Venezuela looks even more dramatic. Three military coups (two in 1992 and one in 2002), a major nation-wide riot in 1989, and a dramatic increase in the number and size of political protests, attest to the objective decline in political stability (Monaldi, 2003).

Other variables that have been shown to be good predictors of economic growth are *Rule of Law* and *Control of Corruption*. Venezuela fares very poorly in both, being second to last in the region with percentile ranks of 12.6% and 14.3% respectively. Similarly, in the *Perception of Corruption* index of Transparency International (2005) Venezuela is second to last in the region, only above Paraguay.<sup>10</sup> If one accepts these indicators as valid, the differences in institutional quality between Venezuela and the median in Latin America, would explain a large portion of the economic underperformance of Venezuela with respect to the regional median.

It is important to notice that although Venezuela's indicators have declined since the beginning of President Chavez administration in 1999, the levels of most indicators before Chavez (with the exception of *Voice and Accountability*) were also well below the regional average. This means that the low levels of democratic governance and institutional quality can only be partially attributed to Chavez. This is consistent with this paper argument that governance started to decline in the late eighties after the dramatic rise and decline in oil revenues.

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protection of property rights, judicial independence, and crime are some of the elements included. 6) Control of Corruption, measures perceptions of the prevalence of corruption (Kaufmann et al., 2003).

<sup>9</sup> Figures are shown in percentile rank, the highest scores being in the 100th percentile.

<sup>10</sup> According to this index, Venezuela does perform better than other oil rich countries such as Indonesia, Iraq and Nigeria but worse than other oil economies such as Rusia, Kazakhstan, Iran, Saudi Arabia, Kuwait and United Arab Emirates.



The Inter American Development Bank (IDB, 2005) developed a set of indexes to measure the generic qualities (features) of public policies in the region.<sup>11</sup> As can be seen in Figure 2, in these indexes, Venezuela fares also very poorly. In the *Index of Policy Stability* Venezuela is the last in the region.<sup>12</sup> As additional evidence of lack of stability, Venezuela has also one of the most volatile values for Lora's Index of Structural Reform. In addition, Venezuela has had one the poorest performances in the region in terms of the advancement of market reforms, being below the Latin American average during the period 1985-2002 (Villasmil et al., 2007).

As can be seen in Figure 5, there has been also a significant decline in Cabinet stability in the last two decades. In the 1958-1988 period cabinet members lasted an average of 2.13 years in their positions (in a five-year term). Equivalently, there were 2.3 ministers per Cabinet position per term. In contrast, from 1989 to 1993, ministers lasted only 1.4 years, increasing to 1.8 years from 1994-1999, and declining again to 1.3 years in the 1999-2004 period. That dramatic change in Cabinet stability reflects political instability and induces volatile policies (Monaldi et al., 2005).

In the *Index of Adaptability*, Venezuela is among the last three countries, reflecting the perception among policy experts that Venezuela does not adapt quickly to significant changes in economic conditions. In the case of the *Index of Policy Coordination and Coherence*, Venezuela is again in the last position of the region. Lack of coordination and coherence often also reflects lack of cooperation. In the *Index of Enforcement and Implementation* based on GCR and SCS questions Venezuela is again below the regional average.<sup>13</sup> Finally, in the *Efficiency Index*, Venezuela is again the last in the region, which is also the case for the Overall Policy Index. These low indicators for policy quality are consistent, under the Spiller and Tommasi (2003) and IDB (2005) frameworks, with low levels of political cooperation in Venezuela.

### **III. THE CONSOLIDATION OF DEMOCRATIC GOVERNANCE IN VENEZUELA: 1958-1988**

This section analyzes the institutional foundations of governance and the key characteristics of the policy making process during the period of democratic consolidation between 1958 and 1988. The transition to democracy in 1958-1961 was consolidated under a set of institutional arrangements based on a multiparty elite agreement called the Pact of *Punto Fijo*.<sup>14</sup> The pact

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<sup>11</sup> These indexes use also subjective measures from a variety of sources but mostly from two sources: the average, for all years available 1996-2005, of some combination of perception variables from the Global Competitiveness Report (GCR) and a State Capabilities Survey (SCS) of policy experts made by the IDB.

<sup>12</sup> This index aggregates different measures including the standard deviation of the detrended Fraser Index of Economic Freedom and a variety of GCR survey questions (IDB, 2005). Having stability does not mean that policies do not change, but that the changes respond mostly to changing economic conditions and not to political changes. Venezuela, in the period 1988-2005 had high policy volatility in most cases originating in political changes (elections, coups, impeachment of a president, regional elections). This instability reflects low levels of political cooperation among key political actors.

<sup>13</sup> This reflects the perceived levels of enforcement of taxes, minimum wage, and environmental legislation.

<sup>14</sup> The pact was agreed upon by the leaders of the three main political parties, Rómulo Betancourt of the social-democratic AD, Rafael Caldera of the Christian-democratic COPEI, and Jóvito Villalba of the center-left-nationalist URD. The contents of the pact included arrangements for power sharing, such as the distribution of Cabinet positions among competing parties, and the implementation of basic common social and economic policies regardless of the presidential and legislative electoral outcomes. In addition, the pact stipulated the need to create corporatist mechanisms that guaranteed that labor unions and business interests, through umbrella organizations such as CTV and Fedecamaras, respectively, would be consulted and incorporated into the

had an enduring impact on the type of presidential system adopted by the 1961 Constitution, which was aimed at limiting presidential powers, diminishing political polarization, restricting electoral competition, and creating political institutions that would foster consensus for conflict resolution (Rey, 1972). The learning experience from the breakdown of Venezuela's democracy in 1948 allowed political parties to understand the importance of designing institutions to limit the stakes of holding power (Rey, 1989). The rules, reflected formally in the 1961 Constitution, were basically aimed at creating trust among the different political actors so that even in the case of a unified government in which a political party had control of both the presidency and Congress, formal political institutions would not allow governments to pursue one-sided policies based on this dominant position.<sup>15</sup>

Several specific features of Venezuela's presidential system helped to lower the stakes of power and to induce cooperative behavior among competing politicians. Some key institutional features strengthened parties over presidents: 1) a constitutionally weak presidency, with limited legislative prerogatives;<sup>16</sup> 2) the ban on immediate presidential re-election, forcing incumbents to wait ten years before being able to run for reelection;<sup>17</sup> 3) the absence of term limits for legislators, allowing long-term careers for party leaders in Congress; 4) setting fully concurrent elections between presidents and the Legislature inducing cooperation between presidents and their partisan ranks and reducing party

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policymaking process. The Catholic Church also supported the pact by signing an ecclesiastic agreement with the State in which it committed itself to help moderate conflicts and was guaranteed public financing. According to Penfold (2001), political leaders explicitly crafted the pact as an institutional arrangement to modify the payoff structure of the game to induce cooperation (Karl, 1986; Corrales, 2003; Monaldi et al., 2005).

<sup>15</sup> The nature and consequences of the two democratic constitutional moments, of 1947 and 1961, reveal the different correlation of forces that prevailed, and the learning process that occurred between them (Corrales, 2003). In 1947, the AD took advantage of its overwhelming popular majority to call for an elected Constitutional Assembly. It received 78 percent of the vote and 86 percent of the seats and used its absolute dominance to impose a constitution very close to its preferences, alienating many relevant actors. But by 1958, AD's dominance had declined. Betancourt (AD) won the presidency, but this time the party received 49.5 percent of the votes and 55 percent of the seats in Congress (chamber of deputies). Based on the spirit of pact making, the 1961 Constitution was crafted by a special congressional committee co-chaired by Raul Leoni (AD) and Rafael Caldera (COPEI). Party leaders decided that regardless of the electoral outcome of the congressional elections, the committee would be balanced. It included eight representatives from the AD (36.4 percent), four from the COPEI, four from the URD, three from the Communist Party (PCV) and three independents (Kornblith, 1991). AD leaders agreed that the composition of the constitutional committee would over-represent the opposition. As Corrales (2003) has recently argued, the result of this decision was "a constitution designed to prevent single party hegemony."

<sup>16</sup> The literature classifies the constitutional powers into legislative powers (law-making authority, reactive and proactive) and non-legislative powers (power to appoint and remove Cabinet and other officials) (Shugart and Carey, 1992; Payne et al., 2002). Under the Constitution of 1961 (derogated in 1999), the Venezuelan president had very limited legislative powers, especially if compared with the Latin American region (which in average had stronger powers than the other presidential systems in the world). Venezuela had the lowest value in the index of legislative powers developed by Shugart and Carey (1992). This index is calculated using the simple addition of a point value ranging from zero (low) to four (high) assigned in six categories of legislative power. The Venezuelan president had the weakest level of power of any Latin American country in all six categories (zero points in all). The Latin American regional point average in the period 1958-1988 was 4.6. The South American average excluding Venezuela was 5.4 points. In Latin America, only Peru (before Fujimori) had a president with as limited legislative powers as Venezuela's (Monaldi et al., 2005).

<sup>17</sup> Until 1999, Venezuelan presidents had non-immediate re-election (could run again only when two presidential periods had elapsed, after the end of their presidency). Coppedge (1994) gives a prominent role to this institutional feature. He argues that it made all presidents "lame ducks," at the same time promoting party factionalism by maintaining former presidents as powerful actors that could eventually become presidents a second time (as did Caldera 1969-1974 and 1994-1999; and Pérez 1974-1979 and 1989-1993). The lack of immediate presidential re-election combined with the absence of term limits for legislators provided an advantage for party leaders (Monaldi et al., 2005).

fragmentation;<sup>18</sup> 5) and establishing a proportional representation system to elect the Legislature.<sup>19</sup> All of these rules, along with the existence of centralized and disciplined political parties, such as AD and COPEI, helped consolidate Venezuela's party system throughout the 1960s and 1970s.<sup>20</sup> The existence of centralized and disciplined political parties was to a large extent the direct result of a proportional electoral system with closed lists.<sup>21</sup> This system granted party leaders extreme powers to control and discipline their party ranks. These features of Venezuela's democracy led some authors to typify it as a *partyarchy*, given that party leaders had supreme command over all party and public affairs (Coppedge, 1994).

Finally, the Constitution limited electoral competition by temporarily restricting the direct election of governors and mayors. The objective of limiting Venezuela's federalism—provisionally, since the 1961 Constitution established that a law (enacted by two-thirds of Congress) could activate Venezuela's federalism, as later occurred in 1989—was to reduce electoral competition by restricting the number of arenas open to contestation. The dominant political parties believed that increasing electoral competition at a moment of democratic transition would intensify political polarization and fragmentation, and reduce cooperation among political actors (Penfold, 2001).

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<sup>18</sup> Presidents were elected by plurality for five-year terms in direct elections concurrent with the legislative elections (for all seats). Until 1993, the voter had just one ballot (*tarjetón*) to vote for both the president and the Legislature. One card with the color and symbol of the party (and since the 1970s the photo of the presidential candidate) had to be marked to vote for the president, and next to it a smaller identical card had to be marked to vote for both chambers of the Legislature. Voters could not split their vote between chambers. The combination of plurality (as opposed to runoff) with concurrency, and the structure of the ballot maximized presidential coattails. The presidential election – due to its winner-takes-all nature – tends to produce a strategically concentrated vote, and combined with high coattails, produces high party concentration. An additional element promoting concentration was the inexistence of regional elections. The evidence seems to point to the significance of coattails and vote concentration. The difference between the vote for the top two presidential candidates and the vote for their parties (in the period 1958-1988) was always below 10 percentage points, with the exception of the 1988 election, when dissatisfaction with the AD and COPEI started to increase (Monaldi et al., 2005).

<sup>19</sup> This feature guaranteed that minority parties would gain access to seats in Congress. Between 1958 and 1988, legislative elections were done using a pure proportional representation (PR) system with single closed and blocked lists, applying the D'Hondt electoral formula. There were 23 districts equivalent to the states. The average district magnitude was 6.1, which was medium sized compared to the Latin American region. Five countries in the region have larger average district magnitude and 10 countries have lower average district magnitude (Payne et al., 2002). To make it even more proportional, some additional deputies were allocated to reflect the national party share of the vote (up to a maximum of five). The ballot was structured so that there was only one vote for all legislative bodies (Monaldi et al., 2005).

<sup>20</sup> Presidents enjoyed relatively high partisan powers in this period. They never faced a majority opposition and had very strong disciplined parties backing them. Between 1958 and 1988, three of the six presidents (50 percent) had a partisan majority in the lower house. Four out of six (67 percent) had majorities in coalition with other parties. In contrast, of the four administrations in the second period (1988-2003), none had a single party majority in the lower house, and only one (25 percent) –Chávez 2000-2005- has had a majority in coalition with other parties. The Latin American regional average, for the period 1978-2002, was 30.2 percent (of time the presidential administration had a presidential party majority in the lower house) and 54.1 percent (majority coalition) (Monaldi et al., 2005).

<sup>21</sup> The single closed and blocked list electoral system constituted a powerful disciplinarian tool in the hands of the party leadership. The Venezuelan system allowed the party leadership to control the nominations (who gets in the list) and the order of election (who gets elected first), pool the votes of party candidates (no intra-party rivalry), and limit internal competition. Shugart and Carey's (1992) index of party leadership strength due to the electoral system gives Venezuela a value of 8, above the regional average of 6. Only three countries in the region have a higher index (Monaldi et al., 2005).

As different authors have noted, although the features limiting competition in the 1961 Constitution contributed to the consolidation of democracy in the short-term, they proved in the medium and long run to have negative consequences from both the political and social points of view (Karl, 1986; De la Cruz, 1998).<sup>22</sup> By limiting political competition, the Pact of *Punto Fijo* and the Constitution planted the roots of a democracy characterized by its centralization and exclusion. It was only in the 1990s that Venezuela's federalism was activated, contributing to the decline of the traditional party structure (Penfold, 2001).

In addition to institutional design, party leaders used the distribution of oil fiscal resources as a key element for inducing political cooperation. Various authors have discussed the relationship between oil revenue and its effect on the party system (Karl, 1986; Rey, 1989; Penfold, 2001; Monaldi, 2003; Dunnig, 2006). For example, Karl (1986) argued that oil was the key economic factor helping to create the modern social conditions for the formation of a cohesive party system, and helping explain the continued support for the pact that solidified the democratic transition. According to this argument, without oil there would have been little chance for democracy in Venezuela at the time. Other works have given relatively less importance to oil revenue, emphasizing the institutional aspects of Venezuela's democratic process (Rey, 1989). Oil revenue alone can not explain the origin of institutional arrangements such as the *Punto Fijo* pact. Instead, political leaders strategically used oil income distribution as a utilitarian mechanism to obtain support for the democratic system. According to both viewpoints, it should not be a surprise that the decline of the *Punto Fijo* party system coincided with a general decline in oil fiscal income during the 1980s and 1990s (Penfold, 2001; Monaldi, 2003).

### ***Policymaking Process in the Punto Fijo Democracy***

The first period can be generally characterized as having conditions highly conducive to political cooperation: a small number of key political actors, repeated play, and low stakes of power (Spiller and Tommasi, 2003). These characteristics were largely the direct result of the institutional framework set up by the Pact of *Punto Fijo* and the 1961 Constitution.

The policymaking process included relatively few key players, primarily: the president, the national leaders of the two major parties (the AD and COPEI), and the leaders of the two peak corporatist interest groups (the CTV and Fedecamaras). The existence of a highly centralized, disciplined, and non-fragmented party system, and the fact that the concerns of interest groups were channeled through corporatist arrangements with the peak labor and business associations, allowed the president to conduct policy consultation with a very limited number of actors.<sup>23</sup> Policy agreements were usually negotiated between the presidents, the national

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<sup>22</sup> The *Punto Fijo* pact was also designed as a means of excluding certain political actors, such as the Communist Party (PCV), from having a significant role in policymaking. The pact signatories believed it was necessary to exclude the communists in order to provide the United States and the private sector with sufficient guarantees that Venezuela was clearly aligned with a capitalist system in the context of the Cold War. This situation induced the PCV, as well as the more radical members of AD, to form a guerilla movement, which was significant during the 1960s and came to an end in the early 1970s, with the pacification process and the re-entry of the left into the electoral arena. During Betancourt's presidency, in addition to the leftist guerrillas, the emerging democracy also faced two military coup attempts, one presidential assassination attempt, and other less significant attacks. These threats to democracy helped to strengthen the cooperation between the participants in the pact. Once the external threat vanished in the early 1970s, deviations from cooperation were more common (Monaldi et al., 2005).

<sup>23</sup> In terms of the participation of interest groups in the policymaking process, very few democracies in the region had so few (and stable) players participating. In Venezuela, there existed single peak dominant associations of labor and business, which were incorporated formally into the policy process. According to Crisp

party leaders (the *cogollos* in Venezuelan popular jargon) and the peak corporatist groups, and then, if required, they were *rubber-stamped* into law by the disciplined party delegations in the legislature.<sup>24</sup>

The six presidential administrations in this 30-year period were represented by only two parties: AD (four times) and COPEI (two times). The same parties generally controlled the leadership of Congress. With a few exceptions, the two parties controlled or heavily influenced the leading corporatist groups. Parties were typically governed by a president, a secretary general, and a national committee. Party leaders were very stable. In AD, six fundamental leaders, four of whom became presidents, led the party from 1958-1988. In the COPEI, three fundamental leaders, two of whom became presidents, led the party. National party leaders had relatively long tenures and almost all were members of Congress with long legislative careers. National party leaders decided how the party voted in Congress and the congressional delegation dutifully voted according to the party line. Similarly, national party leaders had significant control over congressional nominations.

Inter-temporal linkages among key political actors were strong. It was a repeated game with stable actors. It was very costly for an individual politician to deviate from the cooperative equilibrium of the two-party rule.<sup>25</sup> As can be seen in Figure 3, the party system had relatively low fragmentation compared to the deconsolidation period of the nineties. Fragmentation was also low by regional standards.<sup>26</sup> In addition, in this period, as can be seen in Figure 4, the volatility of the party share of seats (and votes) was also relatively low and declining, particularly if compared the period of deconsolidation. Similarly, volatility was below the regional average.<sup>27</sup> The rate of turnover of legislators also tended to decline over this period, and was on average below the regional mean (Monaldi, et al. 2005).<sup>28</sup>

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(2000), only Chile and Mexico had similar single peak associations, and only in Mexico were they formally incorporated as often as in Venezuela.

<sup>24</sup> Party discipline was extremely high in this period. Virtually all votes were counted with raised hands; since perfect discipline was assumed (roll calls were almost never used). In the few instances in which a party member did not want to follow the party line, his alternate member replaced him and voted according to the party line.

<sup>25</sup> Minority parties such as the MAS did not have a major policymaking role but were guaranteed access to small prerogatives in order to keep them “inside” the system (e.g., large autonomous budgets for universities and cultural projects controlled by the left) (Monaldi et al., 2005).

<sup>26</sup> In the first elections of 1958, the effective number of parties (ENP) represented in the chamber of deputies was 2.57. In the next two elections the ENP rose significantly (to an average 4.56), mostly due to two significant splits in the AD (the largest party). However, the system consolidated again into a two-party system in the next four elections from 1973 to 1988. The ENP in that period was on average 2.65. In the elections of 1983, the ENP got to a low point of 2.42. In this period, Venezuela’s party fragmentation was slightly below the Latin American average. The Latin American regional ENP average was 2.84, while the Venezuelan average was 2.63 (Monaldi et al. 2005). For the years for which we have comparative data: 1978-1989. Regional averages were calculated using data by Payne et al. (2002).

<sup>27</sup> In the Chamber of Deputies the Volatility Index, measuring the change in party share, was 18.9 percent in the period 1958-1988, below the Latin American average of 22.1 percent. Moreover, volatility tended to decline until 1988 (to 13.8 percent). The average volatility increased dramatically in the period 1989-2000 to an average of 38.1 percent, compared to a regional average of 23 percent. Volatility in the presidential vote was even lower in the Punto Fijo period (13.9 percent), almost half the regional average of 23.9 percent. It increased dramatically afterwards (52 percent) compared to a regional average of 28 percent. After 1989, Venezuela has had the largest presidential vote volatility in the region (Monaldi et al., 2005).

<sup>28</sup> The percentage of new legislators (turnover) tended to decline in the first period. In the first three terms from 1963-1973, it was on average 71 percent, whereas in 1963-1973 it declined significantly to 55 percent as the two-party system consolidated. In the second period, the percentage of new legislators rises again to an average of 78 percent (82 percent in the current legislature). Compared to other presidential countries for which there is data for turnover, the figure for the first period (63 percent) is not extremely high. In Argentina about 80 percent of the legislators are not re-elected. In Brazil the figure is 57 percent, in Ecuador 73 percent, in Chile 41 percent

Even though in equilibrium the Venezuelan president seemed powerful, having the leading policy role, his powers were in fact significantly restricted by the 1961 Constitution. The framers, who were the leaders of the parties, set those restrictions deliberately to limit potential deviations. To a large extent, the behavioral appearance of power was the result of the partial delegation by the national party leaders of strong and disciplined parties in a cooperative environment. As will be explained below, in the 1990s, once the president's partisan powers (strong party backing) and other formal (appointment of governors) and informal powers (discretionary use of large oil rents) declined, the president began to look relatively weak. Eventually, the 1999 Constitution increased the presidential powers dramatically, changing the policymaking process and increasing the stakes of power.

The low-stakes institutional framework developed by the *Pact of Punto Fijo* allowed the country to avoid the authoritarian fate of most other oil exporters by inducing cooperation among politicians. Oil income was distributed to key political actors regardless of who was in control of the presidency. In addition, rising oil income allowed for increasing spending on public goods that promoted growth and reduced the redistributive pressures that generated the breakdown of other democracies in the region.

#### **IV. The Deconsolidation of the Venezuelan Political System, 1989-1998**

This section analyzes the political reforms implemented in the late eighties and early nineties and the impact they had over policymaking. In contrast to the previous period, this period was characterized by multiple actors, high electoral volatility, and institutional instability.

The dramatic economic decline suffered by the country during the previous decade, largely attributable to oil income decline, set the stage for an increase in redistributive conflicts and a realignment of electoral preferences away from traditional parties. The riots of 1989, the two military coups of 1992, and the dramatic rise in social and political protests are symptomatic of the context in which political reforms were implemented.

The most significant institutional changes that occurred at the beginning of this period were: a) The introduction of direct elections for governors and mayors in 1989;<sup>29</sup> and b) The modification of the legislature's electoral system from pure proportional representation to a mixed-member system with personalized proportional representation.<sup>30</sup> As will be argued, these changes helped to significantly weaken the power of traditional parties and national party leaders. Also, in the context of a change in electoral preferences, away from traditional parties, these institutional transformations contributed to increased party fragmentation, volatility, and legislator turnover.

##### ***On the Origins of Political Reforms***

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and in the U.S. 17 percent. In contrast, in the second period, turnover reached Argentinean levels (78 percent) (Monaldi et al., 2005).

<sup>29</sup> For three-year terms, with one immediate re-election.

<sup>30</sup> Overall, the electoral system continued being globally proportional, however portion of the legislators began to be elected by plurality, establishing a personal electoral connection, and increasing the system's disproportionality (Monaldi et al., 2005).

The continued economic decay generated significant political disenchantment and a decline in the satisfaction with democracy. In the eighties, several social actors, minority parties, intellectuals, business groups, and NGOs demanded to deepen democratization as a means of increasing accountability and improving government performance. These demands were a natural reaction to a regime in which political parties had pervasively controlled most spheres of social life.<sup>31</sup>

President Lusinchi (1984-1989) recognized the need to introduce a series of institutional reforms to help solve Venezuela's political accountability problems. He created a Presidential Commission for the Reform of the State (COPRE) consisting of professionals linked to the political parties as well as a group of non-partisan academics. The COPRE proposed a significant set of political reforms, including the direct election of governors and mayors, electoral reform to elect a portion of the legislators by plurality, and the democratization of party structures. These propositions met with immediate resistance from AD (the president's party), which had an absolute majority in the legislature. It thought that the COPRE recommendations were too radical.<sup>32</sup> AD was not willing to withdraw its control over the patronage network that regional and local bureaucracies offered the party. AD's national party leaders perceived the COPRE propositions to be directly aimed at undermining their political power. As a result, the reforms were not even discussed in Congress (Penfold, 2001, 2004a and 2004b).

It was only during the 1988 presidential campaign that AD's national party leaders were forced to pass some of these reforms due to the attention that the candidates Eduardo Fernández of COPEI and Carlos Andrés Pérez of AD paid to these issues. Pérez had won the party nomination against the fierce opposition of AD's national party leaders, and he wanted to weaken their centralized control of the party. Fernández used the reforms as a campaign tool against AD, which had been publicly opposed to any opening of the political process, possibly expecting that AD would continue blocking the reforms. Pérez's campaign in favor of the reforms forced AD to approve some of them in Congress: the election of mayors and the electoral reform to be implemented in 1993. But the election of governors, which AD feared the most, did not pass (Penfold, 2004a).

Eventually, AD was prompted to support the election of governors as a consequence of massive riots that occurred one month after Pérez's inauguration. The outburst took place in eight major cities and began as spontaneous protests against an increase in public transportation fares, which were brought about by a hike in the price of gasoline (Rodríguez, 1996). The country was left in absolute despair after this social commotion. Although most of the blame was placed on Pérez's adjustment program, politicians realized that citizens had increasingly become alienated from the democratic regime and this was violently expressed in the streets (Penfold, 2001 and 2004a).

### ***The Activation of Federalism***

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<sup>31</sup> As explained, national party leaders had a monopoly on the nominations of candidates to the national Legislature as well as to the state and municipal assemblies; they appointed judges according to party loyalty; and they exercised strong discipline over their members (Coppedge, 1994). More importantly, until 1989, regional and local politics had been absent. Presidents had the right to appoint governors and the mayoral position did not previously exist. Governorships were assigned to members of the political party in power and were used as instruments to foster patronage (Penfold, 2004a and 2004b; Monaldi et al., 2005).

<sup>32</sup> Gonzalo Barrios, AD's president, publicly rejected the reforms, particularly the direct election of governors, "because the country is not historically prepared for this type of reform." (Penfold, 2004a)

Although Venezuela was formally federal for more than a century, it was only in 1989, after the initiation of the direct elections of governors and mayors, that the dormant federal system was activated. There are two key institutional elements of Venezuela's federalism that transformed its party politics: the increasing competition and higher number of electoral arenas at the sub-national level, and the possibility of re-election for governors and mayors, as well as the non-concurrency between regional and presidential elections. These institutional features provided new regional political actors with an opportunity to gain independence vis-à-vis the national authorities.

During the 1958-1988 period entry barriers were relatively high since presidential and congressional elections were held concurrently, maximizing presidential coattails. Moreover, entry into Congress was decided by national party leaders, who had control over the nominations. Instead, with the introduction of the direct election of governors and mayors, traditional political parties characterized by hierarchical and inflexible organizations had to present individual candidates in more than 20 states and more than 300 municipalities. This meant that party leaders had to gradually loosen centralized control over the nomination of candidates in order to effectively compete in these contests. Increasing the number of electoral arenas also implied reducing the entry barriers to competition. Minority parties attempting to win elections at the national level could now compete more effectively at the regional and local levels. These parties could build their organization at the national level based on their success at the regional level.

During this period, several new political parties, such as La Causa R, Proyecto Venezuela, Convergencia-LAPI, Patria para Todos, and Primero Justicia used federalism as a springboard to enter into the political system and build a national party organization. In the first election for governors in 1989, AD and COPEI largely dominated the electoral market (90 percent of the governorships). However, during the following elections their dominance waned as new political organizations emerged and decentralized parties such as MAS obtained significant power for the first time. By 1998, AD dominated only 34.7 percent of the governorships, COPEI 21.7 percent, MAS 13 percent, MVR 17.7 percent and regional parties 12.9 percent (Penfold, 2004a and 2004b; Monaldi et al., 2005).<sup>33</sup>

The multiplication of electoral arenas not only provided an incentive for some political parties to pursue an electoral strategy aligned with regional interests, it also forced national parties to use alliances with other political organizations to compete effectively in these different arenas. National political parties became increasingly dependent on party alliances between 1989 and 1998.<sup>34</sup> One important consequence of the emergence of these alliances is that

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<sup>33</sup> One illustrative example of how political careers were built in this period is the rise of Andrés Velásquez and his party, Causa R, which had been a marginal party in the previous period. He was able to build the party starting with his victory as governor of the state of Bolívar in 1989. His effective performance allowed Velásquez to compete in the presidential elections of 1993 and receive 22 percent of the vote. Causa R continued its success by later winning the mayoralty of Caracas in 1992 and the governorship of Zulia in 1996. Another example is Henrique Salas Römer, the governor of Carabobo, Venezuela's largest industrial state: He first won the governorship with the support of the COPEI in 1989. He later abandoned the party due to internal disputes with its national leadership and created a regional party in 1995 called Proyecto Carabobo, which was later relabeled Proyecto Venezuela when he decided to run for the presidency in 1998. Primero Justicia entered the political scene by winning in the well-off municipalities of eastern Caracas (Penfold, 2004a and 2004b).

<sup>34</sup> AD established alliances with an average of 2.2 parties in the regions where it was able to win in the 1989 gubernatorial elections (and won 55 percent of the total). By the year 2000, AD had to establish alliances with an average of 6 parties to win just 12.5 percent of the governorships. However, AD's reliance on these alliances, in terms of the average percentage of votes that these parties added to their candidates, was relatively low. In contrast, COPEI was very dependent on these alliances to win. The average percentage of votes contributed by



incumbent governors could shift partners more easily to assure re-election. As the importance of the alliances increased, the independence of incumbent governors also increased, allowing them to break with the party that initially supported them or to negotiate in more favorable terms with national party leaders (Penfold, 2004a and 2004b).

The immediate re-election of governors and mayors in contests that were organized separately from national elections also increased the independence of these political actors. Governors and mayors running for re-election had greater opportunity to distance themselves from national party leaders and even disassociate themselves from the party structure. The fact that their re-election depended to a great extent on their performance—and not on coattails from presidential candidates backed by centralized parties—created incentives for governors to behave more independently. In fact, governors quickly used their fiscal and administrative resources to control and expand existing local party machinery (Penfold, 2004a and 2004b).<sup>35</sup>

In sum, the introduction of re-election for governors and mayors and the fact that they were elected on a separate basis from their national counterparts created incentives for these new political actors to gain independence and challenge their party bosses. The federalization of Venezuelan politics also implied that these governors, in the context of a decaying party system and the deepening of the decentralization process, could build their own political organizations to support their careers. The re-election rule also fostered internal conflicts between party authorities at the national level and new party leaders at the regional and local levels. These tensions remained unresolved and on occasion forced regional players to separate themselves from their parties. In this sense, federalism enacted a dual dynamic: the formation of new regional political parties and the split-off from hierarchical political parties such as the AD, COPEI and MVR (Penfold, 2004a and 2004b).<sup>36</sup>

In addition, the new mixed electoral system diminished the presidential coattails -promoting fragmentation- and weakened the party discipline. An increasing proportion of legislators began to be elected by plurality instead of proportional representation. Moreover, the previous ballot system that maximized the connection between the presidential vote and a single party vote for all legislative positions was changed for a one with separate votes including some personalized votes to elect the legislators (Monaldi et al., 2005).

### ***Policymaking in a Deconsolidating Political System***

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other parties supporting the COPEI's gubernatorial candidates increased from 7.1 percent in 1989 to 40.3 percent in 2000 (Penfold, 2004a and 2004b; Monaldi et al., 2005).

<sup>35</sup> During the 1992 gubernatorial contests, 18 incumbents ran for re-election and eight managed to win. In 1995, only three governors could run as incumbents and two of them were re-elected. In 1998, 17 incumbents out of 21 governors were re-elected. In 2000, 15 governors were up for re-election and five of them obtained it. Intra-party politics in this period revolved around the conflict between the new regional leaders and the old party leadership. In 1993, regional leaders were able to win the presidential nominations in the AD (Claudio Fermín, mayor of Caracas) and the COPEI (Oswaldo Alvarez Paz, governor of Zulia), in confrontation with the traditional leadership. Again in 1998, Irene Saéz, the independent mayor of Chacao, won the COPEI's nomination (Penfold, 2004a and 2004b; Monaldi et al., 2005).

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In general, the policymaking process in this period was characterized by several prominent factors. First, it was characterized by the existence of many and volatile key players.<sup>37</sup> Second, the Legislature and the Judiciary became relatively more relevant policy arenas, as a result of the declining role of parties and the weakening of presidents. The legislative agenda began to be influenced and negotiated with regional authorities who were also increasingly able to influence the legislators' careers. Finally, in this period there was a decline in influence of corporatist groups and an increased political role of the military.

The transformation of the policymaking process, along with the multiplication of relevant policy actors at the national and regional levels, implied that transaction costs increased substantially, making it more difficult for political players to credibly commit. Unlike the first period, in which political exchanges were conducted at low transaction costs in small groups, in this period transactions were negotiated among a larger number of players in more open and conflictive arenas. Paradoxically, as a result of the decline of party elite agreements, the legislature played a much more significant role. National party leaders could not easily broker deals outside of Congress, as was done before.<sup>38</sup>

Between 1989 and 1998, legislators became less disciplined and more specialized.<sup>39</sup> Factions within parties and individual representatives were able to undermine the power of party barons on specific policy issues. Key legislation approved at the national level (either by Congress or by executive decree), had to be negotiated with regional actors. Proponents of legislation had to introduce regional considerations to gain the support of governors and mayors. For example, legislators were able to push reforms to deepen fiscal transfers to the regions despite the opposition from national party authorities and the national executive. Regional leaders have powerful incentives to extract more resources from the center, especially since Venezuela has the largest vertical fiscal imbalance in Latin America and the rules of the distribution of fiscal resources have become more discretionary. The indiscipline of legislators was not only expressed in the increasing independence on policy issues vis-à-vis the party leader, but also by splitting off from the parties that had nominated them. Factions within consolidated political parties such as the AD, COPEI, and MAS split-off, creating their own independent legislative groups.

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<sup>37</sup> The effective number of parties (ENP) in the chamber of deputies increased dramatically. In the previous period of two-party dominance (1973-1988), the ENP was on average just 2.6. As shown in Figure 3, it surged to 4.7 in 1993, and in 1998 it rose again to a maximum 6.1. The average ENP of the second period (4.74) is significantly higher than the regional average in the period (3.5). Venezuela went from being one of the least fragmented party systems to the third most fragmented in Latin America. Volatility has also dramatically increased in the second period. In terms of lower chamber seats, the average volatility in 1990-2000 was 38.12 percent, way above the Latin American average of 23 percent. Venezuela again moved from being one of the least volatile countries in the region to the second most volatile. Compared to the first period, average volatility more than doubled (see Figure 4). In terms of volatility in presidential party vote, the increase is even more dramatic. It reached 52.8 percent and 59.5 percent in the 1993 and 1998 elections, respectively. On average, Venezuela has had the highest volatility in presidential voting in the region in the last 10 years. In terms of fragmentation and volatility, Venezuela became increasingly similar to countries such as Ecuador and Peru (Monaldi et al., 2005).

<sup>38</sup> While in the first period legislators initiated on average just 13 percent of all the laws approved, in the second period the figure doubled to 26 percent. In the case of ordinary laws, the change was also dramatic, increasing from an average of 34 percent in the first period to 62 percent in the second (Monaldi et al., 2005).

<sup>39</sup> Paravisini (1998) and Crisp (2001) found some evidence of the increased specialization of legislators—in issues relevant to their constituents – as a result of the closer electoral connection provided by the election in plurality districts of a significant proportion of the Legislature.

Institutional instability created weaker inter-temporal linkages among politicians and policy-makers. These linkages were also debilitated by continuous changes in the institutional rules as well as by the increased political uncertainty due to the risk of breakdown of the democratic regime. The rules of the political game have been in permanent flux since 1989. After decades without significant modifications, electoral rules were changed three times, considerably modifying the incentives of political actors; in fact, different versions of a mixed electoral system were used for the legislative elections of 1993, 1998, 2000 and 2005 (and the Constitutional Assembly of 1999).

The electoral reforms contributed to the erosion of the strict control that party leaders exercised over nomination procedures. This in turn weakened party discipline in the Legislature. In addition, the lack of a stable electoral system did not help to consolidate electoral incentives, increasing the levels of uncertainty that politicians faced when building their careers.

In 1989-1998, presidents were weaker than in the past. In 1989, presidential powers were substantially reduced with the introduction of the direct election of governors and mayors. Presidents lost control over part of the budget (the constitutional allotment to the regions) and over the discretionary appointment and dismissal of governors, which had been a potent negotiation tool. In addition, the decline in oil fiscal income and the market-oriented reforms, which limited discretionary subsidies and reduced rent-seeking opportunities, also reduced the political currency of presidents (Villasmil et al., 2007). Due to the decline in presidential power, the executive branch in the 1990s had less influence in the legislative process. In the first period, close to 80 percent of ordinary legislation was initiated by the executive. In contrast, in the second period, this figure declined to 38 percent.

Finally, changes in the party system, particularly the fragmentation and emergence of less cohesive and disciplined parties, undermined the partisan powers of the president. In the first period, three of the six presidents (50 percent) had a partisan majority in the lower house. Four out of six had majorities in coalition with other parties. In contrast, in 1988-1998, presidents did not have a majority in the legislature. This situation increased the confrontations between the Legislature and the Executive branch.

In 1998, Congress for the first time approved the separation of legislative and presidential elections, with elections to be held that year.<sup>40</sup> As a result, these legislative elections generated the largest political fragmentation in Venezuela's history (more than six effective parties).<sup>41</sup>

## **V. The Chavista Revolution: The Breakdown of Cooperation, 1999-2005**

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<sup>40</sup> Congressional elections were set to coincide instead with regional and local elections, held a few weeks before the presidential elections. This modification was designed by the traditional parties to reduce the coattail effects that a potential landslide-victory by Chávez might produce on the legislature. Instead, the parties planned to build their support in Congress based on the strength of their regional governments (and the regional authorities' coattails).

<sup>41</sup> The separation of legislative and presidential elections will be the norm in the future, since the 1999 Constitution set a five-year legislative term and a six-year presidential term.

In 1998, Hugo Chavez was elected President of Venezuela as an outsider, under an electoral platform to radically dismantle what was perceived to be a corrupt and dysfunctional political system.<sup>42</sup> In the 1998 presidential election, Chavez constantly accused the old democratic regime as one that had used oil income to favor the political and economic elite and excluded the largest and poorest sectors of the population. Chavez theoretical solution to this problem was to create a more participatory and socially inclusive democratic system through the activation of a Constitutional Assembly with full powers to transform institutional arrangements in Venezuela.

In 1999, after being elected as President, Chavez with the support of the Supreme Court successfully summoned a Constitutional Assembly to craft a new constitution.<sup>43</sup> With 56% of the vote, the *chavistas* obtained 95% of the seats (Penfold, 2002; Monaldi, 2003). These disproportional results were the result of the adoption of a majoritarian system, contrary to what was established by the prevailing Constitution of 1961 (requiring a proportional system).<sup>44</sup>

The Constitutional Assembly created the political conditions for Chavez to modify key institutional rules and substantially increase his presidential powers (Penfold 2002; Monaldi, 2003; Monaldi et al., 2005). Among the most important constitutional changes were: First, the presidential term was expanded from five to six years with one immediate reelection. Second, the president was provided complete control over the promotions within the Armed Forces without needed approvals from the national legislature.<sup>45</sup> Third, the new constitution eliminated the Senate and therefore the equal representation of the states within the legislature. Fourth, according to the new constitution the president could activate any kind of referendum (including one to summon a Constitutional Assembly with full powers) without any support from the legislature. Fifth, the constitution eliminated any public financing for political parties. Finally, the constitution introduced the possibility of recalling the mandate for mayors, governors or the president contingent upon the approval of a stringent set of conditions.

As a result of the Constitutional Reforms presidentialism was reinforced and federalism weakened.<sup>46</sup> The political regime that emerged was drastically different from the *Punto Fijo* system and also different from the one prevailing in 1989-1998. Whereas in the *Punto Fijo* period the center of the democratic system revolved around the political parties; in the *chavista* era, the center of gravity of the system is the President. Given the constitutional powers provided to the President under the 1999 Constitution most political actors have no choice but to be subordinate their political careers to the executive branch.

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<sup>42</sup> In the early 1990s, Lieutenant Colonel Chavez managed to capture the electorate's attention and emerge in the political scene as a failed coup plotter blaming corruption and market reforms as the causes for increasing poverty rates in Venezuela.

<sup>43</sup> The prevailing Constitution did not contemplate this mechanism. To reform the constitution a super majority in Congress, that President Chavez did not have, was required. However, the Supreme Court allowed the Constituent Assembly to go forward.

<sup>44</sup> The electoral system was originally devised by the Presidential Committee for the Constitutional Assembly and paradoxically supported by a significant sector of civil society which sought to promote a complete personalization of the vote and thereby reduce the influence of political parties.

<sup>45</sup> For a more detailed examination of how civilian control over the arm forces has been relaxed in Venezuela see Trinkunas (2002).

<sup>46</sup> Using the Shugart and Carey index the Venezuelan president has now legislative powers close to the regional average (Payne et al., 2002), compared to the lowest in the region before 1999. Still other factors not captured in the index make the Venezuela president formally the most powerful in the region.

The elimination of public financing for political parties and the lack of regulation of the electoral use of the Executive have weakened the ability of opposition movements to compete on an equal footing with a president seeking reelection. In addition, the president's control over the Legislature allowed the executive to pack the Supreme Court with supporters and appoint the attorney general and comptroller. Moreover, control over the Legislature and the Court enabled the President to also obtain control over the Electoral Council (Kornblith, 2005). The concentration of power that has resulted dramatically increased the stakes of power.

Although the 1999 Constitution also opened some avenues for political participation, including the recall referendum, which was later used by the opposition in 2004 to try to revoke the president's mandate; the strong grasp of the democratic institutions exercised by the *chavismo* has significantly increased the costs of participation for the opposition (Kornblith 2005).

The political regime that has been emerging is a hegemonic system, in which the president (and his party) exerts political control over all formal institutions. In the 2000 election for the new unicameral National Assembly legislature the *chavismo* obtained a majority of the seats for the first time (in the elections of 1998 before the Constitutional Assembly it had a minority). In 2005, after the opposition movement decided to withdraw from the elections, claiming the lack of fair conditions, the *chavismo* was able to control all of the seats in Congress, further increasing the stakes of power. More generally, the increasing disproportionality of the electoral system has raised the stakes.<sup>47</sup>

So far the hegemonic rule is not generally practiced in a traditional authoritarian manner (i.e. restricting freedom of press), but it is certainly exercised in order to diminish the participation of opposition groups in public affairs. It has promoted a process of political and social polarization.<sup>48</sup> The process of political polarization has also led to three general strikes, including one that ended in a short-lived coup against President Chavez in April 2002.

Since the recall referendum, the dominance of the *chavismo* over legislative and judicial affairs continues to erode what was already a very weak rule of law. During the Punto Fijo period, the Supreme Court was heavily influenced by partisan considerations. The judicial system was not seen by investors or citizens as an independent. This situation has not changed but actually worsened in the last few years. According to the World Bank's *Rule of Law* indicator, Venezuela in 2004 occupied the lowest rank in the Latin American region (in fact only 13% of the countries in the world performed worse than Venezuela. See Figure 1). For Venezuela this poor performance in 2004 also indicates a dramatic deterioration compared to 1996 when it was above the 25 percentile.

The lack of division of powers has enabled the executive branch to spend oil income with full discretion. Due to the lack of institutional constraints from the legislative and judicial

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<sup>47</sup> The electoral rules approved by the Electoral Council, do not enforce the proportionality principle incorporated again in the 1999 Constitution, by allowing majority parties to take all the plurality seats plus an additional proportional share of the proportional seats. This violates the logic of the mixed member electoral system. As a result, with a 56-60% projected vote the *chavismo* would have gotten over 80% of the Assembly seats.

<sup>48</sup> In fact, the concentration of power has been abused as a political instrument to implement targeted political prosecutions against NGOs or politicians that have been outspokenly critical of the government or to disenfranchise citizens from public benefits (scholarships, jobs, etc.) if they are believed to have supported the opposition, particularly in their effort to activate the 2004 recall referendum against the President.

branches, the executive has been able to set-up a set of administrative procedures to bypass formal budget institutions and spend without any type of oversight. The government has created a series of special spending funds which weaken transparency and promotes off-budget spending.<sup>49</sup> As of today, it is impossible to accurately estimate the amount of resources that are being spent outside the formal budget and through these special vehicles. These outcomes are feasible thanks to the direct control that the presidency exercises over the oil income controlled by Venezuela's oil company (PDVSA), since the 2003 oil strike.<sup>50</sup> This unprecedented discretionary control of oil revenues, in an oil dependent country, dramatically strengthens the effect of the high stakes of power that exist in all oil dependent nations.

Under Chavez, Venezuela has experienced yet another transformation of its policymaking process. In this era there are very few key actors, a declining role of political parties, a more prevalent presence of the armed forces, and a significant dominance of the President over the policymaking process. The degree of political polarization and conflict in the country between the *chavismo* and the opposition is so deep that discount rates are high and policies are rarely negotiated in institutionalized arenas. Policies are usually crafted as an attempt to maximize political power rather than on efficiency considerations. Cooperation has completely broken down.

As explained before, this change in the policymaking process, which has made the president the hegemonic actor of the system, is to a large extent a direct consequence of the 1999 Constitution which significantly increased presidential powers. Most significantly, the president was given the power to call for popular referenda to approve or eliminate laws, approve constitutional reforms, or call for a Constitutional Assembly with plenipotentiary powers, all of which significantly strengthened the executive's bargaining power. As a by-product, the Constitution is now extremely easy to change if the executive is willing to do so and has the necessary popular support. In addition, the presidential term was increased to six years (from five) and re-election was permitted (for one consecutive term). As a result, a Venezuelan president may rule for a longer continuous period (12 years) than any other Latin American president (the regional median is five years) (Monaldi, 2003).

Constitutional changes have certainly increased the stakes of power and therefore have promoted a less stable democracy. The consolidation of democracy requires the institutionalization of uncertainty which is better induced by institutional arrangements that promote low stakes of power (Przeworski, 1988 and 1991). In Venezuela, the opposition movement, albeit fragmented, claims that there are few benefits from participating and perceive electoral outcomes as biased and not institutionalized. As a result, a significant part of the opposition has had incentives from excluding itself from the regular democratic political process and instead to invest resources in trying to overturn the regime by non-democratic means (as observed in the April 2002 coup and the 2002-2003 oil strike). This has led to a process of radical political polarization as well as a politization of the Armed Forces.

The "winner takes all" dynamic embedded in the 1999 Constitution, combined with the high personal support of President Chavez during most of his presidency, can help to explain why

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<sup>49</sup> For example, instead of the expenditure in education being centralized in the ministry of the sector, it is dispersed between the central government, the National Development Bank (BANDES) and the special funds (FONDESPA and FONDEN). In 2006 an estimated 10% of GDP will be spent using off-budget mechanisms.

<sup>50</sup> This is in significant contrast to the period 1976-1998 when the National Oil Company, PDVSA, was financially and operationally autonomous. This radically changed after the oil strike of 2002-2003, when the government fired close to twenty thousand workers of the oil company and eliminated its autonomy.

Venezuela has experienced in the last five years more than three general strikes, a failed coup, and massive street protests. The differences with the previous two periods are very significant. Although the federalist arrangement has not been fully muted (governors and mayors are still elected) decentralization has been partially reversed. In addition, the elimination of the Senate has implied that states have lost some representation in the national legislature. Policies are now rarely negotiated with governors and mayors; instead, these actors tend to approach the presidency on a loyalty basis to gain access to needed resources. In this new system the policymaking process is thus centered on a single arena, the presidency, and the presidential power does not arise from limited delegation by political parties, as was the case in the Punto Fijo era, but rather it is the direct consequence of the constitutional design.<sup>51</sup>

## VI. Concluding Remarks

The collapse in per-capita oil income during the 1980s and 1990s was so significant that it can largely explain the crisis faced by Venezuela's political system. But why politicians have not been able to reestablish an institutional framework that provides the democratic governance necessary to sustain policies that could restore growth once the collapse had taken place?

This paper provides a stylized story of governance to explain how the dramatic decline in oil income interacted with institutional variables which in turn affected the ability of politicians to implement and sustain policies capable of re-establishing economic growth. The initial institutional arrangements adopted by the *Pact of Punto Fijo* in the early 1960s generated low stakes of power, induced a generally cooperative policymaking process and relatively good policy features. The system privileged stability over flexibility or efficiency. The distribution of oil revenues was a key element to sustain these institutional setting. However, the system evolved into a cartel-like political arrangement, with high barriers to entry. Economic performance was good, in part due to the mildly favorable external environment (stability, progressively increasing oil revenue). Despite these initial conditions, in 1973-1982, the oil booms created significant distortions in the political system and the economy. Abundance

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<sup>51</sup> A good example to illustrate the consequences of these institutional changes is the budget-making process. In Venezuela, the President has the constitutional prerogative to formulate and introduce the budget to the legislature. The macroeconomic projections that underpin the budget proposal, including the estimation of oil prices, are elaborated by the executive branch under the coordination of the Planning Ministry, the Ministry of Finance, the Budgetary Office (ONAPRE) and the Central Bank. Prior to the 1999 Constitution, the executive branch used to consult and negotiate the budget with political parties, unions, governors and mayors before submitting it to Congress. Currently, these negotiations are absent and decisions are basically taken by the President in direct coordination with the ministers involved in the budget-making process. Once introduced to the legislature, politicians in theory can amend the composition of the budget but they cannot add items to the budget. This process is usually controlled by the Finance Committee. Traditionally, legislators in Venezuela used to introduce substantial amendments to the budget bill. However, in the last few years these amendments have declined substantially reaching similar levels to the ones observed in the mid seventies when President Perez (1974-1978) controlled the legislature in the middle of a large oil windfall. For example, in the presidential period of Rafael Caldera 1994-1999, politicians in Congress introduced changes that on average amounted to about 25% of the budget bill. During the Chavez period (1999 until 2004), this average has declined to below 10% (Puente et al., 2006)). Furthermore, in 2004 the budget was approved without any changes introduced by the legislative branch. This trend shows how the legislature has been losing influence in shaping budgetary outcomes thanks to the strong grip that the executive branch has over legislative affairs. In addition, thanks to the lack of institutional constraints from the legislative, the executive branch has been able to set-up a complex set of administrative procedures to bypass formal budget institutions and spend without any type of oversight.

increased incentives for inefficiency, patronage, and corruption. Cooperation declined and the quality of policy suffered.

The dramatic oil price fall in the 1980s induced rapid economic deterioration, redistributive conflicts, and popular dissatisfaction. Political reforms were thus initiated in 1989 as a result of these outcomes. Combined with the popular disillusionment generated by the oil income fall, these reforms resulted in the deconsolidation of the political system. Political fragmentation and volatility became the norm. Policymaking became non-cooperative and politicians did not have the incentive to sustain policy changes. The outer features of public policy further eroded and instability decreased the likelihood of establishing a new cooperative arrangement.

Finally, the Chavez Revolution prompted the total deconsolidation of the party system and political cooperation broke down completely. The new institutions increased the stakes of power and made cooperation very costly; helping the quality of policymaking to continue its further deterioration.

To clarify the argument presented in this article, it helps to address a series of questions. How is the Venezuelan case different from other Latin American countries in which the political system also deconsolidated, e.g. Colombia and Peru? Why does oil dependency play a key role in the decline of the political system if it is not prevalent in other cases with similar evolution? First, it is important to establish the extent of the decline of Venezuela's political system and economy. Venezuela had among the strongest, more stable, and institutionalized parties in the region and is one of the few democracies that survived during the sixties and seventies. It now has one of the most volatile and deinstitutionalized party systems and the worst levels of democratic governance in the region. There is no other example in the region of such dramatic decline.

In many other countries there has not been a consolidated party system for a significant period of time. Peru never had a party system like Venezuela's. In the countries where there has been a consolidated party system, such as Venezuela's, the decline has not been as significant (e.g. Costa Rica, Uruguay). Colombian parties have not deteriorated as noticeably and were never as strong and disciplined as Venezuelan parties. Similarly, the degree of economic decline of Venezuela during the last quarter of a century is only rivaled in the region by Nicaragua's. The oil dependence and oil income decline variable seems critical to understand the extent of the deterioration of democratic governance.

Why then, a story tracing institutional decay only to oil income fall, is not sufficient? Are institutional reforms really relevant? Oil income decline helps to explain the increasing redistributive conflicts and the loss in support of the traditional parties. But, why the result was not simply the rise of new political actors under the same governance framework? Why were AD and COPEI incapable of sustaining policy reforms after obtaining more than eighty percent of the vote in 1988? Why did fragmentation and volatility increase so dramatically after the political reforms of 1989? Why a new democratic cooperative equilibrium did not arise? Why did cooperation breakdown completely after President Chavez institutional reforms? The institutional reforms are crucial to understand why the political system deconsolidated so rapidly and dramatically and why effective democratic governance has not been reestablished. The initial political reforms induced a decline in cooperation by increasing fragmentation and volatility, and weakening discipline. The Chavez institutional reforms further weakened democratic governance by noticeably increasing the stakes of power.



Why did political decentralization have a deconsolidating effect? Is this true in other countries? The argument presented here is that the combination of the loss in support for traditional political parties, produced by oil-induced economic decay, with rapid political decentralization had this effect. In case decentralization had been introduced progressively in a situation of favorable economic conditions the effects of fragmentation and volatility would have been probably quite limited.

In Argentina and Brazil, the two traditional federal countries in the region, political decentralization has produced party systems that are less cohesive and cooperative than Venezuela's in the past. In fact the role of regional politicians has been significant in creating governance and economic difficulties in those two countries. There is an extensive literature showing the potential negative effects of decentralization, under certain contexts, over democratic governance (Spiller and Tommasi, 2003; Monaldi, 2005).<sup>52</sup> Mexico, the other federal country in Latin America, which activated federalism recently, as Venezuela, has not had a significant increase in fragmentation, the surge of regional parties, or volatility.<sup>53</sup> This can be attributed to the fact that the PRI was able to reform the economy and obtain good economic performance before the opposition parties (PAN and PRD) obtained regional offices, and the transition to competitive democracy occurred. In that sense it has been argued that the sequence of reform, first the economy, then the political system was done in Mexico and China, in an effective order. Whereas in Venezuela and Russia, the reverse order of reforms had destabilizing effects.

It is important to emphasize that the argument presented here is not against political decentralization. Decentralization has contributed to improve the provision of public goods in Venezuela and other countries of the region. Moreover, political decentralization has many advantages in terms of democratic representativeness. In fact, during the attempts at power grab experienced by Venezuela, the existence of decentralization provided a source of democratic legitimacy, unrelated to the national executive, which has been a limit to the rise of authoritarianism. However, political decentralization in the context that it was done contributed to the deconsolidation of the political system and the weakening in cooperation and democratic governance (see footnote below).

If oil decline explains institutional decline, why does the recent oil price increase does not translate into stronger democratic governance? The potential decline in redistributive conflicts can be a potential enhancer of democratic governance (Dunning, 2005). However, as has been explained, the institutional framework is a key interactive factor. If the institutional framework increases the stakes of power and inhibits political cooperation, oil income increases will not necessarily enhance democratic governance. Moreover, the accumulated institutional decline reflected in the indicators discussed in this article, attributable to oil dependence, oil decline, and the institutional reforms, makes it particularly difficult to have a proper management of the oil boom. In fact, the current oil boom seems to be generating, in most respects, a more extreme version of what we witnessed in the seventies. The weakened

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<sup>52</sup> The case of Russia has been also studied as an example where political decentralization represented a challenge for democratic deconsolidation even though it was one of the few limits to the surge in authoritarianism.

<sup>53</sup> Countries such as Chile, Costa Rica, and Uruguay with more institutionalized political systems have had limited political decentralization. Even though this does not imply causality, it is interesting to notice that politicians have deliberately avoided political decentralization in order to maintain strong national political parties (Monaldi, 2005).

institutional framework provides fewer limits to the worst political and economic effects of the resource curse.

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Figure 1

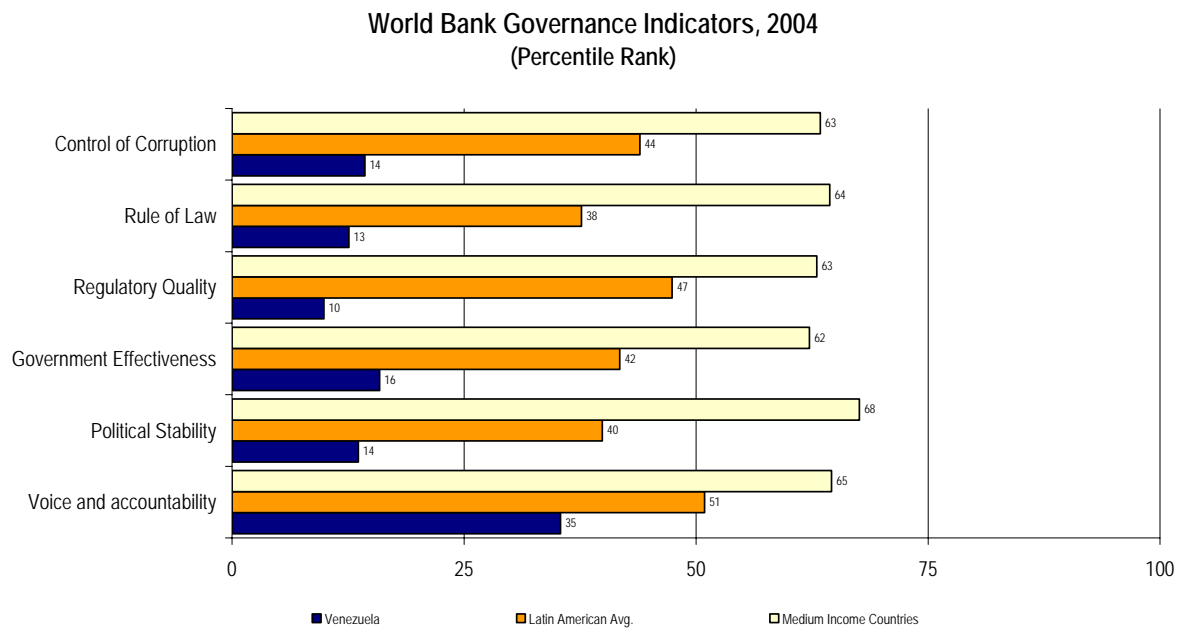


Figure 2

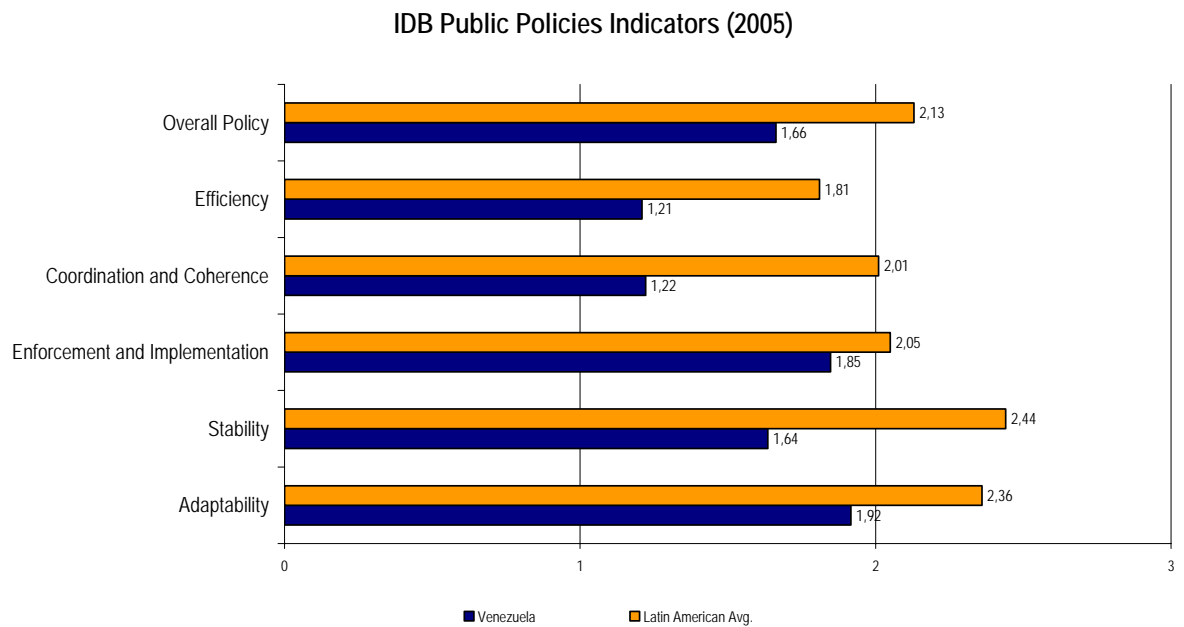
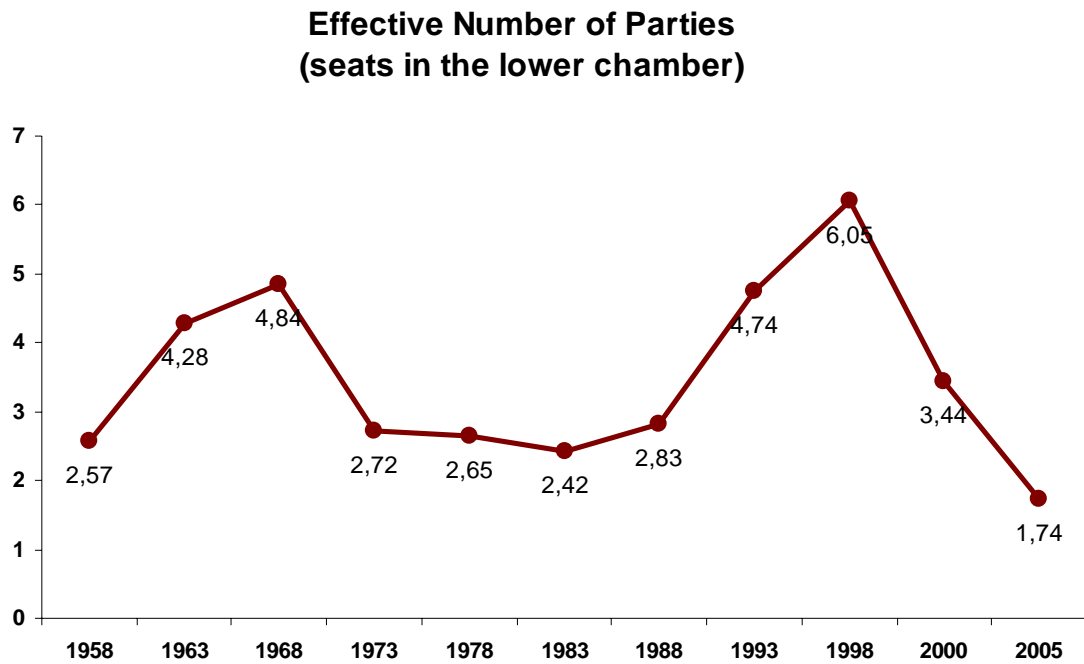
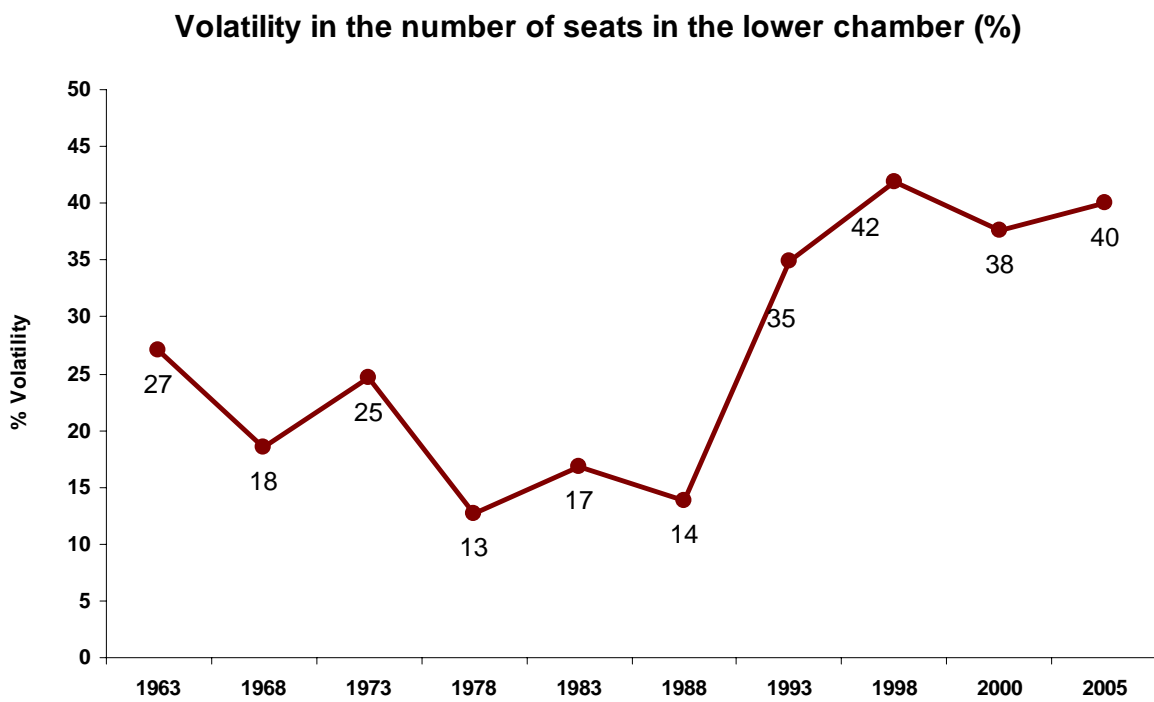


Figure 3



Source: Consejo Nacional Electoral and own calculations

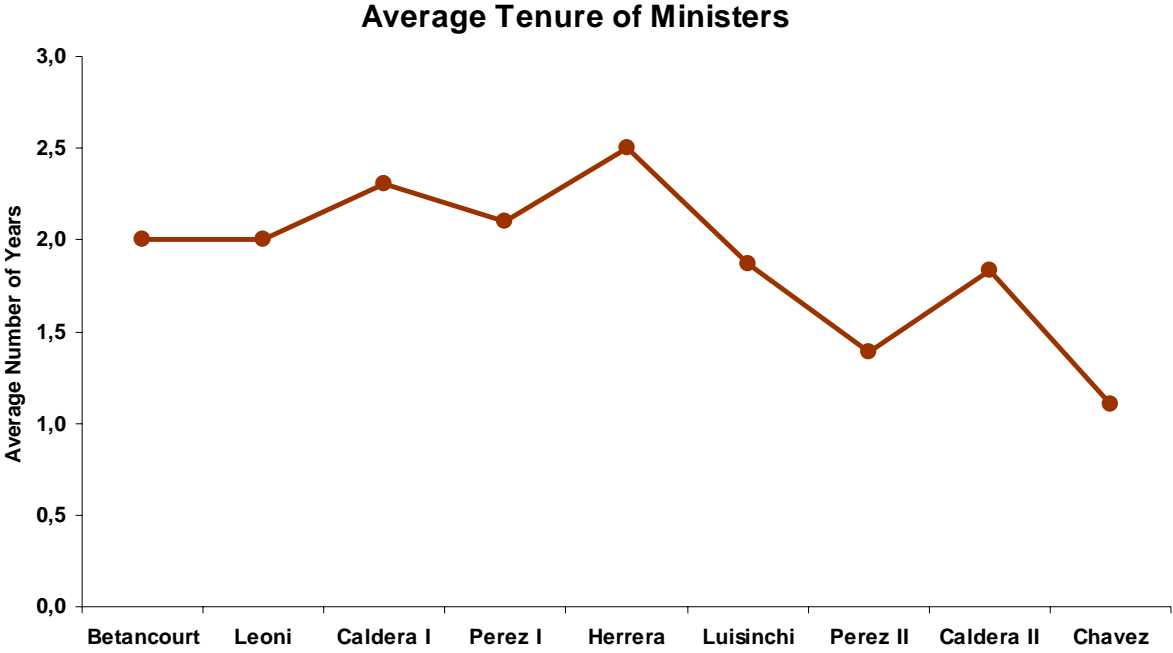
Figure 4



Source: Consejo Nacional Electoral and own calculations



Figure 5



Source: Gacetas Oficiales de la República de Venezuela, 1958-2004.

**CHAPTER 12:**  
**The Political Economy of Industrial Policy in Venezuela**

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This paper examines the political economy of industrial policy and economic growth in Venezuela in the period 1920-2003. Soon after the discovery of oil in Venezuela during the 1920's, the idea of "sowing the oil", that is, diversifying the production and export structure was an important organizing concept among economic and political elites (Baptista and Mommer, 1987). Since the early 1950's, the industrialization process became increasingly state-led. The role of the state was marked by a purposeful policy of import-substitution that coincided with the transition to democracy in 1958. Moreover, political leaders set Venezuela on a path of a more pronounced state-led, "big push" natural-resource-based heavy industrialization that focused on the development of state-owned enterprises in steel, aluminum, petrochemicals and hydro-electric power. The Venezuelan state-led "big push" heavy industrialization policy was not dissimilar in intent, ambition and scope from state-led industrial strategies in South Korea, Taiwan, Malaysia and Brazil, as well as some other oil-exporting developing economies.

There are several perplexing characteristics of Venezuela's growth trends. Venezuela was among the fastest growing economies in Latin America in the period 1920-1980 and its manufacturing growth rate was among the most rapid until the mid-1970's. However, in the period 1980-1998, non-oil and manufacturing growth rates experienced long-run stagnation; in the period 1998-2003, manufacturing growth collapsed<sup>1</sup>. Table 1 traces Venezuela's non-oil and manufacturing growth trends:

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<sup>1</sup> The importance of presenting non-oil growth data cannot be over-stated in the Venezuelan case. By presenting non-oil growth data, it is possible to identify that the slowdown in Venezuelan growth was an economy-wide phenomenon and not isolated to well-known stagnation in oil production and investment in the post-1965 period. In the period 1957-1970, oil production steadily increased and reached a peak of 3.4 million barrels per day in 1970. By 1975, as a result of sustained multinational disinvestment in the period 1957-1970, production declined dramatically to 2.4 million barrels per day despite price increases (Espinasa and Mommer, 1992: 112). After 1975, production was restricted since Venezuela, a founding member of OPEC, adheres to the cartel's policy of limiting oil export volumes and production. Oil production stagnated in the period 1975-1995, though investment in exploration increased after nationalization in 1976.

**Table 1 Growth Trends in the Venezuelan Economy, 1920-2003**

(average annual growth rates\*, %)

	Non-oil GDP	Manufacturing
<b>1920-30</b>	10.2	n.a
<b>1930-40</b>	2.7	n.a
<b>1940-50</b>	9.6	6.6
<b>1950-57</b>	9.1	15.0
<b>1957-70</b>	7.1	7.7
<b>1970-80</b>	5.7	9.7
<b>1980-90</b>	1.1	2.8
<b>1990-98</b>	2.7	1.2
<b>1998-03</b>	-3.5	-5.1

Notes: \* all output series in 1984 bolivares

Source: Baptista, (1997) for period 1920-1957; Central Bank of Venezuela, *Annual Reports*, various years for period 1957-2003.

In contrast to the literature that studies crises in authoritarian rule, and in *transitions* to democracy, the Venezuelan case provides an opportunity to examine the tensions and processes of *late development* within a *long-standing* democracy.

The dramatic slowdown in growth was paradoxical since Venezuela seemed to be a likely candidate to maintain its rapid growth. Firstly, in the period 1974-1985, Venezuela received an enormous increase in resource availability as a result of oil windfalls. Moreover, Venezuela maintained *relatively* high levels of physical and human capital investment in the context of a *relatively* accountable long-standing democratic polity. In the Latin American context, Venezuela has also maintained among the least inequitable distributions of income. In sum, Venezuela appeared to possess many favourable “initial conditions” and “social capabilities” (Abramowitz, 1986) for rapid catch-up (see Di John, 2004: 17-23 for evidence of Venezuela’s relatively favourable initial conditions in the 1970’s). Was the failure due to policy errors or inappropriate institutions, or did oil windfalls themselves become a ‘curse’ by crowding out the development of non-oil sectors such as manufacturing, or were there other factors that explain the slowdown in growth?

Section 1 critically examines different *economic* versions of the “resource paradox” arguments, notably models of “Dutch Disease models that focus the potentially negative effect oil boom can have on the manufacturing sector. Section 2 examines explanations that place emphasis on the failures in policy and institutional design, particularly arguments that emphasize the importance of

an overly centralized, interventionist state. It discusses the extent to which that the slowdown was due to excessive public enterprise investment and/or ‘inward-looking’ protectionist policies which generated industrial concentration. I find that both Dutch Disease and policy failure arguments are problematic in light historical and comparative evidence.

Section 3 provides an alternative framework for understanding long-run cycles of growth in Venezuela, in order to explain why centralized rent deployment has become increasingly more inefficient over time. Neither the developmental state, nor the rentier state literature take into account the extent to which development strategies affect the nature of political conflicts. I suggest that the nature of the technology that accompanies a development strategy requires different levels of *selectivity, or concentration of economic and political power*, to be initiated and consolidated. The possibility then arises that the historically specific nature of political settlements may not be compatible with the successful implementation of a given development strategy. For the post-1980 period, I argue in Section 4 that industrial slowdown in Venezuela was the result of a growing *incompatibility* between the ‘big push’ heavy industrialisation development strategy, on the one hand, and political strategies and contests on the other. In this period, the political science literature establishes that the Venezuelan political system became increasingly populist, clientelist and factionalised. The basic incompatibility I identify is that politics became increasingly more factionalized and accommodating precisely at a time when the development strategy required a more unified and exclusionary rent/subsidy deployment pattern. The coordination failures of the big push industrialization strategy were manifested in the low monitoring of state-created rents and subsidies, excessive entry of private sector firms in protected sectors, massive proliferation of public sector employment and state-owned enterprises in the decentralized public sector.

## **1. Economic Explanations of the Resource Paradox in Venezuela: A Critical Analysis of the Dutch Disease and Neo-liberal Critiques of State-led Industrialization**

The relationship between natural resource wealth and economic development has been the subject of intense debates over the past century.<sup>2</sup> The main purpose of this section is to critically examine the extent to which the reigning economic explanations of the slowdown in Venezuelan manufacturing growth are defensible. I examine different economic versions of the

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<sup>2</sup> Findlay & Lundahl (1999) find a generally growth-enhancing role of natural resource rich countries in the period 1870-1914. Sachs & Warner (1995) find, in the period 1971-1989, that mineral exporters, on average, grow more slowly than the average growth of non-mineral exporters.

“resource paradox” arguments, including the “Dutch Disease” models, related open economy macro models focusing on the effects of high oil-determined wages. A common theme in these models is that oil booms produce exchange rate revaluations, which supposedly reduce the incentives to invest in manufacturing and generally makes manufacturing production uncompetitive.

### **1. Economic Theories of the Resource Paradox: “The Dutch Disease Model”**

In the Venezuelan context, Mayorbe (1944) was one of the earliest to argue that an expensive exchange rate as a result of the expanding oil industry rendered nascent industries uncompetitive and retarded industrialization in Venezuela (see also Rangel, 1968; Hausmann, 1990: 23-54). The common theme in these arguments is that natural resource booms have adverse effects on the economic structure of the economy.

The logic of the simple "Dutch Disease" theories can be described as follows. In an economy in full employment equilibrium, a permanent increase in the inflow of external funds results in a change in relative prices in favour of non-traded goods (services and construction) and against non-oil traded goods (manufacturing and agriculture) leading to the crowding out of the non-oil tradables by non-tradables. That is, an appreciation of the exchange rate leads to a decline in the competitiveness and hence production and employment of the traded goods sector. The mechanism through which this change takes place follows directly from the assumptions of full employment equilibrium and static technology. With these assumptions, the external funds (from an oil boom) can be translated into real domestic expenditure only if the flow of imports increases. However, since non-traded goods cannot be imported easily (or only at prohibitive costs), a relative contraction of the traded goods sector is inevitable, otherwise the resources needed to enhance the growth of the non-traded sector would not be available. Thus, the model predicts that de-industrialization is the inevitable structural change that occurs as a result of oil booms.<sup>3</sup> It is important to note that, even without the restrictive assumptions of full employment; oil booms can induce more investment in of non-traded investments and thus discourages manufacturing investment, simply because non-traded goods prices rise relative to non-oil traded goods as a result of exchange rate appreciation. A second mechanism through which manufacturing can become less competitive in this model is through the increase in

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<sup>3</sup> "Dutch Disease" models are summarized in Corden & Neary (1982) and Neary & van Wijnbergen (1986).

manufacturing wage rates that result from increases in aggregate demand for labour that the oil booms can generate. In the short-run, when productivity levels are fixed, unit labour costs in manufacturing rise, which can, in the absence of compensating policies, lead to a loss in manufacturing competitiveness.

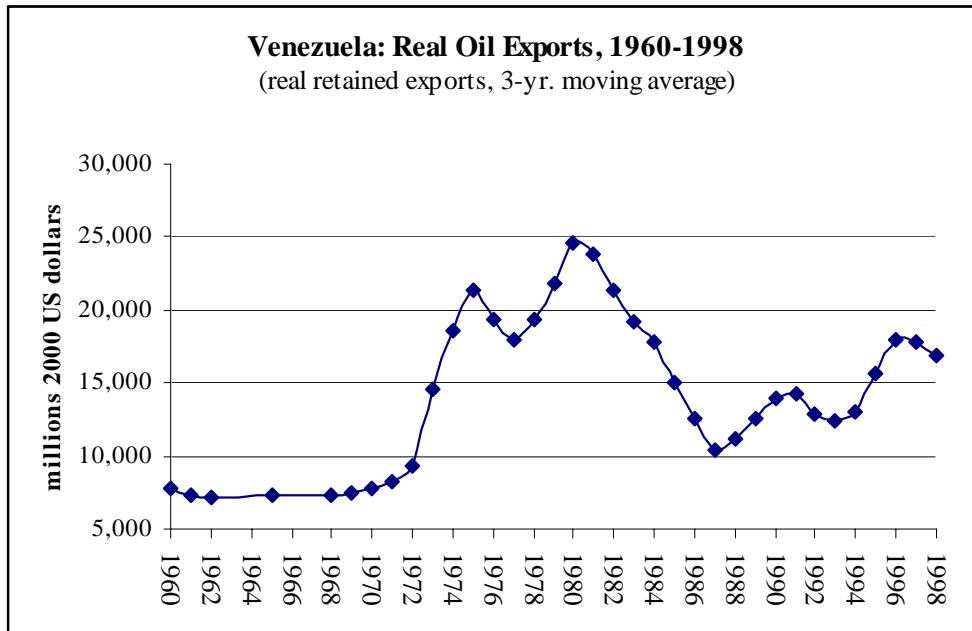
The association of “de-industrialization” as a “disease” stems from the unique growth-enhancing characteristics the manufacturing sector can potentially embody. Primary products (as well as services) were not believed to possess the "external dynamic economies" (Young, 1928) observed in manufacturing industry where faster growth apparently led to increasing productivity manifested ultimately in the dynamic specialization of employment (Verdoorn, 1949; Kaldor, 1966).

The potential for dynamic externalities of manufacturing to develop opens up an important role for policy in affecting the growth outcomes of oil booms. Since a late-developing country faces a technological gap, additional export revenues, if channelled by an appropriate industrial policy, can play an important part since the additional foreign exchange can accelerate the process of importing advanced technology and the machines that embody them. Additionally, if the industrial strategy promotes "learning", the additional revenues can theoretically accelerate the growth process. For instance, during the boom, the government could promote industry by channelling resources to toward that sector through, say, protection, subsidies or financial incentives. This can serve to modernize the manufacturing capital stock, which, in turn, can improve productivity. This means that the structural change against non-oil tradables, such as manufacturing, is not inevitable; rather the outcomes resource booms depend on the state policy responses (Neary & van Wijnbergen, 1986; Gelb, 1988).

Can "Dutch Disease" models contribute to an adequate explanation of the slowdown of manufacturing growth in Venezuela? In terms of investment, there is also no evidence that oil booms in Venezuela have been associated with *declines* in investment in manufacturing. In fact, the experience of Venezuela shows that rapid growth of oil revenues is normally associated with high investment in economic activity in the traded goods, and in particular, manufacturing sector, and paradoxically the periods of downturn in oil revenues is associated with slower growth and investment in industry. In the Venezuelan case, if we compare manufacturing investment rates in Chart 2 with the evolution of oil export revenues in Chart 1, we see there is

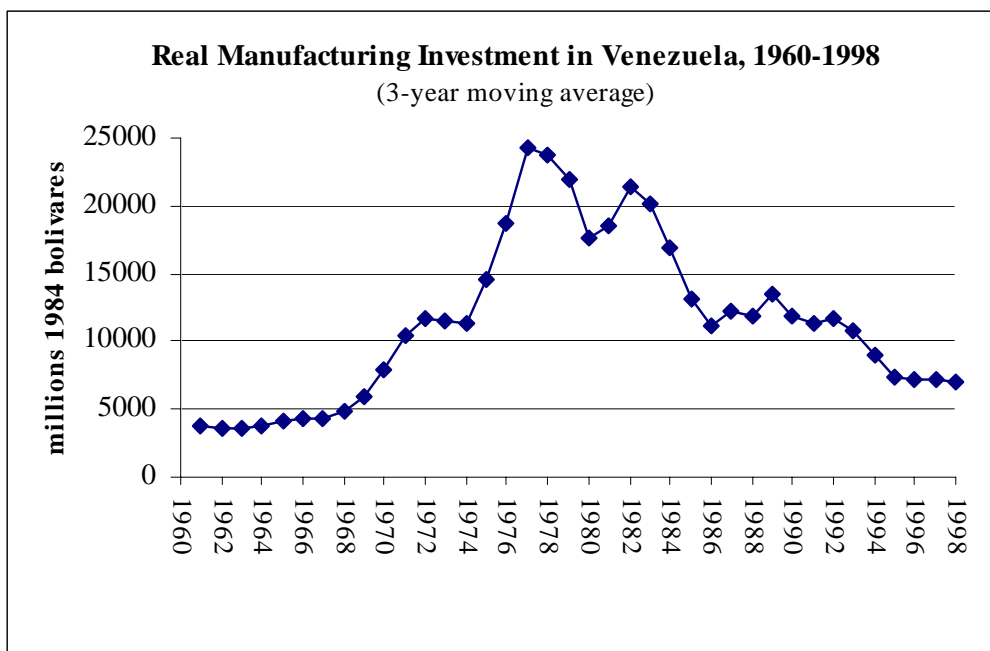
a broadly *positive* correlation between oil export revenues and manufacturing investment over the period 1960-1998.

**Chart 1**



Note: see Table 3.1 for definition of real retained exports  
Sources: Government of Venezuela, Ministry of Mines and Hydrocarbons, *Oil and Other Statistics*, various years; Central Bank of Venezuela, *Statistical Series*, various years; IMF, *International Financial Statistics*, various years.

**Chart 2**



Source: OCEI, *Industrial Surveys*, various years; Central Bank of Venezuela, *Statistical Series*, various years

The role of state policy had a decisive impact on the use of oil windfalls. In the case of manufacturing investment, public sector manufacturing investment in natural resource-based industries (petrochemicals, steel, and aluminium) was important in maintaining the high levels of total manufacturing investment during the oil booms of the 1970's.

The problem of an “overvalued” and/or “expensive” exchange rate should manifest itself in higher than average wage costs in Venezuela than elsewhere. Is it then case that comparative manufacturing wage costs and/or an excessive wage share (and hence low profitability) explains the comparative performance of the Venezuelan manufacturing sector?

The cross-country and historical evidence, however, suggests that the core problems of the Venezuelan manufacturing sector lies not necessarily in excessively high wages or relatively low profitability; rather in the inability of these sectors to catch-up with the advanced economies by sustaining rapid *productivity* growth (see Di John, 2004: 38-53, **and the Appendix** ). Over the period 1975-1996, all manufacturing sectors in Venezuela experienced substantial declines in growth rates (see Table 3).

**Table 3: Growth Rates in Selected Venezuelan Manufacturing Sectors 1974-1998**

(average annual growth in gross output, %)

	1974-1988	1988-1998
<b>All manufacturing</b>	<b>5.1%</b>	<b>-1.8%</b>
<b>Labour-Intensive Sectors</b>		
Textiles	1.7	-0.4
Clothing	4.6	-8.4
Footwear	9.1	0.3
<b>Intermediate Capital-Intensive Sectors</b>		
Non-electric machinery	5.5	-4.1
Electrical machinery	8.5	-5.4
Transport equipment	2.5	2.4
<b>Capital-Intensive Sectors</b>		
Industrial chemicals	10.6	3.2
Iron and steel	4.0	-4.6
Non-ferrous metals	8.6	1.8

Source: OCEI, *Industrial Survey*, various years; Banco Central de Venezuela, *Statistical Series*, various years.

However, these declines in growth rates and accompanying declines in productivity occur in the context of a *wage collapse* in all these sectors in the period 1985-1996 (ibid.). Moreover, some more successful late developers, both resource-rich (Malaysia and Chile)



and resource-poor (South Korea) experienced increases in productivity growth across a range of manufacturing sectors vis-à-vis the United States despite the fact that wages relative to the US wage level *increased* in all of these economies (ibid.). Stagnant and declining Venezuelan industrial performance does not seem to be only or necessarily due to low investment in (and "crowding out" of) the industrial sector during and following oil boom periods but have rather more to do with the type and productivity of industrial *investment*, which has been relatively poor. This, in turn, is closely related to inefficient economic management of the state, particularly the industrial strategy, state-owned enterprise policy and macroeconomic management.

## **2. Critiques of State Intervention in Venezuela: Inefficient Public Investment and Protectionist Policies as Causes of Slowdown?**

There are a series of analysts who attempt to locate the problem of allocation of investment as the result of "excessive" *public investment*, on the one hand, and excessive *industrial concentration* as a result of state-led industrial policies. This section critically examines these arguments.

Some analysts have attributed the slowdown in manufacturing growth to increases in the scale and scope of public enterprise manufacturing investment and the inefficiencies surrounding such investment in the period 1974-1988. Indeed, there was a considerable increase in public manufacturing investment and production in this period. In 1970, state-owned enterprises accounted for 5% of manufacturing value-added (excluding oil refining). This share rises to 8% in 1980 reaches 18% by 1986.

While there is substantial evidence of growing inefficiencies in public manufacturing enterprises, the main issue is why these inefficiencies persist. Even if public enterprise performance was poor, the collapse in growth in Venezuela is primarily a result of a collapse in private investment (Hausmann, 2003) which implies that the growth of an inefficient public enterprise sector cannot plausibly explain the growth collapse. Moreover, the sectors where the public sector dominates (non-ferrous metals, petrochemicals, and steel) were the sectors where long-run productivity performance was relatively *better* than other sectors, which were predominately privately-owned sectors (see Di John, 2004: 38-53 for evidence).

A second assertion is that state protectionism and excessive regulation stifle the emergence of a competitive private sector. Many analyses argue that centralized, interventionist and discretionary industrial policies have led to corruption and cronyism, which has, in turn, hindered growth-enhancing competition (Naím, 1993; Naím & Frances, 1995). These analyses posit that protectionism generated excessive industrial concentration and that such concentration was associated with the decline in competitive pressure facing oligopolistic and/or monopolistic firms. Naím (1993) argues that, in Venezuela, “profound structural changes were urgently needed to alleviate problems caused by the *highly concentrated, oligopolistic industrial structure*, low overall productivity growth and significant obstacles to non-oil exports that had been cultivated over many years of government mismanagement.” (p.41, emphasis added). While there is clear evidence of growing concentration in production in Venezuela over time, the comparative and historical evidence and conventional economic theory point to several problems with the claim that protectionist policy causes dynamic inefficiency by creating a concentrated industrial sector. The comparative evidence (Table 2) suggests that the Venezuelan manufacturing sector is *not* unusually concentrated compared to countries with much faster rates of industrial growth.

**Table 2. Concentration Ratios in Manufacturing:  
Venezuela Compared**

(share of production by top firms, percentage)

Economy	Share (%)
<b>Three-firm concentration ratios</b>	
Japan, 1980	56%
South Korea, 1981	62
Taiwan, China, 1981	49
<b>Four-firm concentration ratios</b>	
Argentina, 1984	43
Brazil, 1980	51
Chile, 1979	50
Colombia, 1984	62
<b>Venezuela, 1981 (1988)</b>	<b>54 (52)</b>
France, 1969	28
United States, 1972	40
Source: Amsden (1989, Table 7.1, p.162)); World Bank (1990, Table 3.8, p.5); World Bank (1993, Table 2.1, p. 93)	

Models of oligopoly are indeterminate in terms of the dynamic efficiency of the firms. This is because the regulatory structure of an industry (e.g. anti-trust laws) plays an important role in determining the competitive pressures facing firm owners. Second, a greater number of firms do not necessarily assure a greater intensity of competitive effort (Demsetz, 1997: 137-142). In aerospace, for example, the competition between just two firms, Boeing and Airbus, has not hindered rapid innovation and intense competition. In the presence of increasing returns, industrial concentration may be crucial to achieving the scale economies to compete with “best practice” firms (World Bank, 1993: 92-102; Chandler & Hikino, 1997: 29-34). Moreover, industrial concentration may play the functional role of creating learning rents that compensate for the risk and uncertainty of undertaking investment in the context of imperfect capital markets and the challenges of late development more generally (Amsden & Hikino, 1994). The problem of industrial competitiveness in latecomers is not too high a concentration level, but an over-diversified conglomerate structure and below minimum efficient plant size.<sup>4</sup> If the successful late developers are a useful reference, then competitiveness will more likely be improved in Venezuelan manufacturing through a purposeful industrial strategy that ensures minimum plant efficient plant size and ensures that firms receiving subsidization and protection are subject to explicit performance criteria. The identification of industrial concentration *per se* does not take us far in explaining poor economic performance.

This section has found that the reigning economic explanations of slowdown in Venezuela have important theoretical and empirical shortcomings. Neither oil windfalls nor the level of state intervention can explain, in isolation, the Venezuelan growth slowdown in light of the historical and comparative evidence. One common lacuna in the explanations discussed is the failure to explain *why* policy failures in managing investment funds have persisted in Venezuela in the period 1973-2003.

### **3. The Compatibility of Development Strategy and Politics Matter**

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<sup>4</sup> According to a World Bank study of the Venezuelan industrial sector, fragmentation of production is viewed as a more serious problem than concentration. In the automotive sector, for example, as of 1989, there were 15 assemblers in the market, which fell from 163,000 units in 1982 to 26,000 units in 1989 (World Bank, 1990: 52). International standards of efficiency normally require a minimum of 100,000 units per plant, which indicates the degree to which Venezuelan auto plants are sub-optimal in size. Other works by Naim (1989; Naim & Francés, 1995) do in fact identify the problem of over-diversification and firm size as an important problem for the competitiveness of the Venezuelan industrial sector.

The developmental state theorists have pointed to the benefits that industrial policy can have in inducing learning and technology acquisition (Amsden, 1989, 2001; Chang, 1994; Aoki et al. 1997). This literature has provided an important contribution of the salience of targeted subsidization, or rent-creation in the driving the late industrialization process. While the purely economic arguments for the benefits of state intervention may be accepted, little attention is paid to where the power to implement policies and where the policy goals come from in the first place. As a result, the developmental state analysis does not explain why similar types of industrial policy *fail* in many contexts. Given the *contingent* nature of political institutions and contests, there is no reason to expect that the appropriate institutional structure and politics will emerge to accommodate a country's stage of development and changing technological challenges.

The historiography of economic analyses on Venezuela has identified changes in stages of development and development strategies. Economic histories (Hausmann, 1981; Baptista, 1995) have pointed to the *change in development strategy* from a smaller-scale import-substituting industrialization toward a more large-scale, capital-intensive industrial strategy that began tentatively in the late 1950's but became a central focus of policy after 1973. In this process, the state's role as a producer increased significantly. The value of these analyses is that there is an identification of a *periodisation* of development strategies as a process that is *not homogenous* in its *technological or structural characteristics*. However, these analyses have not explored what a policy-induced switch in the technological nature of development strategy implies in terms of the political economy of property rights allocation and legitimacy.

“Big push” natural-resource-based industrialization strategies commit large sums of state resources to long-gestating, technologically demanding investment projects, which require complementary investment and state-business conglomerate coordination (Amsden, 1989, 2001; Aoki et. al, 1997; Chandler, Amatori & Hikino, 1997). This strategy also requires “extensive government support and quality competition with foreign suppliers” (Fitzgerald, 2000: 64). Finally, the promotion and nurturing of *large firms* was crucial to competitiveness and learning in late developers given the centrality of *scale economies* in intermediate technology sectors (Amsden 2001: 194-199).

'Big push' strategies involve a high degree of risk in acquiring technology and capturing new markets, including, most importantly, export markets. Thus state-led initiatives to socialize risk need to be undertaken by targeting firms and sectors to persuade new industrialists to invest in and /or upgrade in new technology and improve productivity. The Fourth and Fifth Plan of the Nation encapsulated the intention to transform the industrial structure of Venezuela through a "big push" industrial strategy. The emphasis the Venezuelan government placed on chemicals and basic metals as leading sectors were indeed similar to the industries targeted in all successful late developers (Amsden, 2001: 138-9). As it turned out, the Achilles Heel of Venezuelan industrialization strategy was to be a growing inefficiency in the implementation of 'big push' strategies.

The greater learning costs and gestation periods of such 'big push' investments bring greater economic and political challenges and risks that distinguish this type of economic strategy from the small-scale and simple technology of the easy ISI stage. There remains considerable debate as to whether Venezuela moved too quickly toward the development of heavy industrial sectors. While the move to the more complicated stage was not obviously necessary or desirable in 1974, the challenges of executing such a strategy certainly increased vis-à-vis the easier stage of ISI. The institutional challenges centre on the need for the state to maintain *continuity* of centralized investment *coordination*, effective *monitoring* of public enterprises, *selectivity* in subsidizing investment through rent creation, *discipline* of rent recipients, and *collective action capacities* of business associations. I will consider each of these factors.

The theoretical justification for centralized investment planning is well known. The "big push" or "balanced growth" models (Rosenstein-Rodan, 1943; Skitovsky, 1954) stressed the demand complementarity between different industries, which needed ex-ante investment coordination by the state.<sup>5</sup> In the context of underdeveloped capital markets and a small internal market demand, spontaneous co-ordination of decentralized market actors is unlikely since an investor in a sector characterized by increasing returns to scale (for example, in steel) may not judge the investment profitable on the assumption that demand will not increase significantly elsewhere in the economy. This will be the case even if the

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<sup>5</sup> For a recent exposition of the "big push" argument, see Murphy, Shleifer & Vishny (1989). See Rodrik (1995) for an analysis of how specific state policies such as control over credit allocation, tax incentives, trade policy and 'administrative guidance' helped to solve coordination failures in South Korea and Taiwan in the sixties and seventies.

investor has access to sufficient levels of skilled workers. The reason is that, because of scale economies, only a large-scale and simultaneous movement is guaranteed to be profitable. The creation of demand sufficient to make large-scale investments in poor countries profitable is the crux of the coordination problem.

The coordination problem in large-scale late manufacturing development is one of the main factors behind the greater use of public enterprises in the advanced stage of ISI. Public enterprises, for example, were particularly important in the heavy industrial sectors during the critical ‘take-off’ years of the 1960’s in both Taiwan and South Korea (Rodrik, 1995). Jones and Sakong (1980) examined the development of public enterprises in South Korea in the sixties and seventies and found that the Korean policy-makers had developed a coherent set of preferences with respect to where public enterprises should be established. They summarize their results as follows: “the industries chosen for the public enterprise sector [were] characterized by high forward linkages, high capital intensity, large size, output-market concentration, and production of non-tradables or import-substitutes rather than exports.” (quoted in Rodrik, 1995, p.90). These are precisely the characteristics associated with the coordination failure that occurs during ‘big push’ industrialization efforts.

The greater presence of public enterprises does, however, increase the administrative and political challenges that the central government faces in coordinating and monitoring public sector investment. The greater the level of public sector investment implies that the failure of the central government to impose ‘hard budget constraints’ on public sector managers will generate loss-making public enterprises. This, in turn, can generate fiscal drains and reduce the productivity of investments over time in the ‘big push’ phase.

Because “big push” industrialization drives generate a large ‘investment hunger’, the macroeconomic challenges of industrial policy are formidable. The dangers of overexpansion in a “big push” strategy are typically the build up of unsustainable and destabilizing external debt positions that would occur if the investment does not lead to productivity improvements, increasing competitiveness and export earnings. As Amsden (2001) notes: “That conditions of ‘lateness’ are inherently conducive to overexpansion is suggested by the fact that when a debt crisis occurs, it almost always occurs in a latecomer country.” This is because...diversification in the presence of already well-established

global industries involves moving from labour-intensive to capital-intensive sectors characterized by economies of scale.” (p. 252). The scale of “big push” investments were, indeed, instrumental in the debt crises in Latin America in 1982 and in East Asia in 1997 as both were preceded by a *surge in investment* (ibid. p. 253).<sup>6</sup>

The exigencies of “big push” industrial strategies also present significant political and economic challenges to state-business relations. Big push investment programs entail complementary investments that have significant spill over effects in pecuniary and production terms (e.g. steel and electricity). Given the larger size of such complementary investments in ‘big push’ strategies, the *failure* of the state and business associations to *coordinate* investments may result in larger *costs* than in the earlier stage of ISI where the scale of investments are generally lower. For example, the costs of failure to coordinate investments can lead to severe spare capacity, which has large negative effects on investment returns. Even when abstracting from the problem of coordinating investments, the failure of the state or business associations to effectively monitor investments in a single large-scale manufacturing sector can be costly. For instance, the inability of the state to impose conditional rents/subsidies or permitting *excessive entry* (e.g.-fifteen car assemblers in Venezuela since the mid-1970’s) are more costly for industries exhibiting increasing returns to scale compared to small-scale manufacturing operations. Moreover, excessive entry may lead to the development of firms with too small an average plant size to compete with imports or in export markets, especially in the industries characterized by increasing returns. Where proprietary knowledge and product development and hence research and development (R&D) is important to competitive success, large numbers of small, inefficient producers constrains the capacity to compete for latecomer industries. This is because small firms do not generate the turnover to direct sufficient amounts of resources to R&D (Kim and Ma, 1997: 122-123; Amsden, 2001: 277-281).

For large-scale resource-based and other heavy industrialization, *selectivity* in the subsidization process is one of the salient characteristics of industrial policies (Lindbeck, 1981). This is especially the case where increasing returns to scale are relevant. The failure of the state to be selective will negatively affect productivity performance.

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<sup>6</sup> Of course, the *duration* of a crisis will depend on the capacity of the state to effectively change institutions so as to revive investment, growth, competitiveness and exports. In this respect, East Asian developmental states were more successful than their Latin America counterparts (Amsden, 2001: 253).

Selectivity needs to be complemented with state capacity to *discipline* rent recipients. The scale of the subsidization implies that big-push strategies require states to make rents conditional on performance criteria (Kim and Ma, 1997). Hence, there has been significant emphasis on state *discipline* of producers as one key to the efficiency of industrial policy (Amsden, 1989).

The complementary nature of big-push strategies means that decision-making and actions are inter-dependent. The greater the inter-dependence of investments, the more that an institutional design that assures *reliability/predictability and discipline* is required (Demsetz, 1997:30-34). This generally means that a legitimate and powerful centralized authority is required. An outstanding example of the importance of reliability and discipline that centralized authority provides is a military unit during war. In this perspective, it is not surprising that states that have faced internal and external *threats* have used such exigencies to increase bargaining power vis-à-vis business groups, to mobilise resources, to convince and/or force industrial producers to forsake short-run profits and to make subsidies conditional on performance criteria. For instance, the willingness of business groups to cooperate with state initiatives occurs because perceived and real threat raises the price of failure (Vartianen, 1999: 224).

Finally, the great risks entailed in “big push” or “second stage” industrialization strategies tend to necessitate a greater degree of cooperation and collective action *among business associations and conglomerates*. Effective collective action can help socialize the risks of developing export markets, acquiring technology, managing firm entry and exit, and negotiating with the state to provide services that are in the collective interests of a given sector (see Wade, 1990; Evans, 1995; Maxfield and Schneider, 1997; Haggard, Maxfield and Schneider, 1997). Therefore, *fragmentation* of business associations can also lead to more costly coordination failures as the scale and scope of investments increase. This is because fragmentation can lead to *particularistic* demands and bargaining that hinders the competitiveness of sector as a whole when for example, there is a level of bargaining with the state for firm entry that leads to the creation of too many firms at sub-standard scale.

In light of the exigencies of large-scale subsidization and inter-dependence, it is not surprising that “big push” development strategies have enjoyed success only in a very few



late developing countries such as Japan, Taiwan, South Korea, Singapore, Brazil and Malaysia. Moreover, these late developers have been characterized by a relatively legitimate, secure *centralized* state both in terms of political and economic organization (Woo-Cummings, 1999). Relatively centralized business associations and state-big business links tended to accompany more complex and risky industrial strategies (Maxfield and Schneider, 1997). This implies that fragmented or highly factionalized political contestation may lead to significant coordination failures in both industrial policy and macroeconomic instability.

Neither the neo-liberal or developmental state theorists systematically consider the different political challenges that particular development strategies generate, nor do they examine the interaction of economic and politics in any more general manner. The failure of dominant paradigms on state intervention to consider the changing nature of political conflict that different development strategies generate implies that such models will fail to map the extent to which contingent political settlements are compatible with different economic challenges of catching-up over time.

### **3.1. Periodisation of Industrialisation Stages and Strategies in Venezuela**

This section attempts to periodise the changing nature of the development strategies and the nature of scale economies and technological complexity in the Venezuelan manufacturing sector. It is not my intention to focus on the details of economic policy-making since there is already a substantial literature on macroeconomic and industrial policy-making (Hausmann, 1995; Astorga, 2001; Rodríguez, 2002).

In the economic history analyses of Venezuelan industrialization, it is generally agreed that there was an important increase in the capital-intensity and scale economies of industrial output and composition beginning in the *early 1960's* (Hausmann, 1981; Baptista, 1995; Astorga, 2000). The development of the state steel mill, SIDOR in 1962 and the state-led attempt to promote the metal-transforming and transport sectors, particularly the automobile and auto parts sectors from the early 1960's onwards were notable examples. The capital-intensity and scale economy of many leading industrial sectors increase further with the Fifth Economic Plan outlined below. In the period 1973-1982 the industrial strategy switches to a natural resource-based "big push" strategy. As well, traditional ISI

begins to develop protectionism for more technologically challenging sectors such as autos. Some additional empirical evidence to support this claim is as follows.

It is possible to identify transitions in development strategy by examining the structure of manufacturing. Table 3 includes information about the structure of output, employment and capital assets in manufacturing, excluding oil refining- where indeed significant development had taken place (see Karlsson, 1975: 71-115 on the development of the oil refining industry). In output terms, traditional industries of food and textile comprised over 63 percent of manufacturing output. By 1971, the share of traditional industries declines to approximately 40 percent, a share that is maintained through 1996. The decline in the share of traditional industries in capital assets is also notable. While the traditional industries comprised respectively 52.8 percent and 62 percent of all manufacturing assets in 1936 and 1953, their share declines to 37.3 percent and 21.6 percent in 1961 and 1996 respectively. The traditional industries also show a steady though more gradual decline in the share of employment over the whole period.

**Table 3. Venezuela: Shares of selected Sectors in Manufacturing Value-Added (excluding oil refining) 1936-1998**

(percentages)

		F,B &T	Textiles	Paper	Chemicals	Non- met.	Bas. met.	Met.- Trans.
<b>Output</b>	1936	52.3	10.6	0.1	4.5	3.8	0.3	2.4
	1953	41.6	8.1	1.2	8.5	9.7	0.4	3.7
	1961	41.0	15.6	3.3	8.3	6.5	0.9	11.1
	1971	29.2	12.1	4.3	10.2	6.7	6.0	17.7
	1981	27.2	8.1	3.9	10.8	6.8	7.0	19.6
	1988	32.2	4.7	3.5	10.0	4.5	10.3	18.6
	1998	36.0	5.2	2.3	9.8	5.2	10.4	18.0
<b>Labour</b>	1936	59.3	11.9	0.2	2.5	4.9	0.2	1.9
	1953	48.9	8.4	1.0	4.1	6.8	0.3	3.8
	1961	27.2	23.0	2.8	5.0	6.6	1.2	14.8
	1971	24.7	15.4	3.4	7.5	6.9	4.6	16.8
	1981	18.1	11.2	2.9	7.6	6.6	7.2	18.4
	1988	25.6	7.3	0.8	7.9	6.6	9.8	13.7
	1998	22.8	4.9	0.7	9.1	7.4	6.7	12.1
<b>Capital</b>	1936	43.2	9.6	1.3	-	-	-	-
	1953	53.0	9.0	1.4	5.9	12.7	0.5	2.3
	1961	28.2	9.1	3.2	10.6	7.5	26.5	6.5
	1971	23.7	9.4	4.8	7.9	9.5	23.3	10.8
	1981	18.8	3.8	2.8	6.0	10.4	34.7	13.9
	1988	16.6	3.9	2.2	8.0	8.1	45.7	13.6
	1998	18.2	3.4	3.4	17.7	9.7	31.0	10.3

Notes: Output= value added; Labour= number of employees; Capital = fixed assets.

The brackets in the following are the corresponding numbers of the International Standard Industrial Classification (ISIC). F,B&T: food, beverages and tobacco (311-314); textiles and clothing (321); Paper: paper and paper products (341); Chemicals: chemical industry (351); Non-met: non-metallic minerals (361, 362, 369); Bas. Met.: basic metals (371, 372); Met. Trans: metal-transforming industries (381-384). The figures used to obtain the percentages of capital and value-added in 1936 and 1953 are in current bolivares (Bs.), thereafter are in Bs. at 1968 prices.

Source: Astorga (2000: 214, Table 8.1); OCEI, *Industrial Survey*, 1988, 1998; Central Bank of Venezuela, *Statistical Series*, various years.

While the traditional industries were declining in their share of output, capital and employment, we see a marked increase in the shares of heavier, large-scale industrial sectors (chemicals, non-metallic minerals, basic metals, and metal-transforming industries) over time. It is telling that the relative increase of these industries is seen most in terms of the increase of their share of total manufacturing capital assets. This is due to combination of the increased capital-intensity and scale of these industries and their relatively disappointing growth performance. The share of fixed assets of the basic metals sectors (as a proportion of all manufacturing fixed assets) increased from 0.5 percent in 1953 to 26.5 percent in 1961; and then increased as dramatically to reach a peak share of 45.7 percent in

1988. The increase in the relative share of fixed capital assets of the basic metals sector was the most pronounced of any sector in the period 1961-1988. The relative share of the metal transforming sector (which include capital goods, and transport) increased significantly from 2.3 percent in 1953 to 6.5 percent in 1961 and reached a peak share of 13.9 percent in 1981. In aggregate terms, the share in total assets of the four sectors increased from 20.9 in 1953 to 51.1 in 1961, to 54.6 in 1971, to 65.0 in 1981, and finally reaching a peak of 75.4 in 1988. Given that the largest increase in the aggregate share of capital assets of the heavy industrial sectors occurred between 1953 and 1961, the period 1965-73 can plausibly be seen as marking a period of transition of development strategy. An important caveat would be to note the dramatic increase in 1981 of the share of basic metals, which owed to the state-led “big push” program in steel and aluminium.

The general economic history of Venezuela corroborates the transformation in the development strategy between 1965 and 1973. While the period 1920-1958 was characterized by relatively liberal trade policy (Di John, 2004: 169-178), the role of state-created rents increases significantly from 1960 onwards. The most important mechanism of promoting industrialization through state-created rents was the system of protectionism through tariffs and non-tariff barriers.<sup>7</sup> A differentiated tariff regime was set up to make some imports more expensive than others. Differentiated tariffs allow the government to raise the import prices of goods, which can be produced at home. This discourages domestic consumers from importing these goods and at the same time encourages them to buy domestic products whose higher prices or lower quality may have prevented them from competing with foreign products at the early stage of industrialisation. From the mid 1960's to the late 1989, average tariffs in manufacturing industry were 60 percent for consumer goods, 30 percent for intermediate goods and 27 percent for capital goods (World Bank, 1990: 16-18). The average level of tariff protection and effective rates of protection as well as the tariff dispersion was broadly similar to many Latin American countries (Edwards, 1995: 198-203).

A second component of the protection policy was the use various forms of non-tariff protection such as import licenses and foreign exchange rationing, the latter used most extensively in the era of multiple exchange rates (1983-1988). In the period 1968-1989, the

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<sup>7</sup> It is important to note that protectionism becomes more pronounced with the elimination of the Trade Agreement with the United States in 1972. This Treaty prohibited tariffs on imports from the US.

average share of manufactured goods subject to non-tariff barrier coverage, that is, import licenses and prohibitions, oscillated between 40 and 50 percent (World Bank, 1990: 16).<sup>8</sup> Comparative data for Latin America in the 1980's indicates that Venezuela's share of non-tariff barrier coverage were similar to the regional average (Edwards, 1995: 200).

Apart from state-led promotion of private industry, the Pérez administration (1974-79) envisioned a national project called *La Gran Venezuela*. The cornerstone of this "vision" was the heralded Fifth National Plan (1976-1980), which was to set Venezuela on a path of a more pronounced state-owned enterprise-led, natural resource-based "big push" heavy industrialization policy. In addition to the nationalization of the oil and iron ore industries in 1976, numerous public enterprises were expanded in heavy industries (steel, iron ore, aluminium, bauxite, petrochemicals, oil refining, and hydroelectric power) to provide inputs for domestic industry in an attempt to vertically integrate the import substitution process and to accelerate the technological capacity and diversification of the industrial and export structure (Karl, 1982: 194-208). The industrial state holding, *Corporación Venezolana de Guyana (CVG)* was responsible for managing natural-resource-based industrialization and the national oil company *Petróleos de Venezuela (PDVSA)* was responsible for the expansion and modernization of oil refining.

The "big push" natural-resource-based industrialization (NRBI) project marked a purposeful effort to expand the role of the state in direct production.<sup>9</sup> With the nationalization of oil in 1976 and the development of non-oil state-owned enterprises, the state became the main producer in the economy, the largest generator of foreign exchange and the largest employer. The main objective of the NRBI was to diversify the export structure of the economy and to 'deepen' the manufacturing sector by increasing the share of intermediate and capital goods production.

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<sup>8</sup> Import licenses were used most heavily for processed food, consumer goods, and transport equipment. Import monopoly licenses were also instrumental in establishing state-owned enterprises in steel, aluminium, and petrochemicals (World Bank, 1990: 15).

<sup>9</sup> In 1970, state-owned enterprises accounted for 5% of manufacturing value-added (excluding oil refining). This share rises to 8% in 1980 reaches 18% by 1986. When oil refining is included, the corresponding figures are 4%, 36% and 42% correspondingly. In 1987, public firms were concentrated in non-ferrous metals (largely aluminium) where the state sector accounted for 91 percent of production; iron and steel, where it accounted for 61 percent and chemicals and petrochemicals products where it accounts for 45 percent (World Bank, 1990: 30). In investment, public manufacturing investment share (excluding oil refining) accounted for 24 percent of total manufacturing investment in the period 1968-1971. In the period 1972-1980, the public share rises to 41% (calculations based on data from Central Bank, Statistical Series, various years; and OCEI, *Industrial Survey*, various years).

The other important trend to note over this period is the dominance of the public sector as the main exporter. While the nationalization of oil and iron ore had placed the state as the main exporter in the economy in 1976, state-owned enterprises were also significant in the generation of aluminium, steel and, chemical exports (state-owned enterprises accounted for 95 percent of aluminium exports, 45 percent of steel exports, and 20 percent of chemical exports). By the period 1993-1995, the public sector was responsible for 83 percent of total exports and 36 percent of non-oil exports. Thus, the gradual shift toward large-scale, high-value added technology was also one that became more state-owned.

In sum, the evidence broadly supports the notion that a ‘big push’ development strategy gathers pace occurred over the period 1965-1973. Continued growth became more challenging in that the industries with import substitution possibilities, namely intermediate and capital goods, are characterised by increasing scale economies. Further industrialization involved greater risks and required more selective targeting of capital for longer periods as new expertise had to be acquired and new markets captured. This would be especially true for the traditional industries. Conquering export markets in consumer goods is a risky and long-gestating project that requires marketing, and investment in distribution channels and increases in scale economies. The declining import coefficients in traditional industries meant that further growth there would require export-led growth. At the same time, this section has also established that the relative share of large-scale heavy industrial investments dominated the industrial strategy from 1973 onwards.

#### **4. A Revisionist Political Economy of Manufacturing Performance in Venezuela, 1958-2003**

The historiography of economic analyses on Venezuela has identified changes in development strategies in the period 1965-1973. However, some of these analyses assume that the growing centralization of the state and the development state-led “big push” strategies necessarily produce, on the hand, dysfunctional rent-seeking, cronyism and corruption; and, on the other hand, an increase in dynamic inefficiency of the economy. Venezuelan policy-makers in the 1970’s can be accused of switching development strategies too early by adopting an unrealistically complicated and ambitious industrial strategy in the context of a relatively underdeveloped manufacturing

sector in 1970. While this may explain the increases in capital-intensity and increases in the inefficiency of investment for at most a decade, it does not explain why Venezuela's growth rate continued to decline for *more than two decades after* the early 1980's when the "big push" investments had been largely completed. The coincidence of a change in development strategy with a decline in growth is thus not inevitable, but a *historically specific* feature of the Venezuelan political economy in the period 1980-2003.

Convincing explanations of relative performance have to identify which features *distinguish* Venezuela from more rapid growing latecomers with similar institutional interventions and/or similar or greater levels of corruption; and why rapid growth in the period 1920-1980 in Venezuela evolved into slower growth, and prolonged stagnation over most of the period 1980-2003. What distinguishes Venezuela from more successful cases of big-push industrialization in the period 1980-2003 is not principally the degree or scale of corruption or industrial concentration, but the nature of political strategies and settlements that underpinned the transition and consolidation of its democratic regime. The rich political science literature on Venezuela emphasizes that the Venezuelan party system formed the focal point of democratic transition and consolidation in the period 1958-1998. It is well known that this party system mobilized support through purposeful *pacts and clientelist patronage* that mobilized and accommodated a growing *urban populist alliance* (Levine, 1973; Karl, 1986).

I suggest an alternative explanation to the reigning approaches which incorporates the *economic* consequences of the growing and increasingly *fractionalized political* contests *between and within* political parties attempting to build political clienteles and accommodate middle class groups, emerging and established family-run conglomerates, and labour unions competing for access to centrally allocated state resources. In particular, I argue that the slowdown in growth and productivity has been caused by the *incompatibility of populist clientelist accommodation with the requisites of the "the big push" development strategy. The nature of the incompatibility was a growing political fragmentation and discontinuity in coalitions underpinning the state at precisely the time when the development strategy called for more centralized state control and continuity in policy orientation.* While there is no doubt that the suddenness with which Venezuela switched strategies in 1973 contributed to pressure placed on state and private sector capacities the *prolonged* stagnation of the Venezuelan economy still requires explanation.

Populist and clientelist accommodation has been manifested in Venezuela through well-known patterns of excessive entry into industry, excessive white-collar employment patronage in state enterprises, contradictory and rapid changes in regulations, volatile and (politically) aggressive competition among factions of capital allied to different political patrons. The political rationale of maintaining populist support negatively affected the ability of the state to be selective in the disbursement of rents and to discipline rent recipients. Massive levels of capital flight in the 1970's and 1980's and the proliferation of unviable and contradictory subsidies and price controls were an important manifestation of the political failure of the party system to contain conflicts.

#### **4.1 Periodisation of Political Settlements and the Development of Populist Clientelism in Venezuela**

The nature of the political settlement changes dramatically in the post-1958 period. The most important change that occurs is the transition and consolidation of democracy. The purpose of this section is to suggest how the political nature of the democratization process was to affect the efficiency of rent deployment process and macroeconomic management. While centralized rent deployment is maintained during the democratic period, the motivations of the leadership changes dramatically as the social support base of the state and the grounds for what becomes a legitimate distribution of rents changed. The changing nature of the state will come to affect negatively the ability of state leaders to manage the rent deployment process in line with the economic challenges that come with the switch toward 'big push' natural resource-based industries. In particular, the nature and logic of the Venezuelan polity as it evolved disrupted the ability of the state to maintain *selectivity* in industrial promotion and made *disciplining* rent recipients (particularly capitalists in the private manufacturing sector, public enterprise managers and public sector labour unions) difficult. Moreover, the increasing intensity of electoral rivalry further damaged *continuity* in policy and implementation that had devastating consequences for economic efficiency. One of the principal processes accompanying electoral rivalry was a growing factionalism within and between the main two political parties. As result, both state-business relations assumed a growing factionalism and cronyism that undermined collective efforts at industrial restructuring.



According to the vast political science literature, the Venezuelan party system and the types of broad state-society relations that developed in relation to the political parties fall into four distinct periods. The first is the period 1928-1948 which saw the development of a radical populist mobilization of peasant leagues, labour unions and middle class groups challenging the dominant military, landed and commercial elites. The second period refers to the era of pacted democracy in the period 1958-1973 when the system of radical populist mobilization evolves into a more conciliatory and consensus-based system or what Rey (1991) refers to as the system of elite conciliation. In the period, 1973-1993, the system of pacted democracy breaks down as right-wing and left-wing threats to democratic regime fades and is replaced by a systems of two-party populist electoral rivalry where factionalism and particularistic clientelism become the dominant forms of political competition. The period 1993-1998 witnesses the decline and legitimacy of the two leading political parties, AD and COPEI, and is thus characterized by the increase in multiple party electoral rivalries. The emergence of multi-party coalitions supporting candidates independent of the two previously hegemonic parties characterize this period, which results in the election of Hugo Chávez in 1998. The period 1999-2003 marks the rise of anti-party politics, polarization of political contestation, and collapse in state-business cooperation.

The origin of the “system of populist mobilization and conciliation” (Rey, 1991) that brought to power a brief radical democratic junta in the period 1945-48 and formed the multi-class populist basis of democratic transition was a long gestating historical process. The battle cries of the Venezuelan populist mobilization were democratization, economic nationalism, and social justice (Powell, 1971: 28; Levine, 1973, 1978; Karl, 1986; Ellner, 1999), which generated significant of *populist political inclusion* not uncommon in Latin America (Di Tella, 1970; Cardoso & Faletto, [1969] 1979).<sup>10</sup>

*Acción Democrática* (AD) was the most successful political party leading the mobilization of the populist clientelism. AD’s defined itself as a *multiclass nationalist coalition* whose mission was to unite the ‘masses’ against the landed oligarchy and the foreign oil companies. The organisational strength of AD and other political parties forced the creation of a military-civilian junta in 1945 that introduced electoral politics to

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<sup>10</sup> See Di John (2004: 179-183) for an analysis of the political economy processes behind the construction of populist mobilisation in Venezuela in the period 1936-1948.

Venezuela. The ensuing three-year period, known as the *trienio*, marked the decisive introduction of mass politics into national life. The *trienio* period brought long-lasting changes. Suffrage was significantly expanded from 5 percent of the population to 36 percent in 1945 (Kornblith and Levine, 1995: 42). Elections in 1946 brought AD to power with a landslide electoral victory. In three years, AD raised the number of organized peasant members from 3,959 to 43,302 while increasing the number of labour unions from 252 to 1,014 (Powell, 1971: 79). AD legislated wages raises and subsidies for consumer goods. Real wages (in 1957 bolivares) increased from 7.15 bolivares in 1944 to 11.71 bolivares in 1948 (Hausmann, 1981: 323). Labour union mobilization increased as witnessed in the increase in the number of labour dispute petitions and strikes, which increased from 15 and 4 respectively in the period 1936-1945 to 203 and 70 respectively in the period 1945-1948! State spending in education, health, water and communications were extended for the first time to poor, socially excluded groups and regions (Hausmann, *ibid*: 313-56).

The greatest legacy of the *trienio* period, however, was the bitter conflicts that ensued over the radical reforms attempted by AD. As Levine (1989) notes: "It is hard to overstate the depth of the changes *trienio* politics brought" (p. 252). Radical labour reforms and extensive program of agrarian reform were introduced by an AD elite who did not perceive the need, given its electoral dominance, to consult other organized groups in their plans. Economic and social elites began to fear that the radical politics introduced would entirely destroy long-standing privileges and the previous social order. Opposition gathered on the right, represented by the Catholic Church, by the new Christian Democratic Party COPEI, conservative elements in the military, US oil companies and domestic business groups and the US embassy (Karl, 1986: 205-6; Kornblith and Levine, 1995: 42-43).

The three-year experiment with democracy gave way to a decade of repressive authoritarian rule. Under the leadership of General Marcos Perez Jimenez, AD was banned. Labour, agrarian and educational reforms were revoked, labour unions were repressed, and more concession-friendly policies toward oil companies were instituted. Political opposition in the period 1948-1957 was crushed violently (Kornblith and Levine, 1995: 43-44). The experience of the *trienio* was to have a profound effect on the

nature of political strategy in the post-1958 era of democratic transition and consolidation.

#### **4.1.a The Era of Pacted Democracy (1958-1968)**

The focal point of democratic transition was the 1958 Pact of Punto Fijo, which provided the institutional mechanisms of consensus building and cooperation between the dominant political party, Acción Democrática (AD) and the leading opposition party, the Christian Democratic COPEI (Committee for the Political Organization and Independent Election). The success at political party organization and the dominance that the two leading political parties maintained in economic, social and cultural aspects of Venezuelan society in the democratic era have led some to characterize the Venezuelan polity as a “*partidocracia*”, that is, “partyarchy”, or “party system” (Coppedge, 1994; Kornblith and Levine, 1995: 37-38).

The transition to a consolidated democratic system in 1958 was accompanied by significant changes in the nature of the political settlements and economic policy-making in Venezuela. Political change in 1958 was driven by the lessons that political actors perceived from the failed attempt at democracy during the *trienio*. The main lesson most of the leaders of AD, COPEI and URD drew from the *trienio* was that polarization, *acting without building consensus*, and the alienation of powerful minorities would lead to the return of authoritarian rule. Accompanying the willingness of AD to reach compromise, there was substantial public pressure among powerful interest groups to *limit the power of AD* in the likely event of new elections.

The *preservation of democratic rule* became the *primary political objective* of political party leaders. The perception among party cadres, unions and business groups that there was a need to *secure the fragile alliance* for democracy profoundly shaped the actions of political leaders. The recognition that the army, the oil companies, and traditional dominant business groups were capable of unravelling democracy produced what Rey (1986) has called their “obsessive preoccupation” with appeasement and accommodation. This concern with fragility was met through formal and informally negotiated compromises.

Political science and historical studies on Venezuela have emphasized that the democratic regime has been maintained by a series of political *pacts* and *clientelist* links

that were an important part of building a multi-class and (largely) *urban populist* alliances (Karl, 1986; Levine, 1973; Rey, 1991). AD emerged as the fundamental party.<sup>11</sup> This party system may be characterized as a polity where processes of contestation, conflict resolution and corruption have been accommodated through *populist clientelism*.

The viability of the populist and clientelist pact depended on balancing co-optation and accommodation of middle and working class demands. A telling indication of the change in balance of political power that the pacts sustained can be seen in the patterns of social spending in the three decades following 1958. One of the key strategies of the political parties to *build middle and working class clientele* was to increase the scope of social spending. The increase in social spending became one of the main areas for delivering jobs and services to the middle and lower income groups, and was important for pre-empting more radical demands for distribution. The shifts in the composition of public spending are dramatic when compared with the era of authoritarian rule in the twentieth century. As Kornblith and Maignon (1985: 205) demonstrate, social spending (which includes health, education, water and sanitation, and housing) as a percentage of total state spending grew from an annual average of 11.4 percent under Pérez Jiménez to 28.1 percent in the period 1958 to 1973. Between 1969 and 1973, the years immediately preceding the oil boom of the 1970s, it averaged 31.4 percent of total spending.

The main legacy of the Pact was to institutionalize a centralized form of political clientelism where the political parties were the main channels of patronage. In terms of rent deployment, the Pact re-enforced the central role of the executive in agenda-setting, policy-making and implementation. A key component of the pact that developed that regardless of who won the elections, each party was guaranteed some access to state jobs and contracts, a partitioning of the ministries, and a complicated spoils systems that would ensure the political and economic survival of all signatories, which included the main labour unions federations (CTV) and the main umbrella business association (FEDECAMERAS).<sup>12</sup>

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<sup>11</sup> A fundamental party (a term coined by Gutiérrez Sanín, 2003) can be viewed as the natural governing party (in terms of electoral success) as well as the party whose mobilisations and strategies were central to regime founding. The justification for referring to Acción Democrática as a fundamental party in the period 1958-1993 is based on the following: a) AD never yielded its position in this period as the single biggest party in either the House of Representatives or Senate; and b) AD won 5 of the 7 presidential elections.

<sup>12</sup> Levine (1973) and Karl (1986) discuss the Pact in detail. Pact making was indeed a feature of many Andean countries in the 1950's and 1960's.

In effect, the decision to divide up ministerial posts and deploy resources to meet *political criteria laid the seeds of politicising the public administration and allocating rents on the basis of political rather than economic criteria*. The consolidation of populist support was to depend on tangible patronage, which AD (and eventually COPEI, its main rival after 1958) was to provide. For this reason, clientelism in the form of material benefits provided by a political patron in exchange for political support and loyalty on the part of a client, where such support can take the form of campaign financing, campaigning but more usually, voting for the party the patron represents. The patronage has taken many forms, both legal and corrupt. These include cheap investment credit, tariff protections, import licenses, employment opportunities in the public sector, housing and mortgage credits, price controls on basic consumer goods, and so on.

The era of pacted democracy did not eliminate regime *fragility*. Many left-wing groups, including the Communist party, and radical elements within AD were demanding a radical social program. Ideological disputes over the ‘exclusionary’ nature of the pacts had two major political costs. One was that AD suffered three damaging splits in 1960, 1962 and 1967 which cut deeply into its electoral strength (Coppedge, 1994: 54-56; 98-103) and was to underlie the factionalism and divisions that were to plague AD in the three decades after 1958 (Ellner, 1999: 104). Second, the left turned to armed insurgency political in the period 1960-1967. While the exclusion of the left re-assured business and the military, “...the success of the Pacto de Punto Fijo cost Venezuela the largest guerrilla movement in Latin America” (Przeworski, 1991: 91).

While the basis of political clientelism and the dominance of *political criteria* in distributing rent deployment were laid with pact-making, the threats from right-wing and particularly left-wing groups re-enforced, in the first decade after 1958, the need to use resource rents to build political clientele through *centralized and disciplined and centralized party structures*. The *threats to regime survival* were, according to political analysts, the main factor behind the avoidance of factionalism and tension inherent in the alliance of populist clientelism and the proliferation of subsidies and rules that were to plague the polity in the post-1968 era (Karl, 1986; Levine and Kornblith, 1995). As Levine (1978) points out: “More than any other single factor, the development of a leftist strategy of insurrection in the early 1960’s consolidated democracy by unifying centre

and right around AD in response to a common threat” (p.98). The maintenance of stable macroeconomic rules (e.g. stable fixed exchange rates, low inflation, and fiscal balance) and generally rapid (though slowing) economic growth was a manifestation of the stable, and legitimate central public authority in this period.

#### **4.1.b. Factionalism and Electoral Rivalry (1973-1998)**

The nature of populist clientelism changes gradually after 1973. The *pactismo* of the first decade gave way to electoral party rivalry and factionalism between and within parties. Several political observers note that the very consolidation of the regime, the defeat of the guerrilla movement and thus the decline in threats to the regime reduced the urgency for reaching consensus in the pact-making process (Rey, 1991: 557-567; Levine and Kornblith, 1995: 48-58; Levine and Crisp, 1995: 227-232). The growing importance of factions and factionalism between and within political parties is well documented in Venezuela in the period 1968 until the mid-1990’s (Rey, op cit.; Coppedge, 1994).

There were several distributive conflicts that accompanied the growing factionalism of the pacted democracy. The first concerned increases in labour conflicts. The AD-dominated Congress initiated more radical labour laws and encouraged a more combative labour movement. As a result, both COPEI administrations (1969-1974 and 1979-1984) were plagued by large-scale labour conflict, which increased the polarization and political instability in the country (Gelb and associates, 1988: 289-325; Coppedge, 1994: 34).

The second important distributive conflicts occurred within business conglomerate groups tied to different political factions. The nature of the AD splits in the 1970’s were based on the growing rift between the old guard of AD led by its founder Rómulo Betancourt, who favoured links with the traditional family conglomerates and a more limited state role in production and Carlos Andres Pérez led a faction demanding a more radical state program based on more public enterprise production, and most importantly, the financing of an emerging set of smaller scale entrepreneurs to challenge the economic dominance of the more established family conglomerates. These rifts within AD can indeed be traced back to some of the same groups that led split from AD in the early 1960’s (Ellner, 1999).

Rapid changes in patronage and policy and contestations to those changes were most evident in the first administration of Carlos Andres Pérez (1974-1979). In this period, growing factionalism within AD between the old guard headed by former president Betancourt and the new guard headed by Pérez came to the fore as Pérez used the massive state resources to provide subsidies to and procurement projects for an emerging set of family groups who were well known campaign contributors to the President. (Coppedge, 2000). The economic groups close to the Perez administration were popularly known as the “Twelve Apostles”, many of whom came, like Pérez from the Andean region.

The ties between Pérez and the Apostles were forged largely during his acrimonious power struggle to assume the AD presidential candidacy, when Pérez’s own isolation in AD and lack of control over the party hierarchy convinced him of the necessity of establishing a power and financial base outside the party machinery. For Pérez and his faction of AD, the Apostles represented an attempt to democratize capital by breaking the hegemony of traditional large family business groups.

The third dramatic conflict that characterised the post-1968 era concerned the increasing rejection from important factions of the big business community and the rival political party, COPEI, over growing role of state production in the economy. As noted elsewhere, the Perez administration sought to make state-owned enterprises the focal point of the big push natural resource-based industrialization strategy. The increased role of the state in the so-called “strategic” sectors of the economy (oil, iron ore, steel, petrochemicals, hydroelectric power, bauxite, aluminium) represented an important disruption one of the main political rules of the game which, specified that the state should facilitate private sector investment in industry through tariff protection and subsidized long-run credit. The post-1973 era saw the emergence of the state challenging the private sector in industrial production (Araujo, 1975).

Overall, factionalism led to an increased contestation over patronage, which in turn, fuelled a greater degree of politicization and political polarization in the era of two-party electoral rivalry. If the Pérez faction of AD has wanted to redress the dominance of the old oligarchy, many other factions within AD and COPEI and within the business

associations challenged the rise of new oligarchies in the private sector (the 12 Apostles) and the rise of the state enterprise oligarchy within the state. As such, it is not surprising to find that Ellner (1985: 38-66) finds a breakdown of inter-party agreement in the period 1976-1980 compared with the period 1967-1971. Moreover, other political analysts have argued the increase in political factionalism was accompanied by an increase in whistle-blowing and the use of the corruption scandal in the 1980's and 1990's as a weapon of political competition (Capriles, 1991; Pérez Perdomo, 1995; Karl, 1997: 138-185).

It is worth noting that the *coincidence* of oil nationalisation in 1976 and the very large increase in fiscal resources due to the oil booms undoubtedly upset the political balance in the country. In particular, it could be argued that this coincidence upset the balance of inter-party relations, and thus fuelled increasing factionalism, as competing interest groups vied to capture power in an increasingly state-centred economy. The political pacts were formed and consolidated in the 1960's a period of relatively stable (and even declining) oil export earnings. As a result, the state was more dependent on the private sector investment (including foreign) to achieve economic growth. The oil nationalisation likely lessened the counterweights (that is, checks and balances) to the state, and thus perhaps lessened the 'sense of limits' as to use of discretionary centralised authority. The reduction in the 'sense of limits' probably increased the abuse of power and made corruption less predictable and more contentious as a result.

Finally, the divisive manner in which economic liberalisation was introduced in 1989 further fuelled factionalism within AD and between AD and other parties (see Di John, 2005). The decline in economic growth and increase in poverty led to a further decline in the legitimacy of political parties and the emergence of 'outsider' politicians running on anti-established political party platforms. This led to the formation of unstable multi-party coalitions in the period 1993-1998 that led to a further decline in the continuity of policy-making.

In sum, this section briefly documents the changing nature of the Venezuelan polity in the period 1973-1998. Political pacts and compromises were dominant in the period 1958-1968 though the populist and clientelist nature of these pacts were underlined. The growing factionalism in the Venezuelan polity in the period 1973-1998 was also examined. The fading threats to democratic regime survival in the late



1960's were identified as crucial to the transformation of the polity from a "pacted" centralized populist clientelism into a *competitive* two-party populist clientelism.

#### **4.1.c The emergency of multi-party electoral contestation**

The sub-period period 1993-1998 represents a decline in the two-party hegemony as economic decline and the divisiveness of economic liberalisation lead to dissatisfaction with the two main parties. Several factors led to this. The first (and perhaps most important) factor was the decisions of the two most popular and influential leaders of Venezuela's two main parties, Carlos Andres Perez (AD) in 1989, and Rafael Caldera (COPEI) in 1993, to distance themselves from their parties. Both leaders seized upon crisis situations to re-invent themselves as political outsiders. They did so with political messages and platforms that were the opposite of what they and their respective parties had established over the previous forty years. Dramatic policy switches have been shown to be a de-stabilising event for fragile democracies (Stokes, 1999). The decision of Perez, leader of AD, to implement neo-liberal reforms through the use of non-party technocrats was detrimental in two ways. First, Perez's party-neglecting strategy (Corrales, 2002) accentuated factionalism within AD, and made implementing reforms politically contentious. Many AD party members blocked reforms in Congress and ultimately supported the impeachment of Perez. Many AD members of Congress and of the Central Electoral Committee of AD considered Perez's actions a betrayal on two fronts: one for implementing neo-liberal policies, and two for naming very few AD party members to the Cabinet. Secondly, the launching of a neo-liberal economic went against the set of policies and symbols that defined AD's legitimacy for decades. AD became the fundamental party as a champion of the working class and peasants and built its reputation (however tarnished it had become) by advocating and implementing state-led developmentalism, the anti-imperialist struggles, and economic nationalism. Neo-liberal reforms launched by AD's most established politician divided what AD stood for in the minds of their militants and sympathisers. The loss of AD's party identity most likely contributed to the significant decline in party identification through the 1990's.

Rafael Caldera lost the nomination of the party he founded, COPEI, in 1993, to Oswaldo Alvarez Paz, one of the emerging regional politicians that decentralisation and direct state elections (legislated in 1989) created. Caldera runs and wins with a loose

coalition of small left-wing parties under the umbrella of the new “party” Caldera founds, *Convergencia*. *Convergencia*’s main ally in government would be the Movimiento al Socialismo (MAS), which was an established, but small left-wing party.

The short rise of *Convergencia* had serious consequences for the cohesion and legitimacy of the party system, hitherto controlled by AD and COPEI. First, Caldera’s victory has an important *signalling effect*: the presidency can be obtained by running outside traditional party affiliation. Secondly, Caldera split the COPEI vote, and thus divided what was a solid *centre-right organised alternative* to AD and civil society. COPEI did survive this fracture of its middle class and business support. Thirdly, this period sees a growing proliferation of political parties competing for the presidency and Congress. With the rise of *Convergencia* and the Causa R (a labour union alternative to AD), representation of the centre-left vote becomes divided between these two ‘parties’, AD and MAS at both the national and regional elections. In the period 1973-1988, the number of effective parties averaged 2.5 for the presidency and 3.3 for the Congress. In 1993, the number of effective parties competing for the presidency rises to 5.6 and the number of effective parties in Congress rises to 5.6 though AD and COPEI remain the two largest parties in both chambers.

The very negative and disappointing experience of government in the Caldera administration (1994-1998) further undermined the legitimacy of the party system. Caldera, *was* after all, *trying to govern with political party input* (including a rapprochement with AD), as opposed to Perez, who was convinced that AD, and the party system was generally moribund. Firstly, Caldera inherited one of the worst banking crises in 1994 (see Di John, 2004) and exacerbated the situation by shutting down the largest bank, Banco Latino, which was owned by an economic group close to the previous Perez administration (see Rodriguez, 2002). Secondly, there was a growing incoherence in state ministries as Caldera tried to accommodate the fractious coalition. There was no clear and coherent economic strategy. There were *four* economic plans initiated in Caldera’s government and there was a large rotation of ministers (de Krivoy, 2002).

Secondly, introduction of political decentralization and fiscal federalism in the early 1990’s also contributed to the fragmentation and loss of party discipline in the two main parties in the democratic pact, AD and COPEI. According to Penfold-Becerra

(2002), the post-1989 reforms that initiated direct election of mayors and governors and led to the devolution of state spending to states and municipalities lowered the barrier to entry of marginal and emerging parties and encouraged politicians within the two main parties, AD and COPEI, to develop local alliances and assert autonomy from national party bosses. Decentralisation, in the context of rapid economic reforms and economic crisis, along with relentless media coverage of corruption scandals concerning the state and political parties provided opportunities for marginal but strong parties such as MAS, (but more importantly) embryonic and structurally weak political ‘parties such as Causa R and *Proyecto Venezuela*, and later MBR-200 to compete electorally at the state level.

The emergence of federalism drastically changes the alliance strategies followed by political parties. AD, COPEI and MAS all developed alliance-bloc systems with as a strategy to protect their regional leaderships (Penfold-Becerra, op. cit.) In 1989, AD established alliances with an average of 2.18 parties per state for the 22 gubernatorial elections. By 1998, AD allied with an average of 7.5 parties per state. In 1989, COPEI established an average of 5.57 alliances with parties and 9 by 1998. The electoral premium COPEI obtained from these alliances rose from an average of 7 percent in 1989 to 20.6 percent in 1998. In 1998, Chavez’s party, Movimiento Quinta Republica (MVR) MBR-200, was gaining strength at the regional level and by 1998, on the coat tails of Chavez’s victory, won 17.7 (4) percent of the governorships. What is telling about these regionally-based parties is that, their growth never expanded to the national level in terms of party organisation. In sum, this period is characterised by a growth of multi-party completion and the fragmentation of the party system, which reduced the possibility of effective coordination of government policies

#### **4.1.d The rise of anti-party politics and Growing Polarization of Politics: 1999-2003**

The failure of the political parties to meet economic challenges along with the growing polarization that neo-liberal reforms unleashed opened the space for the emergence of a political outsider. During the electoral campaign of 1998, Hugo Chávez and the MVR campaigned on an anti-corruption, anti-neo-liberal, anti-political establishment discourse that called for the transformation of the political system and the Constitution. The promise for a Constituent Assembly provided the focal point of Chavez’s electoral pledge. Growing levels of poverty and the policy switch to a neo-liberal agenda (in the form of the Agenda

Venezuela) during the Caldera administration severely reduced the popularity and legitimacy of the traditional political parties. The MVR refused to make any alliances with traditional parties; instead the MVR constructed a broad alliance with new and alternative movements, which together became known as the Polo Patriótico (PP, Patriotic Pole). The MVR (the Fifth Republic Movement), the electoral organisation of the MBR-200 was designed to protect the fragile structure of the MBR-200 from the unpredictability of the electoral process (López Maya, 2003). MBR-200 leaders did not want their ideological orientation compromised by the real politics of constructing electoral alliances. The fragility of anti-politics originates here in the divorce of economic and political programs from economic and political organisations.

The rise of Chavez owes much to the effectiveness of his radical anti-political party, anti-corruption and anti-oligarchy discourse. The rise of this radical anti-party politics has generated several important tendencies that have weakened the capacity of the state to revive economic growth. First, the radical nature of the political discourse has led to a growing polarization of politics. The period 2002-2003 saw numerous massive street demonstrations both supporting and resisting the Chavez administration, highlighted by a two-month national strike, which included the nearly complete shutdown of the oil industry. Relations between the state and big business have been more antagonistic than in any time in the democratic era. Second, there has been a de-institutionalization of political organizations. The 1999 Constitution banned financing of political parties, which limits the organisational strength of the opposition. Moreover, the administration has limited the organisational development of its own party, which is itself subject to intense factionalisation. These factors lessen the possibility of consensus-building and cooperation (Monaldi et al. 2004).<sup>13</sup> Third, there has been a purposeful strategy to circumvent state institutions in the delivery of social services.<sup>14</sup> The administration has set up several government missions to improve education, health and housing in shantytowns. However, these missions, funded by resources from the state oil company, are executive-led and bypass state ministries in their planning and implementation phases. This has created a dual state structure that has further led to the fragmentation of the state despite an increase

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<sup>13</sup> The factionalisation of Chavez's own support base can be seen in the high degree of cabinet instability. In the period 1958-1988, cabinet members lasted an average of 2.13 years in their position (in a five year term). In 1989-1993, ministers lasted only 1.4 years, in 1994-1999, it increased to 1.8 years, and in 1999-2004, it declined to 1.3 years (Monaldi et al. 2004: 34)

<sup>14</sup> Moreover, the Chávez administration does not draw on bureaucratic personnel associated with AD and COPEI and thus lose out on some talented pools of labour.

in the centralisation of power. Fourth, there is a lack of any coherent production or export strategy. Much of this has to do with the antagonistic relationship Chavez has maintained vis-à-vis many big business groups (though relations have improved as Chavez has consolidated power after the 2004 referendum) However, another important factor is the ideology of chavismo, which is focused on supporting small-scale businesses and cooperatives through micro credit schemes and, most importantly, the emphasis on social programmes as the cornerstone of government policy. This strategy makes Venezuela more dependent on oil. The next section examines the economic effects of the changes in political settlements and strategies in the period 1958-2003.

#### **4.2 The Economic Effects of Populist Clientelist Pacts and Factionalism in the Context of Big Push Development Strategies: 1973-2003**

The implications of these historical patterns of state-society relations characterized by the populist clientelism, pact-making and increasingly, factionalism and political polarization have been profound. The priority of preserving democracy meant that political party and state leaders needed to accommodate the growing factions of the populist coalition in the pacted democratic era. The viability and long-run weakness of the political pacts were that they provide economic rents to those groups in return for political support. While pacts are offered to protect embryonic democratic institutions from pressures which they may not respond, the feasibility of pacts depend on partners extracting private benefits, or rents from democracy (Przeworski, 1991: 87-94). In effect, pacts were to generate monopoly privileges on the recipients of rents. Extensive rents were awarded to the family conglomerate capitalists in the form of subsidies and protection (Naím and Frances, 1995). The strategy of 'excessive avoidance of conflict' and the need to keep the 'insider' groups quiescent meant that *selectivity* in rent deployment and the *discipline* of rent recipients *declined* significantly.

The first effect of clientelist and populist spending can be seen in the dramatic increase in state employment. The capital-intensive nature of industrialization in Venezuela meant that, in the context of rapid urbanization, high urban unemployment could be destabilising for the regime. The number of non-financial public enterprises grew from less than 30 in 1958 to greater than 400 by 1985 (Segarra, 1985: 132). As indicated in Table 4,

since 1941, when the political parties began to establish their power, the use of employment patronage becomes an important vehicle for building political clientele:

**Table 4. Growth and Shares of Salaried Employment in Venezuela, 1941-1994**

	(number of positions in thousands; share as percent of total)				
	<u>Total</u>	<u>Private</u>	<u>Share (%)</u>	<u>Public</u>	<u>Share(%)</u>
1941	587.1	545.4	92.9	41.7	7.1
1971	1,789.5	1,233.2	68.9	556.3	31.1
1981	2,785.6	1,694.6	60.8	1,091.0	39.2
1988	3,769.7	2,624.7	69.6	1,145.0	30.4
1994	3,663.2	2,491.9	68.0	1,171.3	32.0

Note: salaried employment refers to manual workers, professionals, technicians, clerical and administrative staff. Workers in the informal sector, own-account professionals and owners excluded  
 Source: Banco Central de Venezuela, 1993: Socio-Labour Statistics of Venezuela, 1936-1990 (Tables II-1, II-4; II-5); Betancourt et. al, 1995 (Table A.2-a, p.93-94).

The growth of state salaried employees increases in absolute terms throughout the period 1941-1994. As well, the share of state salaried employees in total salaried employment increases from just 7.1 percent in 1941 to 31.1 percent in 1971 and peaks at 39.2 percent in 1981. The strength of the clientelist patterns of patronage are also evident in the first four years of the economic liberalization period (1989-1994) when retrenchment of a bloated state bureaucracy was one of the goals of the economic reforms. This period does not see any retrenchment at all, rather there is an increase in the absolute number of state employees from 1.14 million in 1988 to 1.17 million in 1994 and the share of state salaried employees increases from 30.4 percent to 32.0 in 1994.

The development of patronage networks to build middle class clientele can also be seen in the significant increase in real current public spending. As indicated in Table 5, the share of public investment in total government spending declines steadily in the period 1950-1998.

**Table 5. Growth and Composition of Real Public Spending in Venezuela 1950-1998**

	Total Real Public Spending (annual average, 1984 Bs, billions)	Composition of Public Spending (investment as share of total, %)
<b>1950-57</b>	22.7	46.8%*
<b>1958-73</b>	54.5	34.5
<b>1974-88</b>	113.5	21.3
<b>1988-98</b>	119.5	17.7

Source: Central Budget Office (OCEPRE); *Annual Fiscal Budget*, various years; Banco Central de Venezuela *Annual Report*, various years

The decline in the share of public investment in total public spending from a peak of 46.8 percent in the period 1950-1957 to a low of 17.7 percent in the period 1989-1998 owes principally to the growth in personnel expenditure in state enterprises (Karl, 1997: 104) and to interest payments on the external debt. In the period 1958-1973, the share of interest payments averaged less than one percent of total current spending. In the period 1974-1988, that share increased to nearly 20 percent, and rose to an average of 25 percent in the period 1999-1998. The main negative economic consequence of the increase in current spending is that the public investment rate could have been much higher given the increase in real public spending over the period 1950-1998.<sup>15</sup>

A second important economic effect of populist clientelist politics on industrial performance was the lack of state disciplining of private or public sector rent recipients in the post-1958 period. Despite the centralising and legitimating effect the threats to the regime played, the splits within AD were to have a longer lasting negative effect on the ability of the state to effectively deploy rents efficiently. The splintering of AD weakened the support base of the natural governing party and its allies in the state. As a result, state decision-makers could not afford to antagonize the core supporters of the regime, which were the political party cadres, the main business groups, and the labour unions. It is thus not surprising that there was little evidence selectivity and targeting or disciplining in the protection, or subsidization process (World Bank, 1990; Naím and Frances, 1995). ISI was as much a political project of buying in support of business groups and employment creation for the urban middle class, as it was an economic project to diversify the production and export composition of the economy.

<sup>15</sup> As a result, public investment in infrastructure declines from 0.48 percent of GDP in the period 1981-1985 to 0.1 percent of GDP in the period 1996-2000 (Rodríguez, 2006).

A third effect of the populist clientelism was the lack of selectivity in the deployment of rents to emerging conglomerate groups. The proliferation of subsidies was a by-product of the politics of state-business relations. The division of business groups along shifting factional lines was to characterize the politics of big business from the early 1970's onwards (Naím, 1989). This factionalism affected the dynamics of state-business relationships in several ways. First, there was a noticeable increase in the fragmentation of business associations, not only between large-scale and smaller firms but also between the larger firms within the same sector (Corrales and Cisneros, 1999; Coppedge, 2000). As a result, industrial restructuring and state-business consultative groups were ineffective in the post-1968 era (Naím and Frances, 1995).<sup>16</sup> A corollary result of this fragmentation was a growth in *particularistic* bargaining between business leaders and political party leaders and ministers in charge of dispensing licenses and subsidies. One of the main channels of influencing was through campaign financing, which became decisive to electoral victory as Venezuelan elections in the era 1973-1993 were among the most expensive in the developing world (Coppedge, 2000). The growing reliance on campaign financing and personal favors in the context of fluid factional changes meant that there was little collective action among business groups, no performance criteria imposed by the state, a growth in the proliferation of licenses and subsidies based on political rather than economic criteria and a growth in the insecurity and risk in the business environment. In an environment where there was insecurity in the policy of government and with little export activity, rapid diversification of factories and products became the most effective means to spread risk among conglomerates in order to endure long-run survival (Naím, 1989). Thus *over-diversification* was generated from both political party strategies to build clientele and from business group defensive strategies to diversify risk in a rapidly changing and uncertain policy environment.

Some evidence to indicate the *lack of selectivity* in industrial policy can be seen in the level of firm entry in the Venezuelan manufacturing sector. Despite the widespread knowledge of the growing relative saturation of the internal market, the period 1961-1998 witnesses a relatively high level of excessive entry into manufacturing as indicated in Tables 6 and 7:

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<sup>16</sup> Pharmaceuticals, textiles and auto parts are three sectors represented three cases where factionalism hindered the development of coherent policies (Naím and Frances, 1995: 178). See Coronil (1998: 237-285) for a detailed discussion of factionalism in the auto parts sector.



**Table 6. Trends in Number and Scale of Firms in Venezuelan Manufacturing, 1961-1998**

(number of establishments)

	<u>total</u>	<u>large (1)</u>	<u>medium-large (2)</u>	<u>medium-small (3)</u>	<u>small (4)</u>
<b>1961</b>	7,531	196	170	949	6,216
<b>1971</b>	6,401	453	386	1,138	4424
<b>1982</b>	10,304	760	649	1,881	7,014
<b>1988</b>	10,238	961	612	1,897	6,768
<b>1992</b>	10,374	961	595	1,969	6,849
<b>1998</b>	11,198	693	486	1,832	8,187
<b>2002</b>	5,930	584	433	1,093	3,820

Note: (1) refers to firms with more than 100 employees; (2) refers to firms with 51-100 employees; (3) refers to firms with 21-50 employees; (4) refers to firms with 5-20 employees

Source: OCEI, *Industrial Survey*, various years

**Table 7. Growth in Number and Scale of Firms in Venezuelan Manufacturing 1961-2002**

(percentage change in number of firms, %)

	<u>total</u>	<u>large (1)</u>	<u>medium-large (2)</u>	<u>medium-small (3)</u>	<u>small (4)</u>
<b>1961-71</b>	-15%	131%	127%	20%	-29%
<b>1971-82</b>	61	68	68	65	69
<b>1982-88</b>	-1	26	-6	1	-4
<b>1988-98</b>	9	-28	-21	-3	21
<b>1998-02</b>	-47	-16	-11	-40	-53

Notes and sources same as previous table

Without an explicit export policy, the increase in the granting of protection licenses and subsidies led to over-diversification of products, which in turn, generated sub-optimal scale economies in plants. Nevertheless, the number of *large-scale firms*, which made up the vast majority of manufacturing investment and assets, and which appropriated most of state credits, increased 131 percent from 1961-1971 and 68 percent from 1971-82! More remarkably, the number of large firms increased 26 percent despite declines in medium-sized firms. The number of large-scale firms declined by 28 percent, the largest drop of any firm category in the liberalisation period (1989-98), indicating the unviable nature of many of these enterprises, which in turn, *suggested that credits and licenses were awarded more on political than economic criteria*. What is also notable is that the increasing polarization and instability of politics in the period 1999-2003 has led to a significant reduction in the number of firms of all sizes, and particularly small enterprises.

Another indicator of the lack of selectivity can be seen in the proliferation of protectionist policies. Historically, import restrictions have played a more important role in protecting domestic manufacturing sectors in Venezuela. There is clear evidence that there has been a significant proliferation of import licenses within sub-sectors over time. Between 1939-1960, 35 tariffs were subject to import licensing (World Bank, 1973: 24). By 1969, the number of tariff items subject to import licenses reached 599 (ibid.). By 1989, the number of tariff items subject to import restrictions increased to 5,749 (World Bank, 1990: Table 2.5A, p.16)! In historical perspective, the period 1920-1958 is characterized by a much more limited extent of protectionism in manufacturing than in the period 1958-1989 (see Di John, 2005, for a discussion of the political economy factors behind more liberal trade policies in the period 1940-57).

The drop in the number of large-scale firms in the era of economic liberalization is indication in the inefficiency of state policies in the disbursement of rents in the period 1971-1988, the weakness of the private sector to invest productively. Simply put, too many large-scale firms with sub-optimal scale and over-diversification of products were subsidized. Table 8 traces the evolution of the decline in the number of firms as classified by firm size and industrial sector in the period 1988-1998.

**Table 8. Evolution of Number and Scale of Firms in Selected Venezuelan Manufacturing Sectors, 1988-98**

(percentage change in number of firms, 1988-96)

Sector	Firm size				
	total	large (1)	medium (2)	medium (3)	small (4)
<b>All manufacturing</b>	<b>9.4%</b>	<b>-28.1%</b>	<b>-20.6%</b>	<b>-3.4%</b>	<b>21.0%</b>
Iron and steel (371)	34.9	-6.7	14.3	25.0	63.2
Nonferrous metals (372)	-23.3	-14.3	57.1	-50.0	-28.6
Printing/publishing (342)	-11.1	-25.7	-55.9	-4.3	-8.3
Chemical products (352)	12.5	-26.2	11.1	-12.5	61.0
Plastics (356)	-27.5	-29.3	-16.3	-28.8	-29.1
Transport equipment (384)	33.3	-36.7	-33.3	-63.1	92.1
Metal products (381)	-1.5	-40.9	-32.6	-5.6	4.2
Textiles(321)	17.1	-44.8	0.0	8.3	65.6
Electrical machinery (383)	1.7	-52.6	-25.8	6.1	46.9
Other manufacturing (390)	-0.6	-56.3	0.0	-44.4	28.0
Wearing and Apparel (322)	-19.0	-64.9	-48.6	-33.8	-6.5
Wood products (331)	66.0	-73.3	-62.5	-4.5	102.8

Note: (1) refers to firms with more than 100 employees; (2) refers to firms with 51-100 employees (3) refers to firms with 21-50 employees; (4) refers to firms with 5-20 employees

Source: OCEI, *Industrial Survey*, various years

In the Table, the sectors are ordered according to the percentage decline in number of *large-scale firms* in the period beginning with the sector where that percentage decline is smallest.

In the period 1988-1996, the overall percentage fall in the number of large-scale firms was 28 percent. The decline in the number of firms is least pronounced among the state-controlled capital-intensive sectors (steel, aluminium, industrial chemicals), which are also the sectors where productivity levels dropped the least in the 1990's (Table 2.4b). This reflects the higher political costs of closing down state-run firms in a clientelist polity but also reflects the greater potential viability of these sectors. Aluminium and steel became the second and fourth largest exports in the country in the 1990's. However, there was a much larger drop in sectors controlled by the *private* owners, reflecting the weakness of private sector productive capacity. The intermediate- capital-intensity sectors (transport equipment, metal products, and electrical machinery) that were more prominently promoted in the 'big push' phase dropped 36.7 percent, 40.9 percent, and 52.6 percent respectively. The clothing sector, a labour-intensive activity, which has experienced among the most fractious relations among producers in the textile business association, also experienced a dramatic decline of 64.9 percent in the number of firms.

It is plausible to argue that the decline in the number of firms could be due to other factors beyond those posited in this section. The fact that many large firms failed after liberalization can be symptomatic of excessive protection or simply of the fact that they had been set up under expectations of growth of the economy that were not realized. The latter explanation is relevant but not inconsistent with my analysis. The creation of firms under very protectionist conditions in the period 1974-1988 was the result of an explicit policy of patronage. The number of large firms actually *increased* (for reasons of political patronage) in the 1980's *despite* the slowdown in manufacturing growth in the 1980's compared to the 1970's. Second, the non-oil growth rate of the economy in the period 1990-98 is actually *greater* than in the 1980's (see Table 1) so the dramatic reduction in the number of large firms can not necessarily be attributed to declines in growth rates alone. What is true is that the reduction in tariff and non-tariff protection in the 1990's (a policy that challenged patronage patterns) weeded out many of these unviable firms though high real interest rates and the banking crisis of 1994 clearly affected the ability of many large firms to survive, particularly in the context of less protection.

The decline in the number of large firms is also consistent with the hypothesis advanced by Bello and Bermúdez (in this volume) that labor legislation became significantly biased against large firms. This explanation is not inconsistent with the analysis presented. While economic liberalization challenged traditional clientelist patronage patterns, not all of the influencing of the state was eliminated in the 1990's. It is well-known that the banking sector was still influential in preventing financial deregulation (De Krivoy, 2002). Similarly, labour unions and their allies (particularly in AD and in Convergencia) remained sufficiently influential to enact labour legislation that increased the labour costs of firms. It is no accident that these laws affected the large firms more in the 1990's because the bulk of the formal sector facing increased international competition resided in large firms. This resulted, as Bermudez and Bello argue in both downsizing and closure of plants. What is not explained (and remains an interesting research topic) is why owners of industrial assets were unable to prevent this unfavorable legislation, or more generally, why the financial sector seemed to be able to protect its interests to a greater degree than the large-scale manufacturing sector. This is a trend that has extended well into the Chávez period.

One of the more damaging effects of the proliferation of unviable firms is the very high and increasing levels of excess capacity in industry maintained throughout the post-1968 period, as indicated in Table 9.

**Table 9. Capacity Utilisation\*: Venezuelan Manufacturing since the mid-1960's**

(actual output as percentage of maximum possible output, percentage)

Sector	<u>Size of firm</u>							
	1966	<u>Large-scale (1)</u>			<u>Medium and small-scale (2)</u>			
		1985-88	1989	1990-91	1966	1985-88	1989	1990-91
All manufacturing (excl. oil refining)	67	60	44	55	48	45	34	38
Food (311)		60	50	64		48	46	45
Textiles(321)		87	70	66		60	50	61
Wearing and Apparel (322)		57	50	45		51	36	36
Wood products (331)		71	45	51		74	70	68
Printing/publishing (342)		75	50	55		57	37	35
Chemicals (351)		77	60	71		65	46	47
Chemical products (352)		44	36	49		53	32	36
Oil Refining (353)		81	60	88		56	46	54
Rubber products (355)		76	74	73		42	41	43
Plastics (356)		62	53	52		48	39	45
Iron and steel (371)		71	62	67		35	18	35
Nonferrous metals (372)		71	70	69		48	55	46
Metal products (381)		51	41	31		35	22	32
Non-electrical machinery (382)		39	35	38		26	22	25
Electrical machinery (383)		54	38	50		35	38	27
Transport equipment (384)		38	12	22		27	26	32
Other manufacturing (390)		47	45	58		53	33	22

Note: maximum capacity refers to output possible given current working levels of human and physical capital; calculations based on yearly surveys with plant managers

Note: (1) refers to firms with more than 100 employees; (2) refers to firms with between 5 and 99 employees

Source: Source: OCEI, *Industrial Survey*, various years

Sustained levels of excess capacity represent dynamic inefficiencies in capital allocation and use. For the years when excess capacity data is available, there has been a noticeable decline in aggregate capacity utilisation from 67 percent in 1966 to 60 percent in the period 1985-88, reaching a low of 44 percent in 1988 and increasing to 55 percent in 1991, still very low considering that year saw the fastest growth rate in manufacturing growth (12.2 percent) of any year in the period 1980-1998.

The sectoral breakdown of excess capacity in large-scale firms is also very revealing of the great costs of the failure of industrial policy under “big push” industrial strategies. Many of the intermediate and capital goods sectors had higher levels of excess capacity than the overall level in manufacturing. For instance, in the period 1985-1988, average manufacturing capacity utilisation was 60 percent whereas many heavy and industrial sectors such as chemical products (44 percent), metal products (51 percent), non-electrical

machinery (39 percent), electoral machinery (54 percent), and transport equipment (38 percent) were considerably lower. In the liberalization period, all of these sectors remained below overall capacity utilization rates with transport equipment falling to 12 and 22 percent capacity utilization in 1990 and 1991. Again, the capacity utilization of the state-dominated sectors, iron and steel and aluminium, while nowhere near full capacity, are better than the overall average. In 1985-1988, 1990 and 1991, capacity utilization in iron and steel was 71, 62, and 67 percent respectively while capacity utilization in aluminium was 71, 70, and 69 percent respectively. Again, exporting in these sectors has been instrumental in keeping utilization rates higher than the average for the manufacturing sector.

The inefficiency of over-diversification can also be seen in the number of unviable small and medium-sized firms that were created in the period 1971-1988.<sup>17</sup> The average capacity utilization rates of the smaller and medium-sized firms were lower than large firms for all the years under consideration: 48 percent in 1966, 45 percent in 1985-1988, 34 percent in 1989 and 38 percent in 1990-1991. Capacity utilization rates within the many of the heavy industrial sectors, such as iron and steel (35 percent), non-ferrous metals (48 percent), metal products (35 percent), non-electoral machinery (26 percent), electoral machinery (35), and transport equipment (27 percent) were either near or far below an already low small and medium-size firm average. In the liberalization period, all of these sectors, except for non-ferrous metals, remained below overall capacity utilization rates in 1990 and 1991.

Finally, the over-diversification of products and the excessive entry of firm into sectors have played an important part in the weakness of technological capacity of firms. For an infant industry characterized by economies of scale, large volumes of sales and output are necessary to spread fixed costs and accumulate learning (Kim and Ma, 1997: 122). As a result, unrestricted or excessive entry leads to the development of too many firms and too small a plant size. Over-diversification becomes a constraint on the development of research and development (R&D) activities since sub-optimal size results in an annual turnover per firm too small to undertake the risks and costs involved in

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<sup>17</sup> The extent to which an entrepreneur or sector is 'over-diversified' is difficult to identify *ex-ante*. I am defining the term broadly to mean a persistence of a significant portion of plants across manufacturing sectors, operating at sub-optimal levels of scale economy during *both* periods of recession and full employment. The widespread occurrence of spare capacity across sectors, which does occur in the context of downturns in demand (i.e. during recessions), does not qualify as 'over-diversification.'

directing resources to R&D. For Venezuela, Viana (1994: 128-129) suggests that the period 1975-1990 is marked by relatively low levels of R&D spending in manufacturing industry in comparison with other Latin American economies, which, on average, direct fewer resource to R&D than late industrialisers in other regions.<sup>18</sup> In a survey of 600 large-scale manufacturing firms (defined as 100 employees or more) conducted in 1992 and 1993, only 19 percent reported that they dedicate any resources to ‘innovative activity’ (which in the survey includes R&D spending, production process assessment, changes in machine design, and product innovation) in the period 1980-1992 compared to the Latin American average of 27.9 over the same period (ibid.). Viana also noted that the limited degree of endogenous technological capacity owes mainly to small size of firms, which limits the possibility of most firms to assume the costs and risks of R&D spending (ibid.: 175). The effect of political fragmentation and uncertainty also has inhibited the development of long-run technical cooperation, or cooperation in issues related to the “supply chain” between firms in the same sector. As a result, there is no evidence of significant cooperation between firms and state-run technology institutes (ibid. 165-168).<sup>19</sup>

A fifth negative effect of factionalism is the increase in the perception of risk of industrial investors. The increasing risk that accompanied factionalism thus saw a long-run reduction within the private banking system of commercial loans to industry. Consider Table 10.

**Table 10. Venezuelan Commercial Bank Loans to Industry, 1963-1998**

(average annual loans to industry as share of total loans, %)	
<b>1963-73</b>	29.6%
<b>1974-88</b>	19.0
<b>1989-98</b>	16.8

Source: Ministry of Finance, Superintendence of Banks, *Data Base*, various years.

<sup>18</sup> Amsden (2001: 277-280) identifies one of the main problems of manufacturing competitiveness in Latin America in comparison to East Asian economies and India owes to relatively low levels of scientific research and patenting, a relatively low share of gross national product accounted for by science and technology and a relatively low share of R&D spending by the private sector and a relatively low share of R&D spending accounted for by the manufacturing sectors.

<sup>19</sup> Only 10 out of 600 firms reported that they maintained long-run relations with state-run technology institutes (Viana, op. cit: 149).

The share of commercial loans to industry as a percentage of loans to all sectors declines steadily over the period 1963-1998, and reaches a low of 16.8 percent in the period 1989-1998. The longer-gestation and thus higher risk of industrial ventures was becoming less attractive over time. This result is consistent with the general collapse of private sector investment in the non-oil economy in the period 1980-1998. Here again, economic liberalization has not arrested the long-run increase in factionalism and related distributive conflicts.

The main contention of this section is that the failure of the state to impose conditions and selectivity in rent deployment and coordinate investment efforts will be more costly in the “big push” and advanced stage of ISI. Table 11 summarizes the periodisation of political strategies and economic strategies in the period 1958-1998 and their broad economic effects.



**Table 11. An Overview of Evolution of Regime Type, Development Policies and Economic Outcomes in Venezuela, 1958-1998**

Period	Regime type/Main political trends and settlements	Industrial Policy Orientation	Stage of ISI/Dominant Technologies	Main economic results
1958-1973	<p>Pacted democracy; less radical form of populist clientelism</p> <p>2) political pacts begin to break down in 1968</p>	<p>1) State-led industrialization: blanket protection of industry through import quotas and tariffs and substantial increase in industrial credit.</p> <p>2) Manufacturing investment still dominated by private sector conglomerates</p>	<p>Transition period to more advanced stage of ISI (1960-1973):</p> <p>Scale economies and exports become decisive to manufacturing productivity and output growth.</p>	<p>1) Rapid, but slowing growth in non-oil and manufacturing growth</p> <p>2) low inflation</p>
1973-1993	<p>1) Two-party electoral rivalry within democratic pact</p> <p>2) Growth in factionalism and fragmentation of populist clientelism</p>	<p>1) Continued blanket protections; proliferation of subsidies.</p> <p>2) Public enterprises in heavy natural-resource-based industry dominate manufacturing investments.</p> <p>3) Multiple exchange rate system (RECADI, 1984-1988) generates large subsidies for firms with political contacts and/or import licenses.</p>	<p>Advanced stage of ISI; “big push” state-led natural-resource-based industrialization strategy 1974-1985.</p>	<p>1) Non-oil and manufacturing growth stagnates;</p> <p>2) proliferation of public enterprises;</p> <p>3) excessive entry into manufacturing sectors;</p> <p>4) little discipline of state or private subsidy recipients;</p> <p>5) capital flight-cum debt crisis (1974-85) indication of massive macro co-ordination failures;</p> <p>6) moderate and growing inflation</p>
1993-1998	<p>1) Multi-party electoral rivalry; 2) decline of AD and COPEI;</p> <p>3) rise of political outsiders and increase in anti-political party radical populism</p>	<p>1) Radical trade and financial liberalization;</p> <p>2) Partial privatisation of steel and aluminium state-owned enterprises.</p>	<p>Advanced stage of ISI continues; capital-intensive natural resource-based industries remain most productive relative to the USA level.</p>	<p>1) manufacturing growth, productivity and investment collapse;</p> <p>2) sharp decrease in number of large-scale manufacturing firms;</p> <p>3) banking crisis (1994)</p> <p>5) high inflation;</p> <p>6) capital flight</p>
1999-2003	<p>Rise in anti-party politics, centralization of executive power; polarization of politics</p>	<p>1) Little attention paid to industrial strategy; reversal of oil opening policy;</p> <p>2) introduction of capital controls;</p> <p>3) data collection of industrial survey curtailed</p>	<p>Advanced stage of ISI continues; capital-intensive natural resource-based industries remain most productive relative to the USA level.</p>	<p>1) collapse in non-oil and manufacturing growth;</p> <p>2) increase in unemployment</p>

The negative effect of populist clientelism on state efficiency in rent deployment is reflected in the productivity performance of the manufacturing sector over time. Productivity growth lies at the heart of dynamic and competitive growth. The *incompatibility* of the populist clientelism with more demanding development strategies ultimately were reflected in declines in manufacturing growth from 1980 and varying percentage declines in productivity levels of all Venezuelan manufacturing sectors compared with the US and other more successful late developers from the mid-1980's (Di John, 2004: 34-53).

In sum, this section has attempted to show the economic effects of the incompatibility between the big push development strategies, the second stage of ISI in the context of populist clientelist political settlements that exhibit increasing factionalism. Manifestations of this incompatibility included declining legitimacy of economic policies, leading to the massive capital flight crisis in the period 1974-1985. As well, inefficient rent deployment was manifested in a decline in selectivity in industrial subsidisation, a lack of discipline of rent recipients. The costliness of ineffective rent deployment was magnified in the context of the second stage of ISI and big push strategies. These costs were manifested through significant productivity and growth declines in manufacturing during the 1980's and 1990's.

## **Conclusion**

The inefficiency of centralized rent deployment in Venezuela in the period 1980-2003 owes less to natural resource abundance *per se* than to an incompatibility of economic and political strategies. The argument does not deny that sudden and large inflows of oil revenues in the 1970's had a negative effect on economic management in Venezuela; rather it claims that a longer-run view of Venezuelan economic history suggests that oil abundance has been compatible with cycles of growth *and* stagnation.

Due to the abundance of oil, Venezuela was long considered an "exceptional" case in the context of twentieth century Latin American development. This paper revises that conclusion. Firstly, while Venezuela did not manage the sudden inflows efficiently in the 1970's, no Latin American economy has been able to manage sudden capital inflows without undergoing substantial macroeconomic destabilisation (Palma, 1998). The

slowdown in Venezuela's manufacturing growth in the period 1980-2003 is part of a wider slowdown in growth throughout Latin America in the same period. The wider Latin American experience, as well as the fact that a *very small set of latecomers have actually sustained catch-up*, suggests that patterns of failure in Venezuela may not be so "exceptional" after all.

Explaining the growth slowdown as a mismatch of economic strategy and historically specific political strategies improves upon existing explanations that do emphasize political institutions and/or distributive struggles as the source of Venezuela's poor economic performance. The political science literature focuses on the extent to which Venezuela's political party system and state institutions became more factionalised, exclusionary, rigid and corrupt over time. However, the focus on political institutions is unable to explain why some more authoritarian/exclusionary (and similarly corrupt) regimes grew faster than Venezuela in the period 1980-2003. The focus placed in the Venezuelan political science literature on the level of political competition and the extent to which demands are channelled through democratic procedures may be less important issue than *who is capturing the state and for what ends*.

The political analyses on the party system do not examine whether maintaining legitimate rule is affected by the changing nature of the economic development strategy. If different strategies require different levels of selectivity and concentration of economic and political power to be initiated and consolidated, then the problem of legitimacy and inclusiveness cannot be adequately examined as isolated from economic strategy. If economists often fail to incorporate politics when examining the state intervention, then political scientists often fail to examine the political challenges that different technologies and stages of development generate. The growing factionalism of the Venezuelan polity, I argued, was particularly costly in terms of the efficiency of investment *because* it occurred in the context of the more advanced stage of development, which requires a greater centralisation and coordination of investment. The growing proliferation of subsidies and licenses to Venezuelan firms in the period 1965-1998 also suggested that the Venezuelan state, far from being exclusionary, was *too inclusionary and unselective* in its patronage patterns for it to produce an effective industrial strategy in the more advanced stage of ISI. Without examining the mechanisms through which conflict emerges, there is little scope for identifying which changes in either economic strategy or political

settlements are needed to bring the polity closer to a less conflict-ridden bargaining outcome amongst relevant political actors.

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**CHAPTER 13:**

**Explaining Chavismo:**

The Unexpected Alliance of Radical Leftists and the Military  
in Venezuela since the late 1990s

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**Abstract:** Sociological explanations for the rise of Hugo Chávez in Venezuela which emphasize the population's unaddressed economic needs and widespread desire for change in the 1990s, are insufficient to understand the political coalition built by Chávez. At best, these theories account for only the demand side, not the supply side: they cannot explain easily the availability of such a large pool of radical leftist civilians and nationalist military willing to collaborate to form a government since 1999. Elsewhere in Latin America at the time, the radical left was neither as large nor as willing to side with the military. Sociological explanations cannot account either for the rise of polarized politics, growing corruption, and political discrimination under Chávez. This paper first reviews some of these sociological theories and then offers an explanation for the supply side of chavismo. Rather than positing the hermetic aspects of the political institutions prior to Chávez, as much of the literature on Venezuela tends to do, this paper suggests that the best way to explain the supply side of chavismo is to appreciate the degree of openness of so many political institutions in Venezuelan.

This paper addresses two questions. First, what explains the rise of a leftist-military coalition in Venezuela in 1998, bringing Hugo Chávez to office? Second, how has this coalition evolved in its first eight years in office?

Scholars who study Venezuelan politics disagree about the best label to describe the Hugo Chávez administration (1999-present): personalistic, popular, populist, pro-poor, revolutionary, participatory, socialist, Castroite, fascist, competitive authoritarian, soft-authoritarian, third-world oriented, hybrid, statist, polarizing, oil-addicted, ceasaristic, a sort of Latin American Milošević, even political carnivour. Despite this variety of labels, there is nonetheless agreement that, at the very least, chavismo consists since its outset of a political alliance of radical-leftist civilians and the military (Ellner 2001:9). Chávez has received most political advice from, and staffed his government with, individuals who have an extreme-leftist past, a military past, or both. The Chávez movement is, if nothing else, a marriage of radicals and officers.

**Comment [JC1]:** R.L. Millet, in Millet and Gold-Biss 1996 even describe this as the "superación" del praetorianism.

What explains this marriage? Leftist-military alliances are not new in Latin America (Remmer 1991), dating back to Cuba in the 1930s, when a young sargeant, Fulgencio Batista, sought to dominate Cuban politics by courting radical leftist civilians (first, student leaders, and then, Communists). However, since the Omar Torrijos administration in Panama (1968-1978), no other major episode of electorally successful leftist-civilian-military alliances occurred in Latin America until Chávez. If anything, the tendency in the region was for the military to distance itself from the political sphere (Bustamante 1998), and the left, from the military. Although Chávez-style politicians have emerged elsewhere in Latin America in the 2000s (mostly in Ecuador and Bolivia), back in the late 1990s the Chávez model of uniting leftist civilians and military officials was an odd occurrence in the region.

That Chávez has succeeded in putting together a leftist-military coalition does not mean that this has been easy. Friction within the coalition, both between and within the poles, has always existed. But since 1999, Chávez has always been able to form cabinets in which leftist civilians and the military work side by side. While the non-leftist military (the rebels of the Plaza de Altamira, the participants of the 2002 coup, and the many “*dados-de-baja*”) as well as the non-authoritarian left (e.g., the MAS) have abandoned the government, this alliance has survived to this day.

To understand the rise of the leftist-civilian military coalition that Chávez cobbled together in 1998-99, one has to understand the story of incorporation of non-dominant political groups in Venezuelan politics starting in the 1960s. Most of the scholarship seeking to explain *chavismo* argues that the previous regime, the so-called “Fourth Republic,” or the “Punto Fijo Regime,” suffered from excessively exclusionary politics: political institutions became too rigid to give entry to new, smaller, non-dominant political forces, which led to accumulated resentment, inability to implement necessary reforms, and in the end, an abrupt radical change by unincorporated sectors. Chávez was, above all, an institutional barrier-breaker, propelled by a mushrooming civil society that felt trapped by non-accommodating institutions. In this paper, I seek to challenge the view of pre-existing institutional closure. Rather than a completely foreclosed political environment, these non-dominant forces, which I will call “small opposition forces” (*SOFs*), enjoyed access to multiple institutions under the previous regime. Until the 1990s, the radical left was not governing in Venezuela, but it was not entirely homeless, and many of its institutional homes provided a propitious growth environment. These institutions were the universities (starting in the late 1960s), the military (starting in the late 1970s), institutions of civil society such as small leftist parties and neighborhood associations (starting in the 1980s), and state institutions such as cabinet office, legislative seats, governorships and mayoralties (starting in the 1990s). It was this degree of institutional opening that allowed *SOFs* to

grow in numbers, and more important, to be exempted from the need to evolve ideologically, which explains the prevalence of radicalism on the left and leftism within the military.

This chapter thus applies the argument that I develop in Corrales (2007) that the rise of the left in Latin America in the 2000s is the result of both gripes (i.e., complaints about the socioeconomic status quo), as the old structuralists argue, *as well as* mobilizing opportunities. I agree with scholars on Venezuela who virtually unanimously argue that citizens by the late 1990s had ample reasons to vote for an anti-status quo option, but I disagree with those who underplay the prevalence of widespread institutional openings during the Punto Fijo. The rise of a radical left in Venezuela was the result of prior institutional opening, not closure.

The second question, how did the chavista coalition evolve over time, requires looking at what scholars often call coalition-building “toolkits.” Specifically, presidential coalitions depend on the system of incentives and penalties that the state deploys to neutralize dissenters and coopt allies. In keeping the alliance together, Chávez has had to deal with two different sources of tensions within his initial coalition: 1) the defection of moderate leftists, and 2) divisions within the military. To deal with these cracks, Chávez has deployed both tangible and intangible political resources. Most scholars understand the role that tangible state-based resources (e.g., spending, government jobs, state contracts) play in sealing these cracks. I instead want to focus on intangible political resources: deliberate use of 1) polarization; 2) corruption and impunity for supporters; and 3) job discrimination for opponents. These three political resources are the glue that hold Chávez’s radical-military alliance in place. I will show why the chavista coalition has come to necessitate these tangible and intangible resources to stay in office.

This paper, therefore, wishes to move the debate about chavismo away from demand-side theories, which treat Chávez’s radical policies as responses to what the

**Comment [JC2]:** Insert theory. Adaptation = environmental shock, internal organization, and exposure. Also, discuss the radicalism consists of: endogenous dev, pro concentration of power, pro the military. Insert notion of institutional incubators.

majorities presumably want. Invoking the demand side is insufficient: it explains the desire for a change in 1999, but not why the change supplied was as radical, as militaristic, and as reliant on polarization, corruption, and discrimination as *chavismo* has been.

#### I. A look at the *first* chavistas

How should one study the composition of the *chavista* coalition, especially the leadership? What circles of Venezuelan society does Chávez draw from in order to appoint leaders? To answer these questions, I decided to look at the socioeconomic profile of the first set of leaders who ran under the *Movimiento Quinta República* (MVR), the party formed by Chávez to run for office in 1998. In an innovative study of the origins of Peronism in Argentina, Aelo (2004) follows exactly this strategy. He looks at the political background of the first set of candidates in the province of Buenos Aires running for the general elections of 1946 under the Peronist banner. This exercise allows Aelo to determine the exact origin of Argentina's new "*élite dirigente*"—whether they were mostly newcomers, conservative, socialist, radicals, renovators, laborists, etc. Looking at the profile of the first set of leaders in an election is a window into both the groups that support a new leader and the sectors that the new leader draws allies from.

Following Aelo, Table 1 provides the political/professional background of every delegate who participated in the 1999 Constituent Assembly. Because the *Chavista* candidates were very carefully and strategically selected by the incumbent party, and more specifically, the Executive branch (Penfold 1999; Hawkins 2003; Kornblith 2003), the incumbent's list reveals the sectors that were supporting Chávez, and vice versa. The table reveals, first, that the three largest professions represented were: professional politicians (46.72 percent), military (15.57 percent), and university professors (19.67 percent). If one includes the professional politicians who also taught part-time at the university, the total percentage for university professors is 32.78 percent. Second, there were two careers that

were significantly underrepresented: labor leaders and economists. In fact, among the chavistas, there were more former guerrillas (3) than economists (2). The presence of so many university professors, military individuals, and career politicians suggests that Chávez is drawing from a pool of Venezuelan citizens that is not entirely composed of newcomers (given the large number of career politicians) or non-elites (given the large number of attorneys and high-ranking soldiers). Furthermore, Chávez is drawing significantly from university intellectuals (given the large numbers of university professors), but not exactly economists.

I will show that this particular pool—anti-status quo politicians, intellectuals, and soldiers—was large in Venezuela by the late 1990s. Rather than being marginalized and excluded, these groups were well protected by key institutions from the Punto Fijo regime. In fact, these actors came from some of the most privileged institutions of the Punto Fijo Regime. But before developing these points, I briefly review some of the alternative theories that seek to explain the rise of chavismo.

## II. Rival Explanations<sup>1</sup>

### A. Social Immiseration

The simplest explanation for the rise of chavismo focuses on the plight of the poor. Gott (2000), for example, spends many pages documenting the depth of poverty in Venezuela prior to the rise Chávez, implying that the former led to the latter. Kenneth Roberts (2003) does an even better job at conceptualizing the grave social changes that took place in Venezuela since 1982: 1) economic immiseration, 2) growing inequality, 3) expansion of informality in labor markets, and 4) declining capacity of labor unions to

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<sup>1</sup> This section draws from Corrales (2005).



represent workers. Economic hardship *combined with* a labor representation crisis led to protest politics, and thus, to the rise of a leftist replacement.

The problem with a strictly structural-sociological account as an explanation for chavismo, even supplemented with a focus on labor politics, is not that it is wrong, but that it is indeterminate. It focuses mostly on the demand side (why were citizens willing to vote for messianic politics), but not on the supply side (why was the solution delivered of the leftist-military variety). To be sure, a surplus of poor people explains the Chávez election in 1998, but also the election of (at least) the two previous presidents—each ideologically different. Since Venezuela has had surplus poverty since the 1980s, all presidents by necessity must have obtained much of the vote of the poor to beat their rivals. Roberts' characterization of Venezuela in 1998 could very well apply to Venezuela ten years before, or for that matter, Latin America as a whole in the late 1980s and early 1990s. Yet, it was only in Venezuela in the late 1990s that there was an electoral rise of a radical leftist/military government.

#### B. Institutional Closure

Other scholars explain Chavismo by looking at the political institutions of the preceding regime and argue that Chávez mobilized groups that felt unrepresented by existing institutions. There is no question that the two most significant political institutions--parties and labor unions—were suffering from a crisis of representation, losing voters in large numbers since the 1980s. A key question to ask about institutions is, why did the traditional parties cease being an option in the mid 1990s, whereas the radical left managed to capture this vacuum by first aligning itself with an old establishment figure such as Rafael Caldera (1994-1999) and then with the military under Chávez?

The answer in the literature goes something like this. Venezuela, like the rest of the region, experienced the typical collapse of its statist economic model in the early 1980s (Naim and Piñango 1984). Because the political parties were unable to renew themselves (Corrales 2002; Ellner 2003; Molina 2004; Myers 2004), they were unable to provide appropriate policy responses to the economic crises (Kelly and Palma 2004) and to let go of their special privileges (Hellinger 2003). Voters responded as they have responded elsewhere in the region when macroeconomic instability remained unresolved: they blamed the incumbents and existing political institutions (see Remmer 2003 for the region; Gil Yepes 2004 for Venezuela; Myers 2007) defected toward smaller parties, which in Venezuela, were all on the left (Molina 2004), and those who did not find these parties appealing formed or joined institutions of civil society ((Canache 2004; Salamanca 2004), Márquez, García-Guadilla).

The rise of Chávez is thus the result of two different institutional developments—the rise of extreme, formerly marginal parties at the expense of traditional parties and the momentous rise of defiant civic organizations that were more antipartisan than nonpartisan. By promising to carry out this displacement—in collaboration with the military—Chávez was able to win the support of these two new societal blocks.

The question still remains as to why traditional parties failed to offer appropriate policy responses to economic crises in the 1990s. Elsewhere I have argued that the lack of democratic, competitive primaries within the traditional parties, especially AD, created party oligarchies that blocked necessary party adaptation in the early 1990s (Corrales 2002). Parties were unable to incorporate new knowledge and new blood. What is harder to answer is why the Caldera administration, which was supported by presumably more internally democratic parties such as the MAS also failed. The explanation could very well be a different variable altogether: the post-1992 rise of party fragmentation—or more broadly, an expansion in the number of veto players, as Monaldi et al. (2005) well argue.

We know that party fragmentation and the multiplication of veto players hinders economic governance (World Bank 2002; IDB 2005). A more adept leader, perhaps one less tied to Venezuela's former bipartisanship, might have been able to manage party fragmentation better (DiJohn 2004). But President Rafael Caldera (1994-1999), who worked all his life to institutionalize bipartisan rule in Venezuela, was clearly not the right politician for multiparty Venezuela.

At this point, the argument about institutional closure has changed. According to this view, the system no longer appears as hermetically closed, but as institutionally fluid with greater avenues for inclusion. It could very well be, as some theories argue, that political exclusion breeds radicalism and anti-status quo sentiments. But it does not follow that political inclusion is necessarily an antidote against radicalism. In Venezuela, as will be shown, political inclusion actually served as an incubator of radical political ideologies and activists.

### C. Extreme or Aborted Neoliberalism?

Another argument about the rise of the left in Venezuela focuses on the rise of neoliberalism in 1990s. According to this view, chavismo can be construed as the expected backlash against the neoliberal policies and forces of the 1990s. Forcefully suggested by Przeworski (1991), a good example of this argument applied to Venezuela is perhaps Buxton (2003). In her account, Venezuela suffered the ravages of orthodox neoliberal adjustment, first under Carlos Andrés Pérez between 1989 and 1992 and then under Rafael Caldera between 1996 and 1998. She echoes the typical view on the left that market reforms aggravate poverty. The evidence relies on the uncontested findings that the 1990s was characterized by de-industrialization, which led to "growing fragmentation and informalisation" of labor markets, which in turn, produced the breeding ground for "populist/outsider strategies" (see DiJohn 2004).

Yet, the blame-neoliberalism argument seems overstated. In terms of fiscal adjustment (i.e., efforts to reduce spending to restore macroeconomic balance), there is no question that the Venezuelan state had aggressive attempts, in at least three occasions since 1981. But in terms of actual implementation of market-oriented structural reforms, Venezuela is a non-achiever. In virtually no serious index of neoliberalism does Venezuela appear as an accomplished case. Compared to the most sweeping liberalizers in the region (Argentina, Chile, Bolivia, Peru, Mexico), Venezuela's experience with market reforms was modest, at best. The reforms were haphazard, incoherent, and incomplete. There was trade liberalization, but not banking liberalization. There were some privatizations, but only in a few sectors. There were no serious pension, labor, fiscal, and education reforms. Many old statist structures remained in unreformed.

More so than neoliberalism per se, it's the "decline" of private sector investment since its peak in the early 1980s and the "instability and inefficiency" of public sector investment that has generated high unemployment, and thus poverty (Freije in Márquez and Piñango 2003:172). And this decline was probably the result of factors other than neoliberalism (political instability in 1989 and 1992-93, persistent inflation, banking crisis 1994-96, and the exogenous shocks of 1997-99). To be sure, Pérez and Caldera achieved trade opening and some grand privatizations, but the degree of statism, dependence on oil, protectionism, market rigidities, fiscal volatility, inflation and rent-seeking remained high through the 1990s. Nelson Ortiz (2004) adds that, as a result of the 1994-1996 banking crisis and the state-heavy response to it, the Venezuelan private sector actually became weaker and smaller. If so, it is hard to make the case, as does Chávez, that Venezuela in the 1990s became dominated by neoliberal barons and forces. Venezuela's political economy in the 1990s is best described as a case of lingering statism, perplexing policy incoherence, domestic financial incoherence and inability to stabilize oil income streams.

A different version of the blame-neoliberalism argument is to stress precisely the negative effects of erratic (as opposed to full) implementation of market reforms. Venezuela between 1983 and 1998 found itself in vicious cycle of aborted market reforms. Governments would launch a relatively severe adjustment package only to relax implementation a few years, sometimes months, later, culminating in yet another economic collapse and prompting the subsequent administration to start **again**. I have called this the ax-relax-collapse cycle (Corrales 2000). It started with Herrera Campíns, and was repeated by every administration since then. The result of erratic neoliberalism from 1983 to 1998 was that Venezuela ended with the worse of both worlds: the adjustment periods produced the negative impact on low-income groups that is typical of adjustment programs at first (recessions, declines in social spending) and the subsequent abandoning of the reforms precluded any of the economic gains that could have helped low-income groups (return of sustained growth, greater private investment and thus private sector employment, lower inflation and thus greater purchasing power for low-income groups).

**Comment [JC3]:** Find data to show that adj. in Venezuela was larger than elsewhere in the region, because the collapse in oil was so significant, but it was still insufficient. Francisco Rodríguez has the way to do this.

Figure 2 provides some evidence on behalf of the aborted-reforms argument. The figure shows, first, volatility of fiscal spending since the 1980s, which is consistent with the notion of repeated cycles of aborted reforms. Second, the figure shows how poverty simply deteriorates (in the 1980s) and fails to improve (in the 1990s), which is also consistent with the argument about obtaining the worse of both worlds. The figure justifies asking the counterfactual—what would have happened to poverty in Venezuela if the programs intended by Pérez (1989-91) and Caldera (1996-98) to stabilize and diversify the economy would have been given enough time.

Yet, blaming neoliberalism—even if stated in terms of cycles of aborted versus completed reforms—only provides a partial answer to the question of the origins of chavismo: it explains the demand side but not the supply side. It can explain the overwhelming demand across sectors for a change in politics, but it does not explain the

actual change provided. Why did the solution that emerged in 1999 come in the form of a leftist-military alliance, as opposed to a social-market leftist government (à la Concertación in Chile), a moderate leftist-labor alliance (à la Lula in Brazil), a center-right alliance (à la Vicente Fox in Mexico), or a right-wing military alliance (à la Fujimori in Peru). We still need an explanation for the strength of the supply of the radical left and its bridges with the military in Venezuela.

### III. The incorporation of *SOF* since the 1960s

To understand the leftist-military alliance cobbled together by Chávez, it is necessary to revisit the story of how the Venezuelan radical left changed from being an insubordinate actor in the 1960s to an integrated force within the institutions of the Punto Fijo regime. This story of incorporation is worth retelling since recent scholarship on Venezuela, which has focused on the suffocating effects of partyarchy, has developed some amnesia about it.

It's well known that the Punto Fijo regime founding documents (both the set of pacts and the constitution of 1961) did little to include the Venezuelan radical left. This occurred for two reasons. First, the radical left in the late 1950s and early 1960s was tiny (gathering less than 4 percent of the electorate) and thus had no bargaining leverage vis-à-vis the three larger parties (AD, Copei and the URD) (Corrales 2001). Second, at least one of the most important demands of the radical left was completely objectionable to all three large parties. AD objected to the radical left's pro-Soviet/Cuban foreign policy; the opposition parties, Copei and the URD, objected to the radical left's call for centralization of power in the hands of the Executive; and all three parties objected to the radical left's call for banning the private sector. Because the radical left was excluded by the Punto Fijo

regime founding institutions, sectors of the radical left turned to violence, plunging Venezuela into an armed struggle that lasted until 1968.

However, the important story of the *SOFs* and the radical left since 1968 is their gradual transition from exclusion to incorporation. Unlike other Latin American countries, where the radical left was repressed through brutal coercion (including the imposition of authoritarianism), in Venezuela the democratic regime reached an accord with the radical left in the late 1960s. The regime opened up opportunities of incorporation for the radical left in return for the left's vow to abandon the armed struggle.

There is no question that the top political offices in Venezuela remained off-limit to the radical left (e.g., the Presidency, management positions in state-owned enterprises, leadership positions in labor federations, seats in advisory boards to the president). These were reserved for the large parties (Coppedge 1994), and large interest groups (Crisp 2000). But there were a number of secondary institutions that became quite accessible, and which in fact, the radical left made its home (e.g., small parties, small unions, small neighborhood associations, some media venues, some regions, even the military, albeit not always at the highest levels) (Ellner 1993). Landmarks in the political incorporation of the radical left were the legalization of the Communist Party in 1969, the legalization of *Movimiento de Izquierda Revolucionaria* in 1973, and the founding of the *Movimiento al Socialismo* (MAS) by former guerrilla leader Teodoro Petkoff in 1971 (a spinoff of the Communist Party). Even with the leading parties, leftist factions always found homes. By 1973, for instance, COPEI was internally divided between a more centrist forces (the so-called "Araguatos), a left-leaning faction (the "Avanzados"), and an even more radical wing (the "Astronauts). President Luis Herrera Campíns came from the leftist Avanzado faction of Copei (Ellner 2007:111, 124).

The combination of economic growth and government-sponsored institutional openings after the 1960s contributed to a change of attitude by the radical left in the

1970s—from insurrection to integration-seeking (Ellner 1993:140-143). The MAS developed an official policy of “occasional support for AD and Copei,” intended to gain converts from those parties (Ellner 1986:93). Both the MAS and the PCV supported Pérez’s economic policies during his first administration. Leaders of the radical left even became players at the highest levels of politics in the Punto Fijo Republic: the number of presidential candidates doubled from 1968 to 1973, mostly with candidates from the left. Their presence in Congress increased. When Carlos Andrés Pérez faced charges of corruption in, important leftist legislators (e.g., José Vicente Rangel, then from the PCV and eventually Chávez’s second hand) refused to vote against Pérez, arguing that accusations against Pérez were rightist-inspired reprisals for progressive policies (Ellner 2007:120). The MAS was the official ruling party under Caldera’s second term, and two of his closest economic officials, Teodoro Petkoff and Luis Raúl Matos Azócar were self-proclaimed “hombres de izquierda.”

#### A. Universities

Another crucial Venezuelan institution that *SOFs* were able to colonize was the university system, which, under the Punto Fijo regime became one of the largest, most resource-endowed, anti-status quo<sup>2</sup>, and autonomous institutions in Venezuela. A good indicator of the importance of this institution is the level of resources devoted to it. In the 1970s, Venezuela conducted one of the largest expansion in spending on higher education in the region (Figure 4). Between 1969 and 1974, public university enrollment expanded by a phenomenal 72 percent, compared to a 38 percent and a 23 percent expansion in

**Comment [ACPC4]:** Serial comma inconsistency

<sup>2</sup> For an account of leftist (and right-wing) intellectuals at Venezuelan universities publishing attacks of the Punto Fijo regime prior to 1999, see Hillman (2004). Leftists at national universities were heavily divided between those who supported the small radical left (i.e., the so-called “organized left”) and independent leftists (see Ellner 1986:98).



secondary and primary education (Albornoz 1977). Even in the economically-depressed mid 1990s, Venezuela still devoted 6.8 percent of its national budget to higher education—the highest in Latin America, whose average was 3.4 percent (de Moura Castro and Levy 2000). In the 1980s and 1990s, university education absorbed 38 percent of the budget of the Ministry of Education (World Bank 2001).

Although total enrollment increased by 60 percent from 1986 to 1996 (*ibid*), total spending was still high relative to enrolment levels (see Figure 5). By the end of the 1990s, there were 144 institutions of higher learning, of which 41 were universities. A culture of state subsidies set in to the point that everyone in the university system expected every service to be free. And in fact, most services were free or highly subsidized.<sup>3</sup>

A number of university-based institutions permitted *SOFs* to enter and establish a stronghold on the university. First, the university system did not have strict academic requirements for faculty appointments. In the early 2000s, only 6.6 percent of faculty had Ph.D.s, compared to 19 percent in Brazil. Second, the pension system ensured that older professors could stick around. Although faculty could retire after only 25 years of service at a 100 percent salary, tax-free, many of them are re-hired by either their own institutions or some other academic center. This allowed some “retired” faculty to teach and collect both a salary and a pension. In 1999, almost 24 percent of the personnel at the universities was “retired” (Albornoz 2003:125). Third, at the student level, the universities did not impose restrictions on times in residence, so political activists could prolong their stay on campus beyond the average time it took to complete a degree. Of the students who

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<sup>3</sup> Food, for instance, is almost free; the cost of three meals for every weekday of the academic year was less than a dollar. Many of these subsidies were targeted to the middle classes: parking a car under a covered lot costs US\$1 per month, whereas the average for a similar parking garage elsewhere in Caracas was US\$1 for two hours (Albornoz, 2003:67).

enrolled at the university in 1989, only 40.5 percent graduated within five years (World Bank 2001).<sup>4</sup>

Venezuela's universities became large, state-funded, relatively autonomous “offsprings” of the Punto Fijo regime that *SOFs* could capture, as in fact they did. Venezuelan *SOFs*, including former insurgents, gravitated toward the university system, as either students or, more comfortably, as faculty enjoying generous living-wages, which are automatically increased every year. In the UCV since the 1970s, the degree of representation of the radical left (PCV, MIR, URD, MEP, Bandera Roja) in the university was greater than in the country at large. La Universidad del Zulia in Maracaibo and the University of Oriente, with campuses in Puerto La Cruz, Cumaná, and Ciudad Bolívar, original bastions of AD, became dominated by MAS and Marxist radicals (see Hillman 2004:118-119).

**Comment [JC5]:** In the early 2000s, 6.6 percent of faculty in universities had PhD (2107 of 32,167) versus in Brazil, where 19 percent had it.

## B. The Military

In the mid 1980s, the military emerged as yet another state-protected institution that also served as a haven for the radical left. After successfully demilitarizing Venezuela and asserting civilian control over the military between the 1960s and the 1970s, the Punto Fijo regime made a turnaround and became instead a protector of a very well-taken-care-of military institution. The Punto Fijo regime began to grant the military: an agreeable mission (containment and defense against Colombia), autonomy on the conduct of defense affairs, healthy military budgets, and opportunities for advancement (Trinkunas 2005). The contrast in military spending between the 1960s and the 1980s reveals how well taken care of the military was. First, there was contractions: between 1967 and 1980, military

**Comment [JC6]:** Spending is increasing, but it is going to top generals, and weapons, but less to middle rank officers

<sup>4</sup> Another avenue culture-based avenue through which the left was subsidized was through the arts. Governments during the Punto Fijo regime devoted far more investments in the area “Culture, recreation and religion” (6 percent of total spending) than the rest of Latin America (less than 1 percent). López Obregón y Rodríguez. A significant portion of the culture budget went to artists and art groups associated with the left.

expenditures declined as a percentage of GDP (going from above to below the Latin American average), and as a percentage of central government expenditure (Figures 2 and 3). This was the period of demilitarization. But then, this trend was reversed: Military expenditure, both as a percentage of GDP and as a percentage of central government expenditure, expanded between 1980 and 1997. The size of the armed forces went from 49,000 in 1985 to 56,000 in 1998, a 14-percent increase (IISS 2000). The point is that while other areas of government spending were being cut, the military remained relatively protected. Although Venezuela did not have a large military relative to its population (in terms of military expenditures per capita in 1996, Venezuela ranked 9 or 10 among 20 countries in the region) (Arcenaux 1999), Figures 5 and 6 show that the military remained a state-protected institution. Table 4 also shows the relative stability of Venezuela's military spending as percentage of central government expenditures since the 1970s. In the three decades since 1970, Venezuela's military spending relative to CGE did not fluctuate much, on average. In contrast, most Latin American countries (except Chile, Colombia, Mexico and Ecuador) experienced drastic fluctuations, mostly in a downward direction.

The military institution thus became another regime-sponsored institutional haven for *SOFs* with anti-establishment sentiment (Hellinger 2003). We now know, for instance, that the military harbored groups with major grievances against the status quo: 1) those who opposed promotions based on party sympathies and 2) hypernationalists. In the 1980s, a new source of grievance erupted: junior officers against generals (Trinkunas 2002). One reason for this had to do with the uneven distribution of resources within the military. It seems that, most of the economic subsidies channeled to the military staff, ended up in the hands of the upper echelons of the hierarchy. Whereas low ranking staff suffered declining relative wages and conditions, the upper echelons remained well protected.

One way to gauge this is to examine the proportion of the military budget devoted for weapons acquisition. The average value of arms imports as a percentage of military expenditures expanded in the 1980s, from 11.1 percent between 1967 and 1979 to 38.5 percent between 1980 and 1989 (U.S. Arms Control and Disarmament Agency, various years). How much of this budget was diverted to corruption is a matter of speculation. But it seems safe to assume that very little of this component of the budget went to junior officer and non-ranking troops. Inequality between the top officers and the rest was thus rising, and breeding discontent among junior ranks.

**Comment [JC7]:**  $144.3/13=11.1$  percent).  
( $385.3/10 = 38.53$ ).

There is no question that there was no room at the top of the military for anti-establishment sentiment. To become a high-ranking officer, military individuals needed to be subservient to the large parties, given that promotions required Senate approval. But throughout the rest of the military, soldiers enjoyed broader political autonomy. Furthermore, there are studies that show that the intelligence institutions of the military were not terribly repressive, neither across society nor within the military (Myers 2003), which would explain the ability of anti-status quo groups in the military to survive. This “complacency” seems to explain why Chávez’s faction within the military, the MBR-200, was allowed to operate unencumbered for almost 10 years prior to the 1992 coup (Ellner 2007:149). Venezuela’s intelligence institutions were designed in 1958 to avoid the abuses of the Pérez Jiménez administration, and remained “fragmented” lacking “horizontal linkages among its important institutions.” SECONSEDE (created in 1976), the only institution with the potential to coordinate Punto Fijo National Intelligence, remained on the sidelines (:88). In the 1980s, the focus on communist infiltration gave way to focus on terrorism and drug enforcement. Furthermore, there is evidence of underuse: DIM and DISIP warned CAP of contacts between radical civilian political leaders based in Caracas slums and alienated junior army officers; but CAP dismissed these reports. Caldera also did not use the reports.

The paradox of state-military affairs prior to Chávez is that the system was breeding anti-status quo sentiment in the military, even though that sector was relatively well treated by the state. As most military analysts argue, the discontent stemmed from both politics and economics. The military came to share the views of all intellectuals in Venezuela in the 1990s that the problem with the country was the stranglehold of the party system. The upper echelons resented party based promotions. The rest resented also the rising economic inequality within the system. They also felt that the leaner years of the 1990s were affecting them far more than was the case with top officers. The military thus became simultaneously a protégé and a victim of partyarchy. Because it was so well protected and simultaneously abused—the military acted both as a sponge and a breeding ground of radical anti-status quo sentiment.

#### C. Subnational politics and voluntary organizations

After 1989, the other institutional arena that became open and hospitable to small opposition forces of the left was subnational political offices (Ellner 1993; Penfold 2002). A series of reforms which included the remarkable 1989 decentralization reforms (which decentralized spending and allowed for the direct election of governors and mayors), the shortening of municipal and congressional terms, and the institution of nominal elections was responsible for this institutional opening. By the late 1990s, the Venezuelan state was devoting a large portion (23 percent of total spending, or 5 percent of GDP) to transfers to the regions, far more than the average Latin American country; most of this spending was earmarked for state employment at the level of states and municipalities (López Obregón and Rodríguez n.d.). The index of decentralization, which ranks LAC countries in terms of the ratio of subnational expenditures to national expenditures, places Venezuela at the top 5 of 17 countries. This combination of political and economic decentralization represented a form of “diffusion of power” (Ellner 2003:14) that “lowered the cost of entry” for new

**Comment [JC8]:** Cleary's (2006) argument that left rises when there are mass-mobilizing structures, together for sources of discontent.

actors (Levine 1998:198 in Canache, see also Crisp and Levine 1998:27 and 1999), “creating new actors and mobilizing new constituencies” (Navarro 2000:201). Some even referred to decentralization in the 1990s as a “semi-suicide” of traditional parties (Lalander 2006).

**Comment [JC9]:** One major group to profit from these opportunities was La Causa R, a grass-root political party that carried out a vigorous campaign among the unions and poorer neighborhoods (Canache 2004).

The response to institutional openness was of course the rise to new avenues of political participation. By 1992, leaders of small opposition parties of the left held four state governorships and multiple mayoralties. By 1993, leftist parties achieved control of the Executive branch (the Convergencia-MAS alliance) and the lower house. These small opposition forces, no longer that small, remained intensely divided on most policy and electoral issues, but united on one theme: their scorn for the *adecopeyanismo*, a sentiment now shared not just by the urban poor (Canache 2004), but also by economic elites, sectors of the military, and the bulk of intellectuals (Hillman 2004; Morgan 2007). The marginal left was not governing, but it was not homeless. By 1998, only 13 or 23 governorships were in the hands of the traditional parties, AD and Copei. Penfold (2002) thus concludes that the increase in gubernatorial electoral “opportunities” permitted both “emerging parties” (LCR, PV, and MBR-200) and established leftist parties (MAS) to become “important players” in Venezuelan politics in the 1990s.

The other form of mobilization was the rise of civil society. Studies trying to quantify the rise of civic associations suggest that the total number went from approximately 10,000 in the early 1990s to as many as 24,628 or perhaps even 54,266 by the late 2000s (Salamanca 2004:100). As in the rest of Latin America (Hellman 1992), these groups tended to overrepresent the anti-party left.

In short, the political position of small opposition forces, including the radical left, improved, even though (or perhaps because) the regime was collapsing economically. As the number of impoverished low-income groups and defectors from traditional parties increased, the political opportunities for small opposition parties and radical left parties increased. By 1992, this combination of economic shrinking *and* political opening led to

the decline of traditional parties, AD and Copei, in favor of new or previously blocked parties: Convergencia, MAS, the PCV, Causa-R and later, in 1998, the MVR. Institutional opening, rather than decay, is thus the most powerful explanation for regime change.

#### IV. The Non-adaptation of Parties, including the radical left

I have tried to provide an institutional explanation for the prospering of the left in Venezuela, but what about the prospering of radicalism in Venezuela? The left in Venezuela was large, and not everyone in the left was radical, but it seems that there were many radicals in Venezuela circa the 1990s. More precisely, it seems that there was a large section of the left that was particularly in favor of a set of ideas that have been described as “setentistas,” even “cincuentistas,” (e.g., “endogenous development,” the chavista term of import-substitution industrialization, and tolerance for concentration of power in the hands of the Executive). Most of the left in Latin America in the 1980s and 1990s moved in the direction of greater acceptance of private market forces and definite rejection of concentration of power in the hands of the Executive or military institutions. What explains, therefore, the non-adaptation of so many sectors of the Venezuelan left (see Katz and Mair 1994; Burgess and Levitsky 2003)?<sup>5</sup>

It must be noted that in this period of rising small opposition forces and declining traditional parties, neither force underwent a deep process of “adaptation.” In the cases of small opposition forces and the radical left, anti-liberal sentiments remained as strong in the 1990s, even as the left in Latin America became more moderate (Angell 1996, Castañeda 1993). For instance, large sections of the Venezuelan left continued to embrace old-fashioned leftist views of democracy that privileged popular mobilization and heavy-

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<sup>5</sup> Burgess and Levitsky (2003:883), following Katz and Mair (1994), define party adaptation as “changes in strategy and/or structure, undertaken in response to changing environmental conditions that improve a party’s capacity to gain or maintain electoral office.” An important component of party adaptation is changes in platforms, affiliates, and coalition partners, to reflect new economic realities.

handed state policies over views of democracy stressing the need for accountability of office-holders, civilian control of the military, and respect for minority opinions, etc. Even in the most self-democratizing party of the left, MAS, there continued to be strong adherence to old doctrines within the party and huge conflicts with other leftist parties (Ellner 1993). The Venezuelan left continued to romanticize revolutionary politics—a strategy that in the 1990s generated problems for leftist parties elsewhere, either at the moment of elections or at the moment of governing (Roberts 1998). And when the MAS became a ruling party, it pretty much rejected its very own planning minister, Teodoro Petkoff, for “selling his soul to” neoliberalism.

#### A. One-Way Globalization

**Part** of the reason for the non-evolution of Venezuela’s left is what I would describe as “one-way globalization.” Most Latin American leaders of the left abandoned their countries in the 1960s-70s period, fleeing right-wing dictatorships. The majority of them went to the United States, Canada, and Europe. This exodus contributed to the ideological moderation of the Latin American left, in tandem with the moderation of the left in the West. Even those Latin American leftists who sought asylum in communist Eastern Europe became less enchanted with Marxism, at least in practice. In the words of Hagopian (2005:323), exile “tamed their passions” for socialism. With the return of democracy in the 1980s, many of these individuals returned to their countries, and they served as carriers of the new, more moderate left-wing ideology that they adopted while abroad. A good example was Ricardo Lagos, president of Chile from 2000 to 2006. Lagos was a hard-core, leftist supporter of Salvador Allende’s government in the 1970s. He was about to be confirmed as Chile’s ambassador to the Soviet Union when Pinochet carried out his coup in 1973. He sought asylum in Argentina, and then in the United States, where he taught economics at the University of North Carolina. Upon his return, Lagos became a main collaborator of the Concertación’s more moderate stands, serving first as education

**Comment [JC10]:** Important: Angell in 1996 book by Whitehead on International Dimensions of Democratization, mentions how Chile’s opposition benefited from the transformative experience of exile.



minister and then as infrastructure minister (Navia 2006).

Venezuelan leftists were completely alien to the Lagos phenomenon of ideological evolution because it never had reasons to leave Venezuela involuntarily. Institutional comfort at home precluded exodus, which in turn, precluded international exposure, which in part, precluded ideological adaptation. If anything, the Venezuelan radical left interacted mostly with its own kind. As Table 6 shows, Venezuela experienced a massive inflow of exiles from the Southern Cone between 1960 and 1981. In addition to the United States, Canada and Europe, South American leftist leaders in the 1960s migrated to Venezuela and Mexico because these countries remained free of anti-communist dictatorships. Venezuela in particular offered generous opportunities for Southern Cone refugees. For instance, starting with President Caldera in 1973, and throughout the duration of the Pinochet regime in Chile, the Venezuelan government maintained an active effort to provide political asylum to Chileans, including the setting aside of a special funds for refugees (Yáñez 2004). Consequently, the combined population of Argentine, Chilean and Uruguyan nationals increased by almost 800 percent between 1961 and 1981. As further proof that these Southern Cone exiles in Venezuela were on the left (leaving for political rather than economic reason), immigration from Argentina and Uruguay turned negative in the 1980-84 precisely when these dictatorships vanquished. There is also evidence that that these exiles became quite assimilated into Venezuelan society. Most of them were professional, and 42.5 percent of them held jobs, mostly in professional fields.

#### B. The Parties' Technocratic Deficit

The traditional parties, not just the radical left, also failed to undergo adaptation. Most of the large Latin American populist parties of the postwar period that became electorally successful in the 1990s (e.g., the PJ in Argentina, the PRI in Mexico, the Concertación in Chile, the PSDB in Brazil, the Liberals in Colombia and Honduras) did so

after undergoing a process of internal renovation. One crucial aspect of that renovation was the incorporation of *técnicos* within their ranks. These *técnicos* updated their party's ideologies, and more important, gave them policy tools to deal with the crisis of the 1980s. However, both AD and COPEI remained fairly closed to technical expertise.

The best study on the relationship between Venezuelan parties and the *técnicos*, grouped under “*colegios*” (or professional associations and boards) argues that parties and *colegios* always had a strong working relationship, which is not surprising for a democracy, especially one with a large, rent-granting public sector (Martz and Myers 1994; see also Crisp 2000). However, even this study mentions that this relationship eroded over time. Until the 1970s, professionals felt that they played an important part “in creating and consolidating” Venezuelan democracy (Martz and Myers 2004:21). Essentially, *colegios* felt they influenced politicians. Overtime, however, the *colegios* started to feel that politicians “customarily influence the *colegios*.” This change led to resentment among professionals over “politicization of the professions” (*ibid.*:21-22).

Martz and Myers's focus on working connections between party factions and *colegios* is only one side of this question, not the whole story. Seen from another perspective, the groups look far more estranged. For instance, if one looks at the ways in which *técnicos*, or technical expertise for that matter, entered party leadership, rather than merely working relationship, the disconnect between the partisan and the technical realm looks larger.

There are two ways in which technical knowledge can penetrate parties. The first is through the Executive Branch, a model exemplified by Mexico under PRI rule. Mexican presidents since the 1960s appointed technical experts throughout the federal bureaucracy, and these *técnicos* joined the ruling party leadership, and even made it to the presidency. In Venezuela this process of *técnico*-incorporation was never all that strong—top party positions remained in the hands of traditional politicians—and it completely collapsed

under Perez (1989-2003), with AD's famous campaign against Pérez's technical cabinet (Corrales 2002).

The other route for técnico penetration is through specialized service in the legislature (Jones, Saiegh et al. 2002): the more time in the legislature, the greater incentive for specialization. But in Venezuela, the average tenure of legislators was very low: 64.6 percent of legislators served only one term; 15.3 percent served only two terms (see also Monaldi, González et al. 2005). The reelection rate was one of the lowest in the region (IDB 2005:Chapter 3). In addition, the productivity of the legislature (number of bills approved per year) was shockingly low. Venezuelan legislators spent so little time in the legislature, and this legislature was so underutilized, that legislators had minimal incentive to acquire expertise.

In sum, Venezuelan traditional parties suffered from what Hagopian (2005:359) considers to be the two major causes of party crisis: a representational deficit (i.e., a disconnect between party leadership and civil society) and a technical-expertise deficit (a disconnect with policy-works). In Venezuela, both the leading parties (AD and Copei) and the traditional left party (the MAS) suffered from both crises. The representational deficit stemmed from the defection of party affiliates typical of countries undergoing economic contraction (see Molina 2000; Myers 2007). Morgan (2007) even argues that the defecting voters were those from the "new right" and the "new left." These voters started to feel unrepresented by both the traditional parties (AD and COPEI) and the traditional parties of the left (MAS). The parties were not evolving ideologically in tandem with citizens. The social-democratic party and Christian Democratic remained attached to the old rentier-populist model, which was increasingly unappealing to the new right; and the MAS was too attached to its anti-capitalism, which was also increasingly unappealing to the new left. In other words, the new left was becoming closer to the new right in its embrace of political and economic liberalism, yet none of Venezuelans parties evolved enough in this direction

to accommodate these groups.

In addition to representational crisis, the parties suffered from the failure of traditional parties to incorporate technical expertise. This was perhaps a more serious deficit than the representational deficit. I would even argue that the technical expertise deficit probably helped cause the representational deficit: the failure to incorporate technical expertise left the parties devoid of ideas and courage to experiment with new policies, leading to party ineffectiveness in the face of economic crisis, leading in turn to voter detachment.

In sum, the paradox of chavismo is that it is a movement of anti-status quo politicians that was possible, not because these forces were subjected to institutional isolation, but on the contrary, they benefited from institutional protection. The notion that the Punto Fijo regime became increasingly exclusionary and collusive might be true mostly at the level of national-level political parties politics, but not elsewhere in society, and even less so in in the 1990s with the rise of new opportunities for participation. The rise of Chávez in 1998 thus represents not the sudden triumph of historically excluded groups, but rather, the culmination of years in which discontent groups were able to use the institutions of democracy to climb to the top.

Three groups were trying to rise against the rentier-model defended by parties in Venezuela—the radical left since the 1970s, the new left and the new right in the 1990s. But it seems that only the radical left enjoyed greater institutional opportunities for coming ahead. They had a stranglehold over the university, the military, social movements, and increasingly, the new political parties that were displacing the traditional parties. Because of this institutional advantage, the radical left was best positioned to take advantage of the “unraveling” of the Punto Fijo regime. By 1993, Venezuela faced an array of propitious conditions for an assault against the traditional political actors of the regime: almost 20 years of continuous economic decline, divisions within the traditional parties (which stayed

impermeable to technical experts and plagued by voter detachment), and nonmodernized small opposition forces that were enjoying new allies and safe political spaces. Hugo Chávez emerged as the leader of such an assault. His task was to unite the radicals at the university, the suffering low-income groups, and the military.

## V. Venezuela and Latin American Countries Compared

Table 6 summarizes the key factors that, I have argued, led to the supply of a strong, radical left in civil society and within the military. These factors include:

1) feeding mechanisms (e.g., net inflow of leftist immigration in the 1960s and 1970s, two decades of economic contraction and aborted reforms, inequalities between junior and senior officers in the military), and

2) institutional shelters (the university and the military's protected budget, lack of right-wing purges), mobilizational opportunities (decentralization of political office and the military's openness).

Together with the erosion of traditional parties in the 1990s, which further lowered barriers to entry of new political groups, these factors created conditions for the rise of radical leftism in Venezuela by the late 1990s.

Table 6 also shows that these conditions were not exactly replicated to the same extent elsewhere in the region. Most countries shared some of these conditions, but none shared *all* of them. This explains why elsewhere in the region, the radical left was not as large, as radical, or as willing to accept military involvement in politics as it was in Venezuela. If Chávez had tried to build a coalition of radical leftists and left-leaning military officers in another Latin America country in the late 1990s, he would have failed.

I can now formulate some generalizations about the distribution of voters and leaders across the ideological spectrum in Venezuela relative to Latin America. Analysts

conventionally divide the political spectrum in most countries into four broad categories: extreme left, center left, center right, and extreme right. Venezuela in the late 1990s was no exception. The main difference between Venezuela and other Latin American countries, this paper argued, was the proportion of voters and leaders within each category.

Specifically:

1) The size of the right was not that large in Venezuela. The two forces that fed the right in Latin America were not strong in Venezuela--1) a Cold War-influenced military fighting insurgency all the way through the early 1980s; and 2) neoliberalism in the 1990s, which would have given rise to large pro-market political forces. The best evidence for the weakness of the right was the minimal share of the vote obtained by the two candidates of the right in the 1998 presidential elections, Miguel Rodríguez and Irene Saénz: 3.12 percent.

2) Within the Venezuelan left, the extreme left was strong and becoming stronger. Institutions sheltering and promoting radical thought were well protected from adjustment and were expanding as a result of decentralization and the collapse of traditional parties.

This distribution of voters and leaders helps explain the second feature of chavismo once it came to power: its increasing tendency toward radicalization, which is the topic of the next section.

## VI. Chavismo in Office, Part I: Explaining Radicalism

Other than its anti-party stance, the Chávez administration was not all that radical

at first. At the level of economics, Chávez hardly proposed any major policy departure (at least not more than Caldera during his honeymoon). The best evidence of economic moderation is the decision to retain Caldera's finance minister. But starting with the late 1999 decision to convert the Constituent Assembly into an "originating body" that displaced the existing Congress, Chávez began to take increasingly radical policies in economics and politics. Since then, the Chávez regime has competed in each electoral process (1999, 2000, 2004, 2005, 2006, 2007) on a platform and a record that was far more radical than in the previous electoral contest.

There are two possible schools of thought on the origin of polarization and radicalization. One school of thought suggests that radicalization is an inevitable response to the intransigence of the status quo. States try to introduce modest reforms, usually in the form of distributive politics, only to confront the intransigent resistance of certain classes. This argument is famously associated with Karl Marx's, for whom revolution (rather than reform) is the only realistic path to true change, but it has also been accepted by contemporary non-Marxists. For instance, William Easterly (2001) argues that... and Acemoglu and Robinson (2006:321-322) argue that development produces a stalemate between elites who fear redistribution and the masses who, mobilized by democracy, demand redistribution. In all these accounts, radicalization is a consequence of unbending structures.

An alternative view of polarization is to see it as a deliberate, and not necessarily inevitable, policy of the state. Radicalization does not occur because change necessitates it but because it is state elites, rather than the masses, that pursue it (Cohen 1994; Bermeo 2003), often because fabricating threats yields political gains (Tilly 1987). In this section, I will show why pursuing radicalization rather than moderation has proven to be so politically rewarding for Chávez, at least until 2007. To see this, it helps to bear in mind my contention about the distribution of voters and leaders in Venezuela. But first, let's specify

the political consequences of moderation or radicalization on the political loyalties of each group within the ideological spectrum.

Moderation and radicalization each has different impacts on voters depending on their position in the ideological spectrum. For instance, let's assume that a leftist government decides to pursue moderate policies (e.g., establish cooperative relations with the U.S. and pro-business policies). This would have the following impact. The center-left applauds and becomes supportive, but the extreme-left becomes disappointed, and most likely, defects. The extreme right, naturally, remains unimpressed, and thus, continues to defect. The complications occur within the center-right, which probably splits into three groups: one small portion supports the government (the result of pro-incumbent pull in presidential politics); a second portion becomes ambivalent, not exactly sure how to respond (swing voters, or what in Venezuela are called the "*ni/ní*"); and a third group simply joins the opposition.

If a leftist government instead decides to radicalize (e.g., pursue a heavy dose of statism and close collaboration with Cuba), the consequences across the political spectrum are different. First, the extreme-left becomes loyal. Second, the extreme right panics and becomes more extreme. This in turn has an impact on both the center left and the center right (see Cohen 1994). The center left splits, with the majority moving further to the left (in shock at the rise of a radical right) and a minority staying in an ambivalent position, repulsed by the extreme position of each camp. The center right suffers a similar split.

Table 7 tries to summarize these impacts. For the sake of the analysis, Table 6 stipulates a series of hypothetical rules based on what I just argued: moderation splits the center-right three ways (support, ambivalence and defection), and radicalization splits both the center-left (two thirds turns supportive; one third turns ambivalent) and splits the center-right in a mirror image (one third turns ambivalent; two-thirds turn to the extreme right).



If one applies the hypothetical rules in Table 7 to different political settings, it becomes clear that the political payoffs of moderation and radicalization in terms of resulting loyalties vary the more asymmetrical the distribution of voters. Table 8 provides three major political settings with various degrees of asymmetry (i.e. proportion of left to right, and proportion of extreme left to center left). The table also provides the number of supporting, ambivalent and opposing forces that given this settings, would result from moderation versus radicalization.

The first setting consists of a political spectrum in which moderate forces dominate. While the numbers used are fictitious, they reflect the median voter assumption, namely, that most voters are concentrated in the middle of the spectrum. Within this context, Table 8 lists two contexts: extreme forces are tiny minorities (Case A), and extreme forces are larger minorities (Case B). Applying the rules from Table 7 to Case A shows that a strategy of moderation is unambiguously optimal for the incumbent: it maximizes the number of supporters (relative to a policy of radicalization) and minimizes the number of opponents. For Case B, moderation is less optimal but still appealing: while moderation increases slightly the number of opponents, it significantly increases the number of supporters relative to a policy of radicalization.

As the size of the left increases relative to the right, and with it, the proportion of the extreme left, the political payoffs reverse completely. Rows C and D show political settings in which the median voter assumption has been altered by increasing the overall size of the left relative to the right by 20 points. In case C, the moderate left is stronger relative to the extreme left; in case D, the reverse is true. In both cases, a strategy of polarization is more appealing for the incumbent: it always produces more supporters than opponents. Although in case C radicalization reduces the number of supporters relative to moderation, it is still an appealing strategy because it diminishes significantly the number of defectors.

The final set of cases relaxes the median voter assumption further: the left is far larger than the right (65 to 35). In these circumstances, polarization is even more preferable: it increases the number of supporters relative to defectors by a significant degree.

An important observation from Table 7 is that it is not necessary for a majority of the electorate to be extreme left for a leftist government to derive political payoffs from radicalizing. Even in situations where the extreme left represents 20 percent of the electorate (Case C), a leftist-government can profit from radicalization, provided the left in general is larger than the right. This paper has argued that Venezuela probably found itself somewhere among cases C, D, E: the left, and in particular the extreme left was strong relative to the right, albeit not majoritarian. Under these conditions, radicalization can be politically rewarding for the incumbent. Radicalization is thus more supply-side than demand-side driven. It is preferred by the incumbent due to its political advantages, rather than demanded by a majority sentiment in the electorate.

#### VII. Chavismo in Office, Part II: Why clientelism, impunity and intimidation

Political reward does not mean absence of risk. While pursuing radicalization can increase the number of supporters and reduce the number of opponents, which is optimal for incumbents, it yields a new type of risk: the size of ambivalent groups increases. These groups are risky for the government. Insofar as their loyalties remain in flux, ambivalent groups can at any point gravitate toward the opposition since, by definition, ambivalent groups have non-fixed loyalties.

Most polls provide evidence of the rise of ambivalent groups soon after Chávez begins to radicalize in office. By July 2001, one reputable poll was already beginning to classify some Venezuelan voters as “repented chavistas” (Gil Yepes 2004). The size of

repented chavistas swelled from 8.9 percent in February 2001 to 14.7 percent in July 2001 and 32.8 percent in December 2001 (ibid.). By June 2002, these repented chavistas turned into “light chavistas,” “light anti-chavistas,” and “hard anti-chavistas,” confirming the hypothesis that radicalization makes the incumbent lose support from moderates, and that these losses could easily turn anti-incumbent. In addition, defections in the military and in the cabinet increased. By mid 2002, the government found itself confronting the largest amount of opposition since coming to office.

The key point is simply that even in situations of polarization, the size of the swing group grows and is not trivial. They are far more important than in situations of moderation. And in cases C and D (Table 7), ambivalent groups can turn to the other side, thereby imperiling the government. Thus, even radical leftist governments pursuing polarization (and thus maximizing supporters) need to develop strategies to deal with ambivalent groups.

What has the Chávez administration done to address ambivalent groups? **This is** where the three other pillars of chavismo in office come into place: clientelism, impunity, and job discrimination (this section draws from Corrales and Penfold (2007)).

Clientelism refers to the distribution of material benefits from a strong political actor (in this case, the state) to a less powerful actor (in this case, ordinary citizens and small civil society organizations). In the context of a radical-leftist government, clientelism is likely to work mostly among the less ideological sectors of the population: the extreme left does not need clientelism to support a radical-leftist government, the extreme right won't be swayed by it either. The reason the Chávez administration needs to court weak, less ideologized actors is that they provide votes, which in an electoral process, is crucial, and in a process of polarization, constitutes a large bloc

The other strategy that Chávez has deployed is corruption, which differs from clientelism in that benefits pass from strong actors (in the case the state) to strong actors

**Comment [JC11]:** Most public opinion polls tend to confirm that Venezuela occupies either one of cases D, E, and F. For example, many pollsters measuring presidential approval ratings tend to divide respondents among different categories: hard chavistas, moderate chavistas, moderate anti-chavistas and hard anti-chavistas. Whereas in February 1999, according to one prominent pollster, almost 91 percent of the public supported Chávez (providing evidence of the small size of the right), by December 21, attitudes toward the incumbents changed as follows:

- . Hard chavista 28.5
- . Moderate chavistas 13.1
- . Repented chavistas (who went on to become moderate anti- or pro-chavistas): 14.7
- . Moderate anti-chavistas 24.7
- . Hard anti-chavistas: 19.0

in Venezuela survey people's attitude toward

(e.g., the military, large business groups). Like clientelism, corruption is a strategy designed for the non-ideologized groups. Because strong actors can act as major veto groups, not just of policy but also of the administration tenure in office, it is important for governments in unstable political settings to deploy significant resources to deal with powerful actors. One of the key reasons that corruption is so rampant in the Chávez administration is precisely because of the size of the potential defections is large. Furthermore, in situations of radicalization, the opposition is so galvanized that it is vital to have a mechanism for coopting elites (military and business groups), as a potential shield against possible coups. Chávez began to offer corruption and impunity to the military almost since the first day in office and he started offer corruption and impunity to cooperative business groups in 2003, when state revenues began to swell.

The final strategy deployed by the Chávez administration to deal with ambivalent groups is job discrimination. The Chávez administration, in no uncertain terms, has repeated that the largest benefits of his administration (government jobs, government contracts, government subsidies, etc.) are earmarked exclusively for supporters, which the government in 2006 called the “*rojo, rojitos.*” In addition, the government does all it can to publicize the notion that it knows people’s voting behavior (e.g., the famous Lista Tascón and Lista Maisanta). The Chávez administration thus likes to portray itself as a watchful government that rewards supporters and punishes opponents through exclusion from clientelism, corruption and government jobs. This is meant to convey that there are large gains from staying loyal and large losses from dissenting. Again, this is a strategy that affects mostly the non-ideologized, ambivalent groups. It is a also a strategy intended to promote electoral absenteeism on the party of anti-chavistas.

In sum, the chavista coalition in its eighth year in office has changed enormously since its inception. Back in 1999, the movement offered a progressive ideology that promised to free Venezuela of the stranglehold of the old parties and repeated economic

crises. This agenda was pro-change, but not radical. It attracted the vast majorities. Since then, the agenda has turned radical. This attracts the loyalty of the extreme left, but it also creates polarization between poles, but also a large group of ambivalent groups. To keep this ambivalent group from totally defecting, the administration has had to target clientelism, impunity, and reverse job discrimination to this ambivalent group. By targeting ambivalent groups with these strategies, Chávez managed to increase the number of supporters beyond that which the extreme left bloc provides.

Consequently, the coalition of leaders and voters who support Chávez is different from what it was in the beginning. It is revolutionary, but also, conservative. Chávez's supporters today include not just extreme left and the losers in Venezuela, but also new and old winners: welfare recipients, actors with ties to the state and those who profit from corruption. Although these winners come from different income groups (welfare recipients are mostly poor, state employees come from the low middle classes, and corrupt folks are wealthier), they share the same electoral objective—preserve their gains. These gains are access to social programs, state jobs and contracts, and impunity. What unites these groups is a fear that the opposition will take away their gains.

We can now understand why the Chávez administration relies on radicalism *and* intense clientelism/impunity/discrimination. The former maximizes the number of supporters relative to defectors (due to the large albeit not majoritarian status of the extreme left), but it also increases the number of ambivalent groups. The latter policies target ambivalent groups. Combined, both sets of policies give rise to winning coalitions that, paradoxically, include an odd combo: committed revolutionaries and less-ideologized, state-dependent actors, many of whom are social elites.

## VIII. Conclusion

The chavismo phenomenon, both its rise and consolidation in power, must be explained by invoking both demand- and supply-side explanations. A focus on the demand side (which stresses widespread discontent in the late 1990s) can explain why a majority of voters would elect a leftist, anti-status quo alternative, but it cannot explain why the leftist alternative proved to be so radical, so compatible with the military, and so reliant on clientelism, impunity, and intimidation. In deciding to form a radical-military government, Chávez could count on a larger pool of voters and political leaders willing to construct this project. Venezuela's democratic institutions—universities, the military, local governments, and small parties—served to incubate and insulate these groups. Incubation helps explain their phenomenal growth since the 1970s; insulation explains their lack of ideological adaptation in tandem with the mainstream international democratic left.

This case study has addressed a number of key debates in comparative politics: the rise of the left in Latin America in the 2000s, the process of democratization, the notion of party ideological adaptation, and finally, the supply-side of extremism. This conclusion summarizes the main points this paper made within each of these topics.

First, on the rise of the left in Latin America, this paper argued that this phenomenon is driven mostly by both gripe as well as institutional opportunities, rather than exclusion. This explains why Venezuela has produced the most radical turn to the left in Latin America in the 2000s. The radical left in Venezuela, as elsewhere in Latin America, had strong grievances against the status quo, and these grievances intensified as inequality rose in the 1980s and as market reforms were attempted in the 1990s. But unlike the radical left in many other countries in Latin America, the Venezuelan radical left did not suffer from intense institutional exclusion. Whereas in the rest of the region the radical left was severely repressed, imprisoned or exiled, in Venezuela democratic institutions since 1968 offered protections, opportunities for integration, shelter, and ultimately, access to

state office in the 1990s. These institutions not only subsidized the left, but also insulated them from exposures to global forces that would have triggered ideological evolution.

Second, on the question of democratization, this paper highlighted a process that seems to defy Acemoglu and Robinson's (2006) theory that democratization occurs when non-elites maximize both their *de jure* and *de facto* power vis-a-vis the state. In Venezuela, the radical left obtained a substantial "reparations" package, not when it was strong and threatening, but rather when it was at its weakest—i.e., when it was politically and militarily defeated in the late 1960s.

Third, on the notion of party adaptation, this paper emphasized the notion of one-way globalization: the Venezuelan left was far more exposed to the inflow of like-minded ideas abroad than it was to overall global trends, because immigration of similar cohorts surpassed emigration rates. Economists are used to differentiating the effects of inward versus outward economic influences in a given country. This paper emphasizes that, in terms of political ideas, it is also possible to speak in terms of inward versus outward exposures. The Venezuelan left's one-way globalization limited adaptation of large parts of the left. Chavismo was possible not because of too much globalization, but rather, because in one particular domain—the globalization of the domestic radical left—the degree of interaction was limited.

Another aspect that precluded party adaptation was the enormous barriers that parties created to the incorporation of technical expertise, which this paper connected to the stranglehold of political elites on parties and the party's low levels of investments in legislative affairs.

And finally, this paper offered an explanation for radicalism in Venezuelan politics since 1999 that combines both the supply side with the inherent logic of radicalism in generating loyalties based on asymmetries in the distribution of voters along the ideological spectrum. Majority pressures per se did not necessarily push Chávez to turn radical once in

office. This desire to become more radical was instead the result of: the personal preferences of Chávez, the large dominance of radical leaders who surrounded and cheered him, and the good supply of military officers willing to tolerate, even sympathize with this project. This supply-side explanation for radicalism must also be supplemented with an understanding of the political logic of pursuing extremism in politics. Radicalism has a clear political payoff in situations in which the radical left is large, though not necessarily majoritarian. In these contexts, radicalism in office can produce more supporters than detractors, which is the reason for its appeal for incumbents. But polarization also carries a huge risk: the opposition turns potentially virulent, and more important, the size of ambivalent groups increases, repulsed by the extremism of each side. These ambivalent groups can easily determine the election, so deploying alternative policies to coopt these groups is indispensable for incumbents. The Chávez formula has been to combine radical policies (which produce polarization) with reactionary policies (clientelism, impunity and intimidation); the latter is aimed at preventing ambivalent groups from defecting.

Thus, to focus exclusively on the demand side to explain the combination of radical-military politics and corruption/impunity/intimidation is insufficient. Radical-military policies represent a break from the status quo; corruption/impunity/intimidation represents an accentuation of, rather than a break from, the pre-Chávez status quo. The same demand force could not possibly explain the rise of such dissimilar outcomes. Combining demand side argument with supply-side explanations, and invoking the logic of extremism, helps explain the odd combination of radicalism and conservatism that is at the core of **chavismo**.

**Comment [JC12]:** Chavismo and Latin American populism:

- Chávez has:
- 1) the militarism of Perón
  - 2) the take personal petitions of Eva
  - 2) the anti-imperialism of Haya de la Torre
  - 3) the ferrying of supporters of the PRI
  - 4) the mobilization of thugs of Stroessner
  - 5) the polarizing nationalizations of Allende
  - 6) the easy references to Jesus Christ of Liberation Theology
  - 7) the no time for marriage of Che Guevara, because his life does not belong him.
  - 8) the paranoia of assassination of...
  - 9) The talk of grandeza of Brazilian military leaders
  - 10)



Table 1: Professional Profile of Delegates to the 1999 Constituent Assembly

	Pro-I		O Forces		Indigenous	
	No.	%	No.	%	No.	%
<b>Political Activist (total)</b>	<b>57</b>	<b>46.72</b>	<b>4</b>	<b>66.67</b>	<b>2</b>	<b>66.67</b>
Lawyer	10	8.20	2	33.33		
Economist	0	0.00	1	16.67		
Labor Leader	3	2.46				
Misc	23	18.85	1	16.67	1	33.33
Professor	16	13.11				
Teacher	1	0.82			1	33.33
Labor Leader	1	0.82				
Former Guerrillas	3	2.46				
<b>Professors</b>	<b>24</b>	<b>19.67</b>	<b>1</b>	<b>16.67</b>	<b>0</b>	<b>0.00</b>
Economics	1	0.82				
Other	22	18.03	1	16.67		
Chávez's brother	1	0.82				
<b>Civilian Professionals</b>	<b>21</b>	<b>17.21</b>	<b>1</b>	<b>16.67</b>	<b>1</b>	<b>33.33</b>
Lawyers	2	1.64			1	33.33
Singers	1	0.82				
Business	1	0.82				
Economists	1	0.82				
Medical Doctors	3	2.46				
Sociologists	3	2.46				
Others	9	7.38	1	16.67		
Chávez's wife	1	0.82				
<b>Military</b>	<b>19</b>	<b>15.57</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0.00</b>
Military in the 1960s	1	0.82				
Military in the 1990s	2	1.64				
“ /CPS	9	7.38				
Active	5	4.10				
Retired	2	1.64				
<b>NC</b>	<b>1</b>	<b>0.82</b>				
<b>Total</b>	<b>122</b>		<b>6</b>		<b>3</b>	

Source: Author based on on-line searches of Venezuela's dailies.

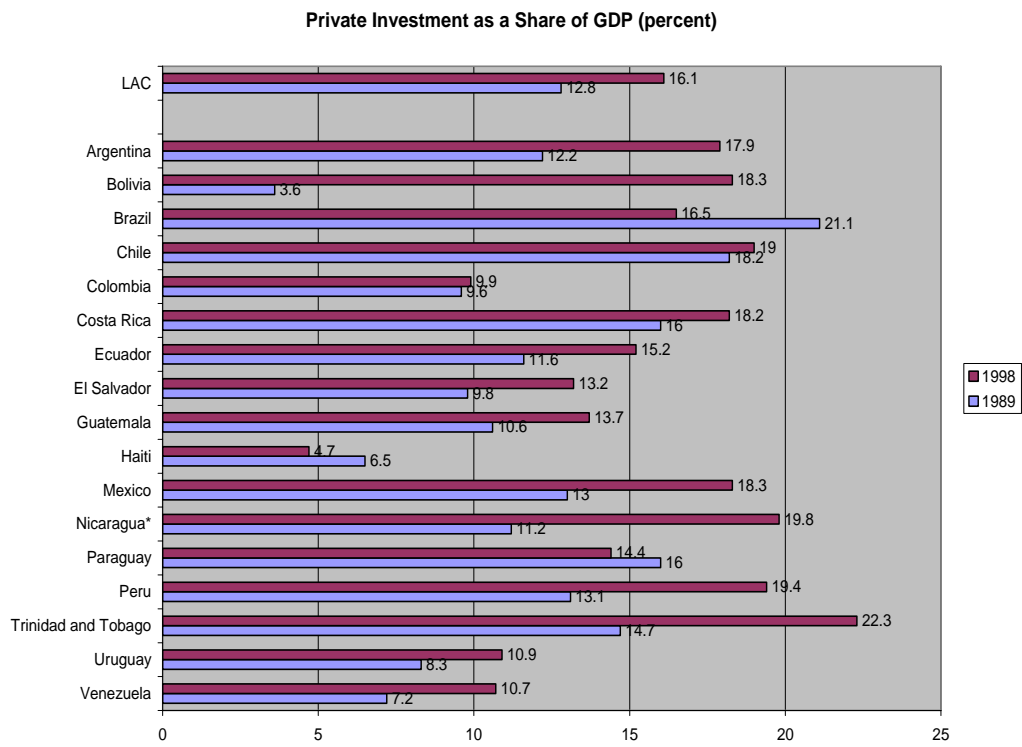
Table 2: Military Officers (active and retired) in Public Office, Venezuela circa 2005

Governors	9
Deputies	8
Ministers	6
Viceministers	3
Directorships within ministries	16
Directorships of Autonomous Institutes	15
Source: El Nacional/Súmate.	

Table 3: Gross Fixed Investment Rates, Venezuela 1960-1998  
(annual average as percent of GDP)

	Total	Public	Private
1960-70	24.2	8.4	15.8
1970-80	34.4	10.8	23.6
1980-90	21.3	10.6	10.7
1990-98	15.8	9.9	6.9
Source: DiJohn (2004).			

Figure 2



Source: Everhart and Sumlinski (2001).

Figure 3

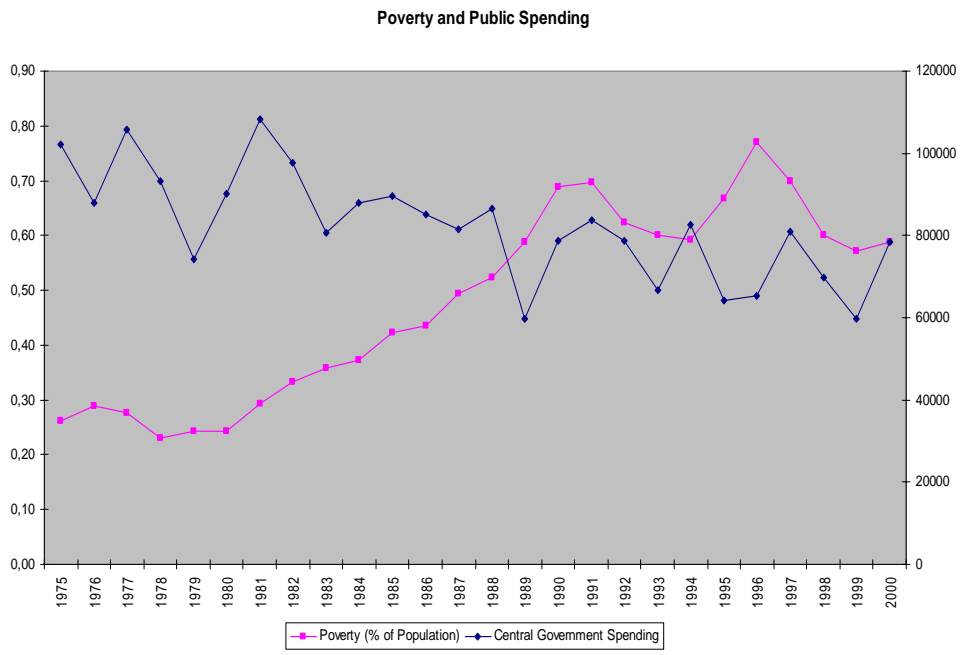
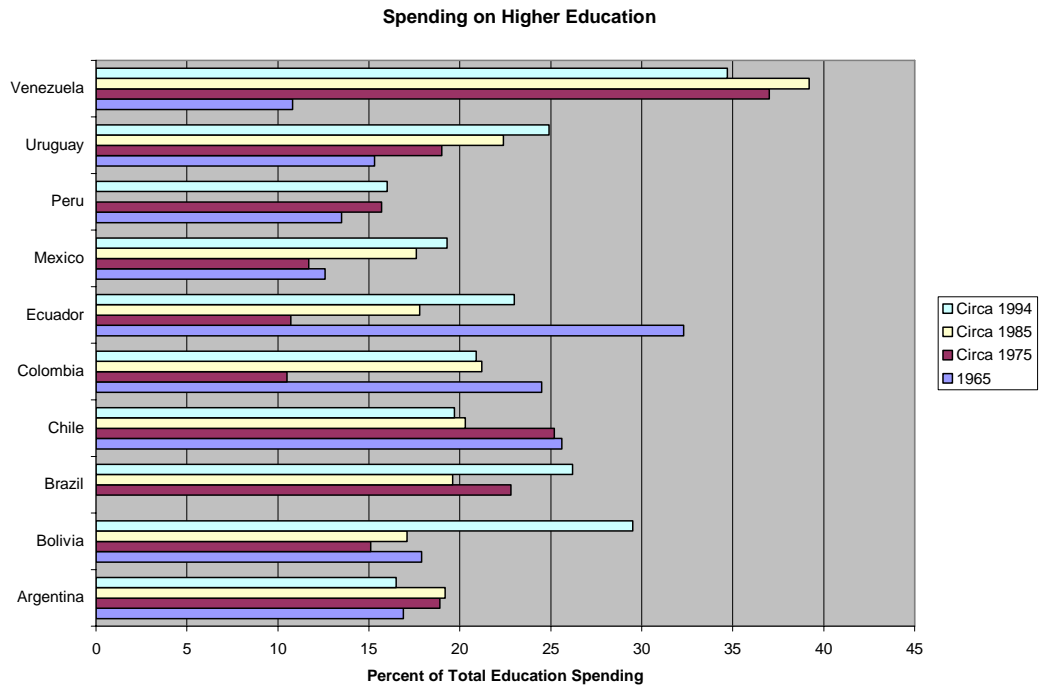
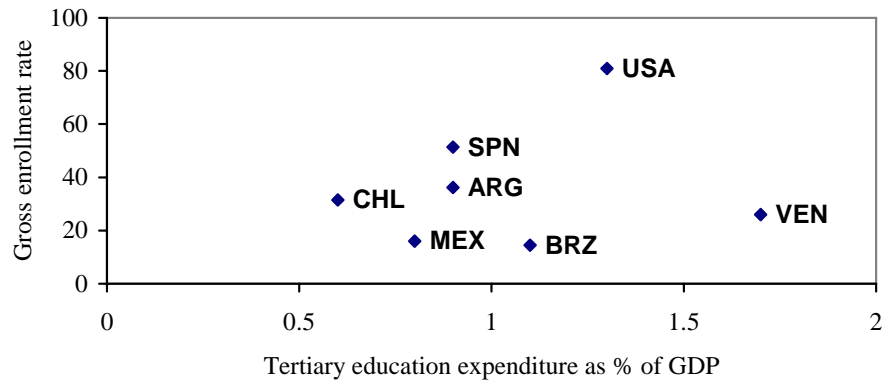


Figure 4



Source: UNESCO (various years).

Figure 5: Tertiary Spending and Enrollments, Selected Countries



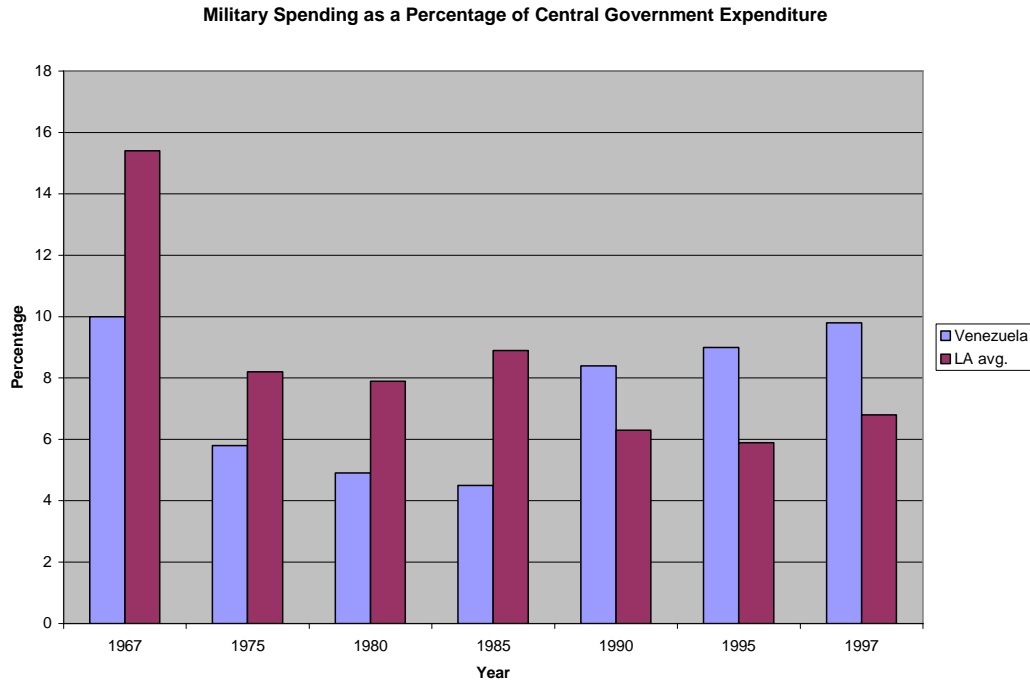
Source: World Bank and UNESCO.

Figure 5



Source: U.S. Arms Control and Disarmament Agency (various years).

Figure 6



Source: U.S. Arms Control and Disarmament Agency (various years).



Table 4: Military Expenditure as a Percentage of Central Government Spending, annual averages by decades, 1970-1999

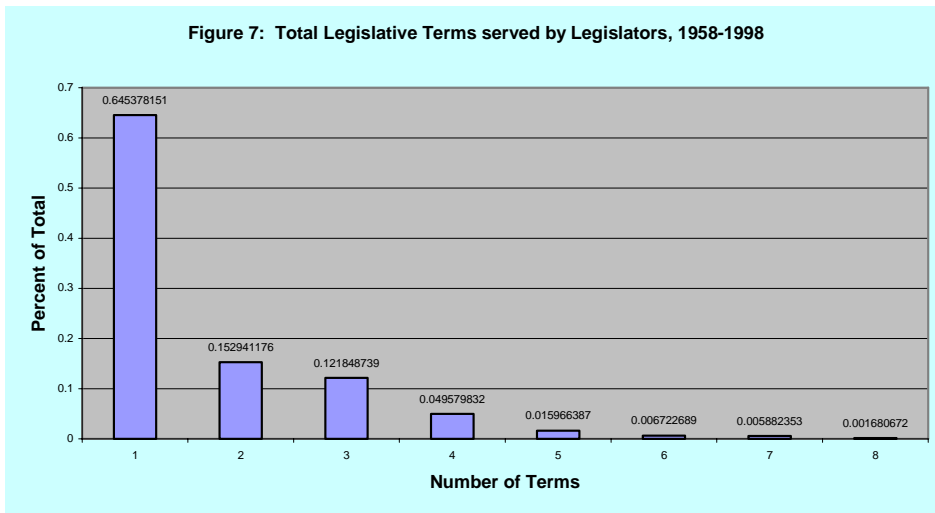
	1970-1979	1980-1989	1990-1999
Latin America	12.8	7.6	6.5
Argentina	12.8	17	11.7
Bolivia	11.5	22.4	10.7
Brazil	14.5	3.4	4.1
Chile	12	12.9	14.8
Colombia	11.3	10.3	17.8
Ecuador	15.3	14	20.7
Mexico	5.1	2.2	3.9
Peru	23.2	33.3	11.5
Venezuela	7.6	7.1	6.6

Source: U.S. Arms Control and Disarmament Agency (various years).

Table 5: Immigration to Venezuela, 1961-1981

	1961	1971	1981	Percent Increase 1961-81
Total	541,563	596,455	1,074,629	198.43
Arg + Chi + Uru	5,531	8,086	43,748	790.96
Colombia	102,314	180,144	508,166	496.67
Europe	369,298	329,850	349,117	-5.46
Other	64,420	78,375	173,598	269.48

Source: Bidegain (1986)



Source: Based on data published by Gaceta Oficial (various years).

Table 6: Venezuela 1998 Compared

	<i>Ven</i>	<i>Arg</i>	<i>Bol</i>	<i>Bra</i>	<i>Chi</i>	<i>Col</i>	<i>Ecu</i>	<i>Mex</i>	<i>Nic</i>	<i>Per</i>
<b><i>The Strength of the Radical Left</i></b>										
Net Inflow of Leftist Dissidents ( <i>during the Cold War</i> )	Yes					Yes		Yes		
Left welcomed at universities (i.e., purges rare)	Yes					Yes		Yes	Yes	
Repeated Failures of First-Generation Reforms	Yes						Yes			
Substantial Decentralization in the 1990s	Yes	Yes	Yes			Yes		Yes		Yes
Collapse of large, traditional parties in the 1990s	Yes									Yes
<b><i>The Strength of the Left in the Military</i></b>										
Relatively Stable Budgets (no drastic cuts since 1970s)	Yes				Yes	Yes	Yes			
Military Expansion in the 1980s	Yes				Yes	Yes			Yes	
Declining civilian oversight of the military	Yes					Yes				Yes
Lack of Right-wing Purges in the Military	Yes							Yes		

Table 7: Moderation or Radicalization: Hypothetical Consequences Across the Political Spectrum

Leftist Government Policies	Voters			
	Extreme Left	Center Left	Center Right	Extreme Right
Moderation	Defect	Support	Splits: 1/3 support; 1/3 ambivalent; 1/3 defect	Defects
Radicalization	Support	Splits: 2/3 support; 1/3 ambivalent	Splits: 1/4 ambivalent; 3/4 defects	Defects (Turns Extremist)

Table 7: Impact of moderation and radicalization on voters' political loyalties toward incumbents

	Hypothetical Voter Distribution Across Political Spectrum				Outcomes: Political Loyalties		
	EL	CL	CR	ER	Supportive	Ambivalent	Defectors
<b>CENTER FORCES DOMINATE</b>							
<b>A. Extremists are weak minority</b>	10	40	40	10			
Moderation					53.2	13.2	33.2
Radicalization					36.4	23.2	40
<b>B. Extremists are strong minority</b>	15	35	30	20			
Moderation					44.9	9.9	46.55
Radicalization					38.1	19.05	42.5
<b>LEFT IS STRONGER THAN RIGHT (60/40)</b>							
<b>C. Center-L Stronger than Extreme-L</b>	20	40	30	10			
Moderation					49.9	9.9	43.2
Radicalization					46.4	20.7	32.5
<b>D. Extreme-L as Strong as Center-L</b>	30	30	25	15			
Moderation					38.25	8.25	54.9
Radicalization					49.8	16.15	33.75
<b>LEFT IS DOMINANT (65/35)</b>							
<b>E. Moderate Left is stronger</b>	30	35	25	10			
Moderation					43.25	8.25	51.55
Radicalization					53.1	17.8	28.75
<b>F. Extreme Left is dominant</b>	35	30	25	10			
Moderation					38.25	8.25	54.9
Radicalization					54.8	16.15	28.75
Notes: EL = Extreme left; CL = Center-left; CR = Center-right; ER = Extreme right Grey: Government's strategy that maximizes supporters relative to opponents To determine supporters, ambivalent groups and defectors, the rules in Table 7 were applied to the values in the "Hypothetical Voter Distribution" Column.							

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**Comment [JC13]:** Comments to follow up on:

1. Demostrar que el ajuste en Ven fue profundo en comparación a AL, pero no lo suficiente para compensar la caída de la renta petrolera.
2. Hay un composition shift. Los sectores que son mas labor intensives del sector público reciben menos ajuste (universidad y militares es un ejemplo), pero no están exentos. You can't FIRE them so you get rid of their other perks.
3. Monaldi: Estudiar el CONAC, que también otorgó subsidios culturales a la izquierda.
4. Hablar sobre la división de las izquierdas para con Chávez. Levitsky habló de que tradicionalmente la izq y el populismo no siempre se llevan.
5. Comparación con Perú y México. En ambos casos, las variables indep. Están presentes también.
6. De qué importa el supply. Siempre se pueden encontrar universitarios de izquierda locos que quieran cooperar con esto.

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# CHAPTER 14:

## Oil, Macro Volatility and Crime in the Determination of Beliefs in Venezuela

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### Abstract

We use data on political beliefs (broadly, left-right position, meritocracy and origins of poverty) to discuss Venezuela's economic institutions. Our starting point is the large role attributed to beliefs in determining the economic system and the extent of government intervention (see, for example, Alesina *et al*, 2001). This brings us to the question of what causes changes in beliefs. We briefly discuss and present some evidence consistent with the idea that some of the main social and economic forces that affected Venezuela this century may have changed people's rational beliefs. These include a dependence on oil, a history of macro-economic volatility, the rise in crime and the rise in a preoccupation with corruption. We end up with a cautionary result: although these results point in the direction of giving a role to real shocks in the determination of beliefs, we test and find that perceptions for different phenomena are sometimes correlated. In particular, the perception of corruption is related to the perception of crime rather than the amount of real corruption actually experienced.

JEL: P16, E62.

*Keywords:* beliefs, oil, crime, corruption, macro volatility, perceptions, causality.

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## I. Introduction

In an important paper, Piketty (1995) showed how beliefs could be central to economic organization. He focused on beliefs concerning the income generating process and argued that when income was determined by luck, rational agents would be inclined to increase taxes. In contrast, when effort played a large role, rational agents fearing adverse incentive effects would moderate taxes. He then argued that, even if there was one fixed reality, two agents who started with prior beliefs at each end of the spectrum would not necessarily converge as long as agents could not freely find credible information to generalize from their own experience. In fact, he argued that information on how much effort really pays is not easy to observe (given that effort input is not observable), and that eventually agents would settle on some belief about the likely value of these parameters and stop experimenting (a form of bandit problem). Generalizing to countries, he argued that tax choices would reinforce these beliefs: where effort doesn't pay and luck dominates, agents would tend to vote on high taxes and luck would then really dominate. Indeed, the key finding in Piketty's paper is that two different economic systems, one with high taxes and beliefs that luck matters that can be called the French equilibrium and another with low taxes and a belief that effort pays that can be called an American equilibrium, could arise out of the same underlying reality. Other papers that explore related ideas concern the role of upward mobility (Benabou and Ok, 2001), fairness (Alesina and Angeletos, 2002), belief in a just world (Benabou and Tirole, 2006) and corruption (Alesina and Angeletos, 2004 and Di Tella and MacCulloch, 2002). North and Denzau (1993) discuss institutions as "shared mental models" (see also Greif, 1994).

A belief-based explanation is attractive given the difficulties that the standard economic model (e.g., Meltzer and Richards, 1981) has in explaining the observed patterns of inequality and redistribution across Europe and the US. Indeed, these models are particularly relevant once one observes the remarkable differences in beliefs across the Atlantic. For instance, Alesina *et al* (2001) report that 60% of Americans - yet only 26% of Europeans - believe the poor are lazy, while spending on social welfare in 1995 in the US was 16% of GDP compared to an average of 25% for countries in Europe. See also Lipset and Rokkan (1967) and the evidence in Hochschild (1981), Alesina and La Ferrara (2005), Fong (2004) and Ladd and Bowman (1998) *inter alia*.

Given the centrality of beliefs in economic organization, it seems natural to ask what drives beliefs. Very little evidence (that has a causal interpretation) is available (but see Di Tella, Donna and MacCulloch, 2006, on the connection with crime; and Di Tella, Galiani and Schargrdosky, 2004, on the connection with property rights and a windfall gain). One extreme position is to argue that beliefs are cultural norms and are thus immutable. Alternatively, a rational learning process would posit their dependence on economic conditions. The latter hypothesis is particularly interesting in the context of Latin America, in general, and Venezuela, in particular, given their rather eventful history, with several traumatic and joyous events that may have affected beliefs simply because reality, at least for a while, appeared to have changed. The oil discoveries and the high prices during the 1970's, the macroeconomic crises and the crime waves are all candidate episodes to be explored.

In this paper, we take some of the likely forces that may have affected the formation of beliefs in Venezuela, explore their validity using data from a broader sample of countries, and then use the results to see how much of the Venezuelan experience they can explain.

In section II we discuss the role of a history of macroeconomic volatility, in section III we explore the role of a country's dependence on oil rents; in section IV we present further results on the role of corruption and beliefs (along the lines discussed in Di Tella and MacCulloch, 2002), while section V presents the correlations between beliefs and having been the victim of crime. Section VI studies the correlation between beliefs about a phenomenon (corruption) and the beliefs about a second phenomenon (crime) controlling for reality (i.e., the experience with corruption and the experience with crime). Section VII discusses the results in the context of Venezuela while section VIII offers some concluding comments.

## **II. Beliefs and a History of Macro Volatility**

In this section we study the correlation between a country's historical macroeconomic performance and their average beliefs in a cross-section of countries. We use the average values obtained from the 3<sup>rd</sup> wave of the World Values Survey to construct our measures of beliefs and the World Bank's World Development Indicators to construct our measures of macro volatility. The basic results are presented in Tables 1A-B. All regressions are estimated using OLS for simplicity (similar results are

obtained if ordered logits are estimated) and control for income (6 categories), gender and age.<sup>1</sup> Results in columns (1-4) in Table 1A focus on a general measure of beliefs: ideological self-placement on a 0-10 scale. These regressions are illustrative as a first broad pass at the data as clearly the answers are provided with some country-specific ideological content. It is still perhaps interesting to note that a history of inflation volatility tilts the survey answers significantly to the left. In order to get some sense of the size of the effect, note that a one standard deviation of the *History of Inflation Volatility* variable is associated with a decline of *Right Wing-R* of 5.8% of a standard deviation of this variable ( $-0.058=(329.1/2.33)*(-4.1e-04)$ ). Columns (2-4) in Table 1A presents similar regressions, using *History of GDP Growth Volatility*, *History of Exchange Rate Volatility* and *History of Unemployment*. The results are consistent (the coefficients are negative) although they are less precisely estimated.

Regressions (5-8) in Table 1A focus on a more interesting dimension of beliefs, namely *Unfair for Poor-L*, a dummy equal to 1 if the response to the question: “*Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? (1) They are poor because of laziness and lack of willpower, or (2) They are poor because society treats them unfairly*” is (2) and 0 if the answer is (1). Now the key coefficients are generally positive as expected (the variable is defined so that bigger numbers have a natural interpretation as being left) and significant for both a history of inflation volatility and a history of exchange rate volatility. A history of unemployment volatility is also positive, but only significant at the 15% level.

Columns (1-4) in Table 1B focus on the variable *No Escape-L* (all variable definitions are in the Appendix) and reveal that the volatility of inflation and of the exchange rate, as well as the history of unemployment, are correlated with more left-wing beliefs as expected. Columns (5-8) focus on *Business Owner-L*. Columns (5-6) are positive and significant, while column (7) is positive but only significant at the 11% level.

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<sup>1</sup> The controls are chosen to keep constant some basic set of personal characteristics of the respondents that may affect beliefs (although these are country averages, so their influence in this particular case is marginal) without sacrificing sample size.

### III. Beliefs and Oil

We now explore the hypothesis that economic dependence on oil causes the average beliefs in the country to lean towards the left-end of the political spectrum. The results are presented in Table 2, where we now focus on one summary variable of beliefs (ideological self-placement on a 1-10 scale) and regress the average country-year values against several measures of dependence on oil. One improvement over the previous section is that, given that we are no longer interested in historical background, we can exploit the time dimension of the values data and present panel regressions that control for country and year fixed effects. We adopt the convention that data from the WVS for wave 1 is matched to World Development Indicators data from 1981, for wave 2 to 1990 and wave 3 to 1997. All regressions control for age, gender and income of the respondents, although given representative sampling within countries this should not have a large influence in our results.<sup>2</sup> All standard errors adjusted for clustering at the country level.

Column (1) reports a negative coefficient, significant at the 13% level, indicating a tendency to move left when fuel exports (as a percentage of merchandise exports) increase. Column (2) uses logs and reports a somewhat larger and considerably more precise coefficient on the dependence on oil (it is significant at the 1% level). In terms of size, a one standard deviation of *Log Fuel Exports* is associated with a decline equal to 4.6% of a standard deviation in (right-wing) beliefs.

The rest of the table switches to other measures of income's dependence on luck in the country. Column (3) focuses on ores and metal exports as a percentage of merchandise exports. The coefficient is negative but insignificant. Column (4) uses logs, and finds a negative coefficient significant at the 8% level. In terms of size, a one standard deviation of *Log Ores Exports* is associated with a decline equal to 3.5% of a standard deviation in beliefs. Columns (5-6) present weaker results (but still with the expected sign) using *Manufacturing Exports* and its log.

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<sup>2</sup> When we add gender as personal control in the regressions of Table 2A, Mexico's observations for the first wave are lost. This might be significant as Mexico is a gross outlier, with the largest reduction in dependence on fuel exports, all concentrated in the first two waves, and the largest decline in *Right Wing* inclinations.

#### IV. Beliefs and Corruption

In Table 3 we explore the relationship between ideological inclination and corruption. When corruption is widespread, the legitimacy of profits and business is called into question and individuals will be attracted to left-wing ideas, particularly in the economic sphere (see Di Tella and MacCulloch, 2002, 2006). It uses a corruption variable as coded by experts working for Political Risk Services, a private international investment risk service. Introduced into economics by Knack and Keefer (1995), the International Country Risk Guide (ICRG) corruption index has been produced annually since 1982 and intends to capture the extent to which “high government officials are likely to demand special payments” and “illegal payments are generally expected throughout lower levels of government” in the form of “bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans”.

Column (1) in Table 3 correlates the average ideological inclination in the country with the perceived corruption level, controlling for country and year effects. The coefficient is negative as expected and significant at the 3% level. In terms of size, we note that a one standard deviation (within) in the ICRG corruption indicator is associated with a decline in a country’s ideological inclination, *Right Wing-R*, equal to 3.7% of a standard deviation (within) of the ideological variable  $(-0.037=0.42*(-0.19)/2.15)$ . Column (2) shows that the same correlation using logs is weaker as it is only statistically significant at the 10.5% level.

#### V. Beliefs and Crime

In Table 4 we study the connection between crime and beliefs following Di Tella *et al* (2006). Such a connection might be expected when, for example, agents have incomplete information about the role of effort in the income generating process and the observation of crime informs agents about other people’s view of how much it pays to work hard (which is probably low, given that they have chosen crime). Indeed, the two equilibria in the Piketty (1995) model survive only as long as agents cannot observe how much effort others are putting in (and how much income they obtain). This requires that agents cannot reconstruct other people’s information set from their choices in the labor market or in the political market which is a somewhat artificial assumption given that vote outcomes are



well-known and also career choices (for example, criminal or not). In order to test this hypothesis we need data on people's beliefs and on their view of how much crime there is (or on their experience as victims of crime).

Such data can be found in the Latino-barometer, an annual public opinion survey of approximately 19,000 interviews in 18 countries in Latin America. Questions of interest rotate, so the number of waves (and thus our sample size) varies considerably depending on the question being studied. It is produced by Latinobarómetro Corporation, a non profit NGO based in Santiago, Chile. It has data on a number of attitudinal variables that are associated with ideological standing (on an economic dimension). From the long list we choose two that are suitable for our purposes. One concerns the fairness of the distribution of income and the other concerns how successful were privatizations. The exact data is *Fair-L* (Now I'd like you some questions about the problem of poverty, in this country and in other countries: How fair do you think the distribution of income is in this country? The four possible answers are 1. Very fair; 2. Fair; 3. Unfair; and 4. Very unfair) and *Privatiz-L* (Do you agree or disagree with the following statement: The Privatization of public companies has been beneficial to the country? The two possible answers are 1. I agree; and 2. I disagree).

In columns (1-2) of Table 4 we correlate these beliefs question with *Perception of crime*, the answer to the question "Crime has increased or decreased?". The possible answers are coded such that it takes the value 0 if the answer is "Has increased a lot" and 1 if it is "Has increased a little", "Has stayed the same", "Has fallen a little" or "Has fallen a lot". We collapse the answers into two because, although there are four categorical answers to this question, the overwhelming majority chooses one option. The raw data show that 96,358 individuals selected the answer "crime has increased a lot over the past year", while 14,610 say "it has increased somewhat", 8,591 say it has stayed the same, 2,904 say it has dropped somewhat and 439 say it has dropped a lot. We repeated the analysis using the four categories and all the results remain qualitatively similar. Both coefficients are negative as expected and significant. Note that this is unlikely to reflect a fixed trait of the respondents because such a fixed characteristic is most likely ideological orientation: right wing individuals are always complaining that crime is a terrible thing and also tend to think that the distribution of income is fair. In this case the connection goes the opposite way so, at least in this regard, it is an underestimate of the true effect. We also include a set of control variables that help ameliorate this concern, including age, gender income as well as year and country fixed effects.

Columns (3-4) move to *Real Crime* as independent variable, namely whether the respondent (or a relative of the respondent) was a victim of crime over the previous year. Again, both coefficients are negative and comfortably significant. Now the potential confounding effect is not an ideological fixed effect but rather some omitted variable such as income, which determines that you are both the victim of crime and that you hold left wing views. Columns (5-6) repeat the exercise with a broader set of controls. These include age, gender, dummies for city size and all the previous explanatory variables but using a new measure of each respondent's income. A person's declared income level is now captured by the question: "The wage or salary you receive and the total family income, Does it allow you to satisfactorily cover your needs? In which of these situations are you?" The possible answers are: "It is good enough, you can save", "It is just enough, without great difficulties", "It is not enough, you have difficulties" and "It is not enough, you have great difficulties". The results are again supportive of the hypothesis that an experience with crime moved individuals to the left-end of the political spectrum. In auxiliary regressions we included controls for educational attainment, a person's ideological self-placement and simultaneous controls for both measures of income and obtained similar results.

## **VI. Perceptions versus Reality**

Having established that perceptions of corruption and crime affect ideological inclination, it is interesting to explore what drives these perceptions. Is it reality, so that people's perception of corruption follows the fact that there is more corruption? Or is it that these perceptions are like "moods" that can get divorced from reality? In a recent paper, Olken (2006) shows that there can be a substantial divorce between reality and perceptions using Indonesian data.

One possible strategy is to evaluate if the perception of a certain phenomenon is related strongly to the experience of that phenomenon or the perception of a (presumably unrelated) phenomenon. In Table 5 we present regressions for *Perception of Corruption* on *Real Corruption*. The coefficient is positive and significant, suggesting that reality does affect perceptions. Regression (2) includes year fixed effects and the coefficient remains unaffected. Regression (3) shows that when we include the perception and reality of a second phenomenon, crime, the coefficient on *Real Corruption* is almost

halved and is now statistically insignificant. Interestingly, the coefficient on *Perception of Crime* is positive and statistically well-defined (while *Real Crime* is uncorrelated with *Perception of Corruption*). *Real Crime* is included as a reassurance that actual crime is being kept constant (although its inclusion does not affect the conclusions). The size of the coefficient is extremely large, suggesting that the role of perceptions (generally) is important, potentially overwhelming the impact of reality. To get a sense of the relative size, note that a one standard deviation increase in *Real Corruption* is associated with an increase in *Perceived Corruption* equal to less than 1% of a standard deviation in that variable ( $0.009=(0.43/0.68)*0.015$ ). In contrast, a one standard deviation increase in *Perception of Crime* is associated with an increase in *Perception of Corruption* equal to 53% of a standard deviation ( $0.53=(0.74/0.68)*0.49$ ). *Real Crime* has virtually no effect (just over 1.4% in standardized units).

Regressions (5-6) repeat the exercise for Venezuela and reveal that the same phenomenon applies there. This suggests that perceptions of corruption (and of other “bads”) are driven not by reality, but rather by some other force. We conjecture that this makes the electorate particularly receptive to “political activists” who supply beliefs, as in Glaeser’s (1995) model of hatred.

## VII. The Case of Venezuela

We can apply the above results to the case of Venezuela. We first focus on the role of volatility of the economy. High levels of volatility may mean that the connection between effort and reward is lost. This may in turn affect people’s (right-left) beliefs about the degree of regulation and taxation that is required for their society. Venezuela lies in the top quarter of the countries in our sample in terms of both inflation and unemployment volatility. An increase in inflation (unemployment) volatility from US to Venezuelan levels explains 6.9% (24.8%) of the difference in leftist beliefs about the degree to which the poor have been treated unfairly and 4.3% (21.0%) of the difference in leftist beliefs about the chances of escaping from poverty between these two nations (see Tables 1A and 1B).

Another striking feature of Venezuela is its’ unusually high dependence on natural resources, in particular oil. To the extent that this country relies on abundant natural resources, becoming wealthy may be more associated with success in capturing rents and belonging to the elite, rather than on

working hard in competitive industries. Venezuela has the second highest level of fuel exports as a proportion of total merchandise exports across all the countries in our sample (at 78.9%). The highest proportion is Nigeria (see Figure 1). A high dependence on oil may also be one of the causes of the increased unemployment and inflation volatility discussed above (see, inter alia, Carruth, Hooker and Oswald, 1998). An increase in fuels as a proportion of total merchandise exports from US to Venezuelan levels is predicted to push an individual toward having more leftist beliefs by 1.1 units on the 0-10 right-left scale (see Table 2).

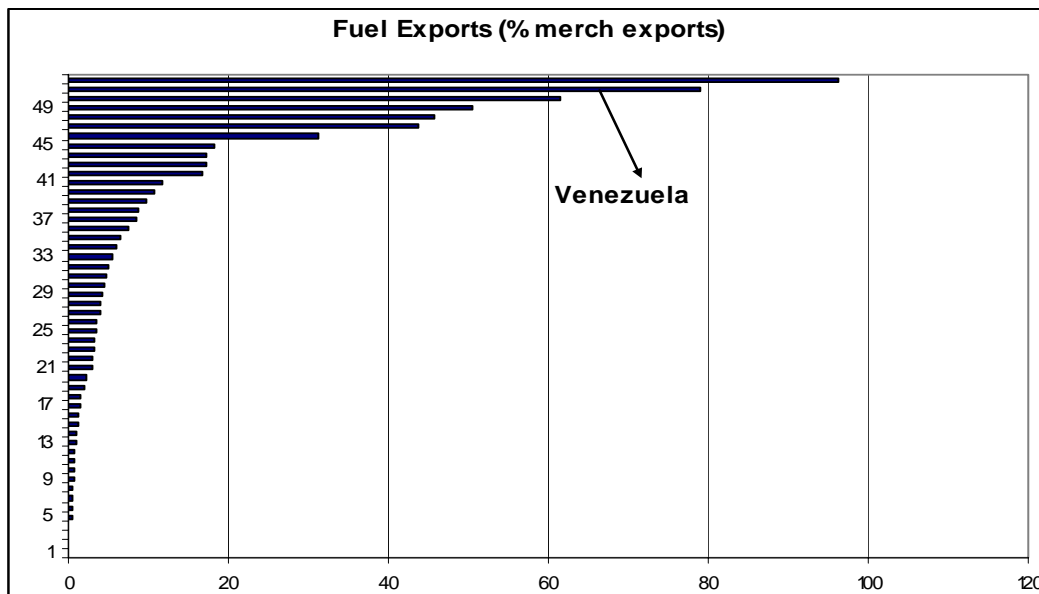


Figure 1: Ordered Ranking of Fuels Exports as a Proportion of Total Merchandise Exports for Sample

Turning to corruption, the International Country Risk Guide (ICRG) index places Venezuela in the bottom 13% of nations in our sample. An increase in the corruption index from US to Venezuelan levels is predicted to push an individual toward having more leftist beliefs by 0.24 units on the 0-10 right-left scale (see Table 3). We also noted earlier how higher observed crime rates may lead people to believe that effort exerted in legal labour market activities is not rewarding thereby affecting their political beliefs. An increase from the lowest to the highest average measures of *Perception of Crime* recorded between 1995 and 2001 within Venezuela explains 15.4% of the range of leftist values as measured by ‘fairness of the distribution of income’ (see Table 4).

## VIII. Conclusions

The starting point of this paper is the fact that the Venezuelan public is receptive to left wing, populist, anti-market rhetoric. This paper explores why. It uses anecdotal evidence to focus on four phenomena that appear to be widespread in Venezuela: a history of macro-volatility, an economic dependency on oil, a belief that corruption is widespread and the belief that there has been a crime wave in the country. These four phenomena are theoretically compatible with moving the electorate to the left, because macro-volatility and oil dependency mean that luck is important relative to effort in the determination of income, because corruption erodes the legitimacy of business (see for example Di Tella and MacCulloch, 2002) and because widespread crime gives us information about how badly other people (criminals) fared in the labor market. The evidence is consistent with the hypothesis that beliefs are correlated with these forces.

Although these points broadly in the direction of reality being an important factor in the formation of beliefs for some of the factors study (e.g., our data on oil dependency is from actual oil dependency), the data on corruption used on Di Tella and MacCulloch (2002) is based on the perception of corruption. Perceptions may sometimes be divorced from reality, as political players (like Hugo Chavez) can potentially affect the beliefs of the electorate (perhaps by attacking a political group for political gain). In an attempt to shed some light on the relative perception of reality, we run regressions of the perception of corruption on reality (personal experience with corruption) and on the perceptions of another phenomenon (the perceptions of how much has crime increased), controlling for reality. We note that the perceptions of corruption are strongly correlated with the perceptions of this second phenomenon (the increase in crime) and have a much weaker connection with the personal experience with corruption or crime (reality).

**Table 1A**  
**How Beliefs (General Ideology and ‘Poor are Lazy’) vary with Macro Volatility:**  
**Cross Section, 32 countries**

<i>Dependent variables:</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Right Wing-R</i>	<i>Right Wing-R</i>	<i>Right Wing-R</i>	<i>Right Wing-R</i>	<i>Unfair for Poor-L</i>	<i>Unfair for Poor-L</i>	<i>Unfair for Poor-L</i>	<i>Unfair for Poor-L</i>
<i>History of Inflation Volatility</i>	-4.1e-04 (1.3e-04)				1.5e-04 (3.9e-05)			
<i>History of GDP growth Volatility</i>		-0.018 (0.034)				-0.006 (0.015)		
<i>History of Exchange Rate Volatility</i>			-0.033 (0.027)				0.019 (0.007)	
<i>History of Unemployment</i>				-0.017 (0.022)				0.008 (0.005)
R-sq	0.013	0.010	0.003	0.011	0.018	1e-04	0.011	0.010
Number of Groups	32	32	32	32	31	31	31	31
Number of Obs.	31,585	31,585	31,585	31,585	27,120	27,120	27,120	27,120

**Notes:**

[1] Name of dependent variable has L (R) extension if higher numbers mean more Left (Right).

*Right Wing-R*: A categorical variable that is the answer to the question: “In politics people talk of the “left” and of the “right”. In a scale where “0” is left and “10” is right, where would you place yourself?”.

*Unfair for Poor-L*: A dummy that is the response to the question: “Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? (1) They are poor because of laziness and lack of willpower, or (2) They are poor because society treats them unfairly.” The dummy takes the value 1 if the answer is (2) and 0 if the answer is (1).

[2] All regressions are cross-section (3<sup>rd</sup> wave) OLS regressions. Standard errors (adjusted for clustering) are in parentheses. The regressions include a set of personal controls which include age, gender and *Income 1a* (which is the respondents declared income level as captured in the answer to the question: “People sometimes describe themselves as belonging to the lower class, the middle class, or the upper. How would you describe yourself?”).

[3] Right hand side variables are constructed using the World Bank’s World Development Indicators as follows:

*History of Inflation Volatility*: Average of the absolute value of the inflation (CPI) 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages in %.

*History of Growth Volatility*: Average of the absolute value of the GDP growth 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages in %.

*History of Exchange Rate Volatility*: Average of the absolute value of the Exchange Rate growth 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) calculated using the official exchange rate (LCU per US\$, annual average)

*History of Unemployment*: Average of the absolute value of the Unemployment rate 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages (% of total labor force).

**Table 1B**  
**How Beliefs ('Escape from Poverty' and 'Ownership of Business') vary with**  
**Macro Volatility: Cross Section, 32 countries**

<i>Dependent variables:</i>	(1) <i>No Escape-L</i>	(2) <i>No Escape-L</i>	(3) <i>No Escape-L</i>	(4) <i>No Escape-L</i>	(5) <i>Business Owner-L</i>	(6) <i>Business Owner-L</i>	(7) <i>Business Owner-L</i>	(8) <i>Business Owner-L</i>
<i>History of Inflation Volatility</i>	2.2e-04 (5.3e-05)				2.0e-04 (4.4e-05)			
<i>History of GDP growth Volatility</i>		-0.009 (0.022)				0.036 (0.005)		
<i>History of Exchange Rate Volatility</i>			0.029 (0.010)				0.024 (0.015)	
<i>History of Unemployment</i>				0.016 (0.008)				-8.2e-04 (0.005)
R-sq	0.024	0.007	0.015	0.023	0.032	0.057	0.014	0.007
Number of Groups	32	32	32	32	32	32	32	32
Number of Obs.	32,266	32,266	32,266	32,266	29,566	29,566	29,566	29,566

**Notes:**

[1] Name of dependent variable has L (R) extension if higher numbers mean more Left (Right).

*No Escape-L*: A dummy equal to 1 if the answer to the question: "In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping? (1) They have a chance or (2) There is very little chance." was category (2) and 0 if it was category (1).

*Business Ownership-L*: The response to the World Values question: "There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? (1) The owners should run their business or appoint the managers, (2) The owners and the employees should participate in the selection of managers, (3) The government should be the owner and appoint the managers, (4) The employees should own the business and elect the managers". *Business Ownership-L* was defined as a dummy equals 1 if the answer is category (3) or (4) and 0 if the answer is category (1) or (2).

[2] All regressions are cross-section (3<sup>rd</sup> wave) OLS regressions. Standard errors (adjusted for clustering) are in parentheses. The regressions include a set of personal controls which include age, gender and *Income 1a* (which is the respondents declared income level as captured in the answer to the question: "People sometimes describe themselves as belonging to the lower class, the middle class, or the upper. How would you describe yourself?").

[3] Right hand side variables are constructed using the World Bank's World Development Indicators as follows:

*History of Inflation Volatility*: Average of the absolute value of the inflation (CPI) 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages in %.

*History of Growth Volatility*: Average of the absolute value of the GDP growth 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages in %.

*History of Exchange Rate Volatility*: Average of the absolute value of the Exchange Rate growth 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) calculated using the official exchange rate (LCU per US\$, annual average)

*History of Unemployment*: Average of the absolute value of the Unemployment rate 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages (% of total labor force)

**Table 2**  
**Left Wing Beliefs and Dependence on Oil Rents: Panel Regressions**

<i>Dependent Variable:</i> <i>Right Wing-R</i>	(1)	(2)	(3)	(4)	(5)	(6)
<i>Fuel Exports</i>	-0.010 (0.006)					
<i>Log Fuel Exports</i>		-0.323 (0.092)				
<i>Ores Exports</i>			-0.065 (0.026)			
<i>Log Ores Exports</i>				-0.466 (0.256)		
<i>Manufacturing Exports</i>					0.006 (0.004)	
<i>Log Manufacturing Exports</i>						0.211 (0.204)
Adj R-sq	0.061	0.062	0.062	0.062	0.060	0.060
Between Number of Groups	24	24	24	24	24	24
Max Number of Groups	49	49	49	49	49	49
Number of Obs.	79,251	79,251	79,251	79,251	79,251	79,251

**Notes:**

[1] All regressions are OLS regressions and include country and year dummies. [2] Dependent variable is *Right Wing-R* a categorical variable that is the answer to the question: “In politics people talk of the “left” and of the “right”. In a scale where “0” is left and “10” is right, where would you place yourself?” and is obtained from the WVS. [3] *Fuel Exports* refers to ‘Fuel exports as % of merchandise exports’ and is obtained from the World Bank’s World Development Indicators. [4] *Ores Exports* refers to ‘Ores and metals exports as % of merchandise exports’ and is obtained from the World Bank’s World Development Indicators. [5] *Manufacturing Exports* refers to “Manufactures exports as % of merchandise exports” and is obtained from the World Bank’s World Development Indicators. [6] *Merchandise Exports* show the f.o.b. value of goods provided to the rest of the world valued in U.S. dollars. They are classified using the Standard International Trade Classification (SITC). In particular, the World Bank figures distinguish between ‘Merchandise Exports’ and “Exports of Services”. [7] *Log Variable Name* refers to the natural log of *Variable Name*. [8] All regressions control for age, gender and *Income Ia*. [9] *Income Ia*: The respondents declared income level as capture in the question “People sometimes describe themselves as belonging to the lower class, the middle class, or the upper. How would you describe yourself?” [10] Standard errors on *Fuel Exports*, *Log Fuel Exports*, *Ores Exports*, *Log Ores Exports*, *Manufacturing Exports* and *Log Manufacturing Exports* adjusted to take account of clustering within countries. [11] Clustered standard errors in parentheses.



**Table 3**  
**How Left Wing Beliefs vary with Corruption: Panel Regressions**

<i>Dependent Variable: Right Wing-R</i>	<i>(1)</i>	<i>(2)</i>
<i>Corruption</i>	-0.190 (0.086)	
<i>Log Corruption</i>		-0.262 (0.157)
Adj R-sq	0.067	0.061
Between Number of Groups	25	25
Max Number of Groups	36	36
Number of Obs.	66,144	66,144

**Notes:**

[1] All regressions are OLS regressions and include country and year dummies. [2] Dependent variable is *Right Wing-R*, a categorical variable that is the answer to the question: “In politics people talk of the “left” and of the “right”. In a scale where “0” is left and “10” is right, where would you place yourself?” and is obtained from the WVS. [3] *Corruption* is obtained the ICRG. See Knack and Keefer (1995). [7] *Log Corruption* refers to the natural log of Corruption. [8] All regressions control for age, gender and *Income Ia*. [9] *Income Ia*: The respondents declared income level as captured by the question “People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. How would you describe yourself?” [10] Standard errors on *Corruption* and *Log Corruption* adjusted to take account of clustering within countries. [11] Clustered standard errors in parentheses.

**Table 4**  
**How Left Wing Beliefs vary with Crime: Panel Regressions**

<i>Dependent Variables:</i>	LATIN AMERICA							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Fair-L</i>	<i>Privatiz-L</i>	<i>Fair-L</i>	<i>Privatiz-L</i>	<i>Fair-L</i>	<i>Privatiz-L</i>	<i>Fair-L</i>	<i>Privatiz-L</i>
<i>Perception of Crime</i>	-0.283 (0.012)	-0.051 (0.005)			-0.237 (0.014)	-0.050 (0.005)		
<i>Real Crime</i>			-0.031 (0.009)	-0.011 (0.004)			-0.022 (0.011)	-0.010 (0.004)
Personal Controls I	Yes	Yes	Yes	Yes	No	No	No	No
Personal Controls II	No	No	No	No	Yes	Yes	Yes	Yes
Pseudo Rsq	0.082	0.045	0.072	0.044	0.105	0.045	0.099	0.042
Max No. of Groups	17	17	17	17	17	17	17	17
Between No. Groups	17	17	17	17	15	17	15	17
No of Observations	47,283	53,107	47,231	68,738	35,267	51,827	35,181	66,323

**Notes:**

[1] Name of dependent variable has L (R) extension if higher numbers mean more Left (Right). [2] All regressions are OLS regressions and include country and year dummies. [3] All variables are obtained from the Latinobarómetro. [4] Standard errors in parentheses. [5] *Perception of Crime* is a dummy that equals 0 if the answer to the question “Crime has increased or decreased?” is “Has increased a lot” and 1 if it is “Has increased a little”, “Has stayed the same”, “Has fallen a little” or “Has fallen a lot”. [6] *Real Crime* is a categorical variable equal to 1 if the answer to the question: “Have you or a relative of yours been a victim of an assault, an aggression, or a crime, in the last 12 months?” is “Yes”, and 2 if the answer is “No”. [7] Personal Controls I: age, gender and *Income Ib*. Personal Controls II: age, gender, *Income Ib*, and *City Size*. [8] *Income Ib*: The respondents declared income level as capture in the question “The wage or salary you receive and the total family income, Does it allow you to satisfactorily cover your needs? In which of these situations are you?” The possible answers are “It is good enough, you can save”, “It is just enough, without great difficulties”, “It is not enough, you have difficulties” and “It is not enough, you have great difficulties”. [9] *City Size*: The size of the city where the interview takes place. The 2 possible categories are 1 if “100,000 or less” and 2 if “capital or more than 100,000”. [10] Dependent variables are the answers to the questions:

**Columns (1,3,5,7)**

*Fair-L*: Now I'd like you some questions about the problem of poverty, in this country and in other countries: How fair do you think the distribution of income is in this country? The five possible answers are 1. Very fair; 2. Fair; 3. Neither Fair nor unfair; 4. Unfair; and 5. Very unfair.

**Columns (2,4,6,8)**

*Privatiz-L*: Do you agree or disagree with the following statement:  
The Privatization of public companies has been beneficial to the country. The two possible values are 1. I agree (if the answer to the question is: I completely agree or I agree); and 2. I disagree (if the answer to the question is: I completely disagree or I disagree).

**Table 5**  
**How Perceptions of Corruption vary with Real Corruption,**  
**Perception of Crime and Real crime: Panel Regressions**

<i>Dependent Variable:</i> <i>Perception of Corruption</i>	LATIN AMERICA				VENEZUELA	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Real Corruption</i>	0.028 (0.012)	0.028 (0.012)	0.015 (0.011)	0.015 (0.011)	0.069 (0.064)	0.068 (0.059)
<i>Perception of Crime</i>			0.490 (0.007)	0.490 (0.007)		0.660 (0.044)
<i>Real Crime</i>			0.011 (0.010)	0.011 (0.010)		-0.028 (0.054)
<i>Year dummy</i>	NO	YES	NO	YES	Year: 2001	Year: 2001
R <sup>2</sup> overall	0.009	0.010	0.217	0.220	0.036	0.211
No. of Groups	17	17	17	17		
Obs	17,564	17,564	17,564	17,564	1,037	1,037

**Notes:**

[1] All regressions are OLS regressions. [2] Dependent variable is *Perception of Corruption* a categorical variable equal 1 if the answer to the question “Corruption has increased or decreased?” is “Has increased a lot”, 2 if it is “Has increased a little”, 3 if it is “Has stayed the same”, 4 if it is “Has fallen a little” and 5 if it is “Has fallen a lot”. [3] *Real Corruption* is a categorical variable equal to 1 if the answer to the question: “Have you or a relative of yours been a victim of corruption, in the last 12 months?” is “Yes”, and 2 if the answer is “No”. [4] *Perception of Crime*, a categorical variable equal 1 if the answer to the question “Crime has increased or decreased?” is “Has increased a lot”, 2 if it is “Has increased a little”, 3 if it is “Has stayed the same”, 4 if it is “Has fallen a little” and 5 if it is “Has fallen a lot”. [5] *Real Crime* is a categorical variable equal to 1 if the answer to the question: “Have you or a relative of yours been a victim of an assault, an aggression, or a crime, in the last 12 months?” is “Yes”, and 2 if the answer is “No”. [6] All regressions control for: age, gender, *Income Ib* and *Right Wing-R*. [7] *Income Ib*: The respondents declared income level as capture in the question “The wage or salary you receive and the total family income, Does it allow you to satisfactorily cover your needs? In which of these situations are you?” The possible answers are “It is good enough, you can save”, “It is just enough, without great difficulties”, “It is not enough, you have difficulties” and “It is not enough, you have great difficulties”. [8] *Right Wing-R*, is the answer to the World Values question: “In politics people talk of the “left” and of the “right”. In a scale where “0” is left and “10” is right, where would you place yourself?”. [9] Standard errors in parentheses.

**Table 6**  
Summary Statistics for the Aggregate Variables  
(Latinobarómetro, WVS, World Bank).

Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Table
<i>Right Wing-R</i> - between - within	Total= 31,585 n=32 T-bar= 987.031	5.71	2.33 0.68 2.26	1 4.77 -0.33	10 7.93 10.94	1A
<i>Unfair for Poor-L</i> - between - within	Total= 27,120 n=31 T-bar= 874.839	0.71	0.45 0.13 0.43	0 0.40 -0.15	1 0.86 1.31	1A
<i>No Escape-L</i> - between - within	Total= 32,266 n=32 T-bar= 1008.31	0.59	0.49 0.19 0.45	0 0.12 -0.27	1 0.86 1.47	1B
<i>Business Owner-L</i> - between - within	Total= 29,566 n=32 T-bar= 923.938	0.23	0.42 0.14 0.40	0 0.4 -0.34	1 0.57 1.19	1B
<i>History of Inflation Volatility</i> - between - within	Total= 31,585 n=32 T-bar= 987.031	169.30	329.10 306.20 0	0.80 0.80 1219.82	1219.82 1219.82 169.30	1A
<i>History of GDP growth Volatility</i> - between - within	Total= 31,585 n=32 T-bar= 987.031	4.88	2.31 2.30 0	0.82 0.82 4.88	12.47 12.47 4.88	1A
<i>History of Exchange Rate Volatility</i> - between - within	Total= 31,585 n=32 T-bar= 987.031	0.81	1.79 1.72 0	1.9e-03 1.9e-03 0.81	7.62 7.62 0.81	1A
<i>History of Unemployment</i> - between - within	Total= 31,585 n=32 T-bar= 987.031	7.91	4.30 4.97 0	0.50 0.50 7.91	22.32 22.32 7.91	1A
<i>... continued next page</i>						

*continued from previous page...*

Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Table
<i>Right Wing-R</i> - between - within	Total= 79,251 n=49 T-bar= 1,617.37	5.56	2.21 0.62 2.14	1 4.26 -0.47	10 7.93 11.30	2A
<i>Fuel Exports</i> - between - within	Total= 79,251 n=49 T-bar= 1,617.37	12.65	20.50 20.63 2.79	0.01 0.01 -1.81	96.28 96.28 25.73	2A
<i>Log Fuel Exports</i> - between - within	Total= 79,251 n=49 T-bar= 1,617.37	1.35	1.78 2.03 0.31	-5.11 -5.11 0.60	4.57 4.57 2.15	2A
<i>Ores Exports</i> - between - within	Total= 79,251 n=49 T-bar= 1,617.37	6.33	9.50 9.70 0.91	0.01 0.01 2.26	54.61 52.15 8.78	2A
<i>Log Ores Exports</i> - between - within	Total= 79,251 n=49 T-bar= 1,617.37	1.12	1.41 1.51 0.16	-4.22 -4.22 0.55	4.00 3.95 1.65	2A
<i>Manufacturing Exports</i> - between - within	Total= 79,251 n=49 T-bar= 1,617.37	59.72	24.72 26.09 4.18	3.36 3.36 41.99	95.89 95.35 79.33	2A
<i>Log Manufacturing Exports</i> - between - within	Total= 79,251 n=49 T-bar= 1,617.37	3.93	0.68 0.74 0.08	1.21 1.21 3.45	4.56 4.56 4.26	2A
<i>Right Wing-R</i> - between - within	Total= 66,144 n=36 T-bar= 1,837.33	5.61	2.21 0.64 2.15	1 4.58 -0.43	10 7.93 11.02	3
<i>Corruption</i> - between - within	Total= 66,144 n=36 T-bar= 1,837.33	2.46	1.38 1.36 0.42	1 1 1.20	5 5 3.78	3
<i>Log Corruption</i> - between - within	Total= 66,144 n=36 T-bar= 1,837.33	0.73	0.60 0.58 0.23	0 0 0.01	1.61 1.61 1.11	3

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Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Table
<i>Fair-L</i> - between - within	Total= 47,283 n=17 T-bar= 2,781.35	4.00	1.03 0.19 1.00	1 3.64 0.65	5 4.35 5.36	4
<i>Privatiz-L</i> - between - within	Total= 53,107 n=17 T-bar= 3,123.94	1.65	0.48 0.08 0.47	1 1.44 0.88	2 1.77 2.22	4
<i>Perception of Crime</i> - between - within	Total= 47,283 n=17 T-bar= 2,781.35	0.20	0.40 0.11 0.39	0 0.06 -0.23	1 0.43 1.14	4

## **Appendix 2: Survey Descriptions World Values Survey**

### World Values Survey and European Values Survey (1981-84, 1990-92, 1995-97)

The Combined World Values Survey is produced by the Institute for Social Research, Ann Arbor, MI, USA. The series is designed to enable a cross-national comparison of values and norms on a wide variety of norms and to monitor changes in values and attitudes across the globe. Both national random and quota sampling were used. All of the surveys were carried out through face-to-face interviews, with a sampling universe consisting of all adult citizens, aged 18 and older, across over 60 nations around the world. The 1981-83 survey covered 22 independent countries; the 1990-93 survey covered 42 independent countries; the 1995-97 survey covered 53 independent countries. In total, 64 independent countries have been surveyed in at least one wave of this investigation (counting East Germany as an independent country, which it was when first surveyed). These countries include almost 80 percent of the world's population. A fourth wave of surveys is being carried out in 1999-2000. The full set of countries covered is: Argentina, Armenia, Australia, Austria, Azerbaijan, Belgium, Bangladesh, Bulgaria, Bosnia-Herzegovina, Belarus, Brazil, Canada, Switzerland, Chile, China, Colombia, Czech Republic, East and Unified Germany, Denmark, Dominican Republic, Spain, Estonia, Finland, France, United Kingdom, Georgia, Ghana, Croatia, Hungary, India, Ireland, Northern Ireland, Iceland, Italy, Japan, South Korea, Lithuania, Latvia, Madagascar, Mexico, Macedonia, Montenegro, The Netherlands, Norway, Pakistan, Peru, Philippines, Poland, Puerto Rico, Portugal, Russia, Slovak Republic, Slovenia, Sweden, Turkey, Taiwan, Ukraine, Uruguay, United States of America, Venezuela, South Africa, Moscow, Tambov oblast, Montenegro, Spain, Nigeria, Romania, Moldova and Serbia.

*Income Ia:* The respondents declared income level as capture in the question “People sometimes describe themselves as belonging to the lower class, the middle class, or the upper. How would you describe yourself?”

*Right Wing-R:* is a categorical variable that is the answer to the question: “In politics people talk of the “left” and of the “right”. In a scale where “0” is left and “10” is right, where would you place yourself?”.

*Unfair for Poor-L:* A dummy that is the response to the question: “Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? (1) They are poor because of laziness and lack of willpower, or (2) They are poor because society treats them unfairly.” The dummy takes the value 1 if the answer is (2) and 0 if the answer is (1).

*No Escape-L:* A dummy equal to 1 if the answer to the question: “In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping? (1) They have a chance or (2) There is very little chance.” was category (2) and 0 if it was category (1).

*Government help Poor-L:* The response to the World Values question: “Do you think that what the government is doing for people in poverty in this country is about the right amount, too much, or too little? (1) Too much, (2) About the right amount, or (3) Too little.”. *Government help Poor-L* is a categorical variable equal 1 if the answer is (1), 2 if the answer is (2) and 3 if the answer is (3).

*Business Ownership-L:* The response to the World Values question: “There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? (1) The owners should run their business or appoint the managers, (2) The owners and the employees should participate in the selection of managers, (3) The government should be the owner and appoint the managers, (4) The employees should own the business and elect the managers”. *Business Ownership-L* was defined as a dummy equals 1 if the answer is category (3) or (4) and 0 if the answer is category (1) or (2).

*Fair Pay-L*: The response to the World Values question: “Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns considerably more than she does. The better paid secretary, however, is quicker, more efficient and more reliable at her job. In your opinion, is it fair or not fair that one secretary is paid more than the other? (1) Fair or (2) Not fair.”. *Fair Pay-R* was defined as a dummy equals 1 if the answer is category (2) and 0 if the answer is category (1).

### **Appendix 2 (continued): Latinobarometro**

The Latinobarometro Survey, an annual public opinion survey of approximately 19,000 interviews in 18 countries in Latin America. Questions of interest rotate, so the number of waves (and thus our sample size) varies considerably depending on the question being studied. It is produced by Latinobarómetro Corporation, a non profit NGO based in Santiago, Chile. It surveys development of democracies, economies and societies and we are particularly interested in a number of attitudinal variables that are associated with ideological standing (on an economic dimension). Just like the WVS, it is designed to enable a cross-national comparison of values and norms on a variety of topics. As far as we can tell, a national random sampling were used, and the surveys were carried out through face-to-face interviews, with a sampling universe consisting of adult citizens, aged 18 and older. The countries covered are Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela and Spain.

*Perception of Crime* is a dummy that equals 0 if the answer to the question “Crime has increased or decreased?” is “Has increased a lot” and 1 if it is “Has increased a little”, “Has stayed the same”, “Has fallen a little” or “Has fallen a lot”.

*Real Crime* is a categorical variable equal to 1 if the answer to the question: “Have you or a relative of yours been a victim of an assault, an aggression, or a crime, in the last 12 months?” is “Yes”, and 2 if the answer is “No”.

*Perception of Corruption* is a categorical variable equal 1 if the answer to the question “Corruption has increased or decreased?” is “Has increased a lot”, 2 if it is “Has increased a little”, 3 if it is “Has stayed the same”, 4 if it is “Has fallen a little” and 5 if it is “Has fallen a lot”.

*Real Corruption* is a categorical variable equal to 1 if the answer to the question: “Have you or a relative of yours been a victim of corruption, in the last 12 months?” is “Yes”, and 2 if the answer is “No”.

*Right Wing*, is the answer to the question: “In politics people talk of the “left” and of the “right”. In a scale where “0” is left and “10” is right, where would you place yourself?”.

*Fair-L*: Now I'd like you some questions about the problem of poverty, in this country and in other countries: How fair do you think the distribution of income is in this country? The four possible answers are 1. Very fair; 2. Fair; 3. Unfair; and 4. Very unfair.

*Privatiz-L*: Do you agree or disagree with the following statement: The Privatization of public companies has been beneficial to the country. The two possible answers are 1. I agree; and 2. I disagree.

*Age*: The respondent's age, in years.

*Gender*: The respondent's gender.



*Income Ib:* The respondents declared income level as capture in the question “The wage or salary you receive and the total family income, Does it allow you to satisfactorily cover your needs? In which of these situations are you?” The possible answers are “It is good enough, you can save”, “It is just enough, without great difficulties”, “It is not enough, you have difficulties” and “It is not enough, you have great difficulties”.

*City Size:* The size of the city where the interview takes place. The 2 possible categories are 1 if “100,000 or less” and 2 if “capital or more than 100,000”.

## **Appendix 2 (continued): World Development Indicators (World Bank)**

WDI Online is a data source on the global economy. It contains statistical data for over 600 development indicators and time series data from 1960-2004 (selected data for 2005) for over 200 countries and 18 country groups. Data includes social, economic, financial, natural resources, and environmental indicators.

*Inflation, consumer prices (annual %):* Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a fixed basket of goods and services. In general, a Laspeyres index formula is used.

*GDP growth (annual %):* Annual percentage growth rate of GDP at market prices based on currency. Aggregates are based on constant U.S. dollars. GDP measures the total output of goods and services for final use occurring within the domestic territory of a given country, regardless of the allocation to domestic and foreign claims. Gross domestic product at purchaser values (market prices) is the sum of gross value added by all resident and nonresident producers in the economy plus any taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

*Official exchange rate (LCU per US\$, annual average):* Official exchange rate refers to the actual, principal exchange rate and is an annual average based on monthly averages (local currency units relative to U.S. dollars) determined by country authorities or on rates determined largely by market forces in the legally sanctioned exchange market.

*Unemployment Total (% of total labor force):* Unemployment refers to the share of the labor force without work but available for and seeking employment. Definitions of labor force and unemployment differ by country.

*History of Inflation Volatility:* Average of the absolute value of the Inflation (consumer prices) 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages in %.

*History of Growth Volatility:* Average of the absolute value of the GDP growth 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages in %.

*History of Exchange Rate Volatility:* Average of the absolute value of the official exchange rate growth 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) calculated using the official exchange rate (LCU per US\$, annual average)

*History of Unemployment:* Average of the absolute value of Unemployment Total (% of total labor force) 1993-1997 (5 years before the 3<sup>rd</sup> wave of the WVS) using annual averages.

*Fuel Exports:* Refers to Fuel exports as % of merchandise exports. Fuels comprise SITC revision 1, section 3 (mineral fuels).

*Ores Exports:* Refers to ores and metals exports as % of merchandise exports. Ores and metals comprise commodities in SITC revision 1, sections 27 (crude fertilizer, minerals nes); 28 (metalliferous ores, scrap; and 68 non-ferrous metals).

*Manufacturing Exports:* Refers to Manufactures exports as % of merchandise exports. Manufactures comprise commodities in SITC revision 1, sections 5 through 9 (chemicals and related products, basic manufactures, machinery and transport equipment, other manufactured articles and goods not elsewhere classified) excluding division 68 (non-ferrous metals).

*Merchandise exports* show the f.o.b. value of goods provided to the rest of the world valued in U.S. dollars. They are classified using the Standard International Trade Classification (SITC). In particular, the World Bank figures distinguish between "Merchandise Exports" (Exports of things that you can touch) and "Exports of Services", like shipping, tourism, and communications

*Corruption:* The International Country Risk Guide (ICRG) corruption index has been produced annually since 1982 by Political Risk Services, a private international investment risk service. It is measured on a 0 to 6 scale. The index is based on the opinion of experts, and intends to capture the extent to which "high government officials are likely to demand special payments" and "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans".

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