RENT SEEKING, INSTITUTIONS, AND COMMITMENT: THE POLITICAL ECONOMY OF FOREIGN INVESTMENT IN THE VENEZUELAN OIL INDUSTRY

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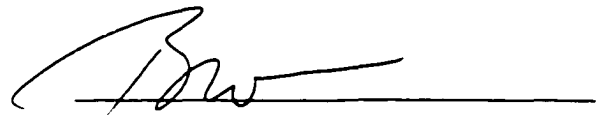

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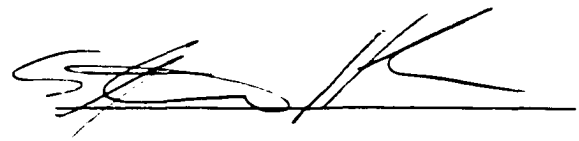

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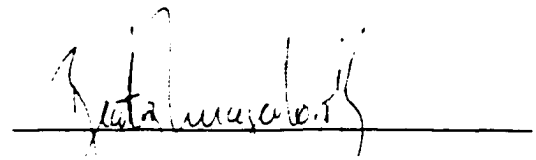

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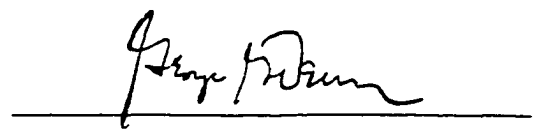

ABSTRACT

How can governments attract foreign investment to high sunk cost industries, which they have expropriated in the recent past? Foreign direct investment in high sunk cost sectors, such as mining and infrastructure, can be a significant source of economic growth in developing countries. The problem is that there are high intrinsic expropriation risks in this type of sector, as revealed by the historical precedent of recurring government reneging. As a result, investors would not deploy their capital unless the government credibly commits to respect their property rights.

The evolution of the oil industry constitutes a prototypical example of the pattern of expropriation in sunken investments. In Venezuela, as in most developing countries, the government repeatedly reneged on investment deals with foreign companies. Despite this antecedent in the 1990's the Venezuelan government successfully opened the oil sector to foreign capital, attracting more than $15 billion in less than a decade.

The institutional economics literature argues that without credible domestic institutions for protecting property rights (e.g. independent judiciary), either no foreign investment would be obtained or foreign investors would have to be given large short-term rents in compensation for the high expropriation risks. However, in Venezuela the government did not offer investors significant short-term rents despite the inexistence of credible domestic institutions for protecting investors' rights.

This dissertation explores an alternative type of commitment mechanism to attract foreign capital based on external enforcement of the investment deal using offshore assets

and future export revenues as *hostages*. The key feature of this institutional arrangement is that it makes government reneging costly and provides effective third-party external enforcement to the deal.

The analytical framework is based on a simple game-theoretic model around which the political cost-benefit analysis of expropriation is developed. The historical evolution of the institutional framework for enforcement of investment deals in the Venezuela oil industry and its impact over foreign investment is analyzed. Empirical evidence showing the successful attraction of investment in recent years and the reduction of investors' perceptions of expropriation risk is evaluated. The *external hostage* framework offers a variety of potential applications for sovereigns to credibly commit in the absence of domestic sources of enforcement.

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CHAPTER 1

INTRODUCTION

I. INVESTMENT AND GOVERNMENT EXPROPRIATION IN HIGH SUNK COST SECTORS: AN EMPIRICAL AND THEORETICAL PUZZLE

Foreign direct investment (FDI) in *high sunk cost sectors*, like mineral resource extraction and infrastructure, can be a significant source of economic growth in developing countries.[1] In the last decade, very significant levels of FDI have been deployed into high sunk cost sectors in emerging economies, reaching a total of more than $400 billion -the largest proportion to Latin America. This contrasts with the two previous decades (70's and 80's) of relatively low levels of FDI. For example, in Latin America FDI flows were 5 times larger in the 1990's compared to the 1980's (Moran, 1999).

The recent successful attraction of FDI in Latin America is puzzling considering a -not so distant- history of expropriation and nationalization of high sunk sectors in the region. *How do governments, with poor reputations for respecting investors' rights, attract FDI to high sunk cost sectors?* For this type of investment to flourish in the long run some degree of protection of investors' property rights is necessary. Foreign investors will not invest if they cannot expect to recoup their investment with an acceptable return. *How and when do governments credibly commit not to expropriate?*

[1] *Sunken investments* are those that once deployed, are very costly to move to an alternative use (e.g. oil pipelines, investment in exploration, fixed telephone lines).

The definition of expropriation used in this dissertation is: *any significant change in the property rights of investors (e.g. via price controls, tax increases, creeping regulation) that was not part of the ex-ante bargain with the state and that does not allow the investors to recover their capital plus a market return (including a commercial risk premium).* When the expropriation does not involve the seizing (or forced divestiture of assets) but only the appropriation of revenues it would be referred as *revenue expropriation*. The definition includes the classic cases of asset expropriation: outright confiscation (seizing of assets without any compensation) or nationalization (seizing of assets with some form of compensation, typically less than the ex-ante opportunity cost).

The empirical evidence demonstrates that all over Latin America and the developing world, sectors with significant sunk investments such as oil, natural gas, mining, electricity, telecommunications, transportation infrastructure, and water distribution, have been primary targets of government expropriation of revenues and assets. In the XX century, the typical evolution of high sunk sectors occurred in cyclical patterns of investment growth and subsequent decline. Starting, in the first half of the century, with periods of significant asset deployment by private -mostly foreign- investors. Followed by periods of increasing revenue appropriation by authorities - reneging on the original deals- that typically led to a subsequent decline in foreign investment and industry decay. In many occasions the foreign investment cycle ended up with outright *nationalization* of the industry (Gómez-Ibañez and Meyer, 1993, Noll, 2000).

After nationalization, an initial phase of increased investment by the state was usually followed by an increasing difficulty for financing the potential expansion of the

sector and many times a significant decline in industry performance. In general, state-owned companies were also the victims of revenue over extraction. Eventually, in most countries nationalized high sunk-cost sectors have been reopened to foreign investment and in many cases state-owned companies have been privatized (Dailami and Klein, 1997; Moran, 1999; Noll, 2000).

The pattern of expropriation observed in high-sunk-cost sectors contrasts sharply with its relative inexistence in other sectors of the economy (e.g. manufacturing, services, high technology) (Kobrin, 1985; Moran, 1999).[2] As a result, both under private and public ownership there has been a historical tendency towards having difficulty in developing the full potential of high-sunk-cost sectors. In fact, in some countries these sectors have remained largely underdeveloped despite being potentially profitable. As explained before, despite the past record of expropriation investors have been willing to invest significant resources in high-sunk-cost sectors (sometimes even after having been themselves expropriated in previous periods).

The history of investment in the Venezuelan oil industry fits very well the described pattern of high sunk-cost sectors. Foreign investment in oil began in the 1910's and grew rapidly in the 1920's, making Venezuela the world largest exporter of oil by the end of the decade. Investment increased even more rapidly after World War II and until 1958. In contrast, in the period 1958-76, a systematic increase in revenue appropriation by the government (through tax increases and other regulations) and a shortening of the investment horizon, produced a dramatic decline in oil investment that induced year later a sharp fall in production. The decline of the oil industry prompted the nationalization of

[2] The banking sector is the only non-high sunk cost sector that systematically experienced episodes of expropriation and nationalization in Latin America. For an analysis of banking expropriation see Haber, Razo, and Maurer (forthcoming).

the industry in 1976. Then, after fifteen years of state-monopoly, in the early 1990's the oil sector was reopened to foreign investment with high success. Over the last decade, under tough fiscal conditions foreign investors have invested almost $20 billion in the Venezuelan oil industry.

There are theoretical grounds to expect a higher risk of expropriation in high-sunk-cost sectors. Ex-post, once assets have been deployed, governments can use their sovereign powers (e.g. taxation, regulation, etc) to renege on the original deal with investors and expropriate revenues, not allowing investors to recover their sunken capital. Despite being expropriated, investors will rationally continue to operate as long as they cover their proportionally small operational costs, since it would be costlier to leave. Thus, rational investors would require credible assurances from the government that it will not opportunistically expropriate their revenues and assets.

Alternatively, investors could demand high-short term rents in compensation for the risk of expropriation. For example, in the case of privatizations, selling state-owned assets for a low price can provide the investor with a quick return on his capital. However, in the case of new investments in sunken assets with long-term recoup periods (e.g. ten to thirty years) it is difficult for the government to give short-term rents away to investors. Offering investors high long-term returns in compensation for the expropriation risk may not be credible (it can even increase the risks of government reneging). In addition, giving away large rents to investors can have detrimental effects on social welfare (less government budget and higher prices).

This dissertation's general objective is to understand the circumstances under which investment in high sunk sectors in developing countries thrives. *Under what*

conditions is expropriation likely to happen? When is the commitment to respect property rights credible? How can governments credibly commit when they have a reputation for reneging on previous deals? The project aims to answer these questions by developing an analytical framework to study the government's political benefits and costs from the expropriation of sunken investments. The case of foreign investment in the Venezuelan oil industry serves to evaluate the theoretical framework and study the specific mechanisms that have made possible the successful attraction of foreign investment.

This introductory chapter is structured as follows. Section II, presents a brief review of the literature on expropriation and government commitment. Alternative theoretical perspectives are assessed discussing which elements of the empirical evidence can be accounted for and which are left unresolved or are contradictory. Section III, presents the basic hypotheses of this dissertation and a summary of its basic argument. Finally, Section IV presents a basic road map of the dissertation.

II. A Short Review of the Literature on Expropriation and Commitment

Since the 1970's a significant amount of literature has been devoted to explain the large wave of expropriations and nationalizations that occurred in the developing world starting in the 1960's and ending in the 1980's. This literature can be organized into four basic types: 1) *International Regime* explanations; 2) *Dependency and Neo-Marxist* explanations; 3) *Obsolescing Bargain* literature; and 4) *Ideology-based* perspectives. Finally, a more recent perspective on government commitment and expropriation has derived from the theoretical framework of the *new institutional economics*. In particular, a recent branch of this literature has studied regulatory commitment in infrastructure investment. As will be seen in Chapter 2, this dissertation borrows heavily from such perspective.

Theories of *international relations* have emphasized the explanatory power of the rise and decline of the sovereign autonomy of states –the *international regime*- as the driving force behind expropriations (Kobrin, 1984; Krasner, 1985 and 1999; Lipson, 1985). In the first half of the XX century the enforcement of the property rights of foreign investors by hegemonic powers (mainly Britain and the United States), prevented weak developing states from exercising their sovereignty. Moreover, most developing regions did not have sovereignty since they were colonies of European powers. After the Second World War the emerging international regime characterized by the Cold War, the breakup of colonial empires, and the emergence of the United Nations as a forum for

Third World countries' interests, gave developing nations the power to exert their sovereign authority. This shift in *power* resulted in the wave of expropriations that ensued. Moreover, U.S. foreign policy, in the new context of bipolar confrontation, had other more imperative objectives than contract enforcement.[3] International regime theories offer a useful explanation for the timing of nationalizations in the 1960's and 1970's, but leave many important elements of the evidence unexplained. The evidence shows a significant variation in the rates of expropriation across economic sectors in countries with similar degree of sovereign autonomy or even in the same countries (Henisz and Williamson, 1999; Moran, 1999). In addition, state-owned enterprises (and domestic investors) have also been victims of revenue expropriation (Levy and Spiller, 1996; Noll, 2000), therefore seeing expropriation only as an outcome of international confrontations, might be misleading. Some degree of sovereign autonomy by the government seems to be a *necessary condition* for expropriation, but not sufficient.

Dependency and *neo-Marxist* theories, with a more normative perspective on the subject, emphasized the negative implications of foreign investment -especially in high sunk sectors- for the development of recipient countries (Petras, Morley and Smith, 1977; Frank, 1978). Foreign investors, according to this view, extracted rents from the domestic economy by creating enclaves with few positive externalities for the rest of the economy. These authors advocated the expropriation and nationalization of foreign investments as necessary step to diminish economic dependency and to allow state planning of national development. Nevertheless, some authors in this tradition considered that in practice most instances nationalizations failed to break with dependency. For example, Petras, et al.

[3] For example, the U.S. State Department in most instances did not apply the sanctions against countries that expropriated U.S. investors established by the U.S. Congress in the Hickenlooper Amendment.

(1977), use class-based analysis to argue that the nationalization of Venezuelan oil was the result of a decision by the domestic capitalist class, using the state as an instrument, to capture the surplus value for itself. As a result Venezuela continued to be inserted in the international system in a dependent way that benefits the U.S. ruling classes and the Venezuelan elite. The heavy deductive and normative character of this literature does not offer much explanatory power to understand the variations among sectors and between countries in terms of the occurrence and degree of expropriation. It also failed to explain the occurrence of revenue expropriation in the case of state-owned enterprises.

Vernon (1971 and 1977) suggested that the risk of expropriation for foreign investors in mineral extraction -and other similar sectors- increased after the initial stages of investment deployment. His *obsolescing bargain* argument proposes that, in the beginning, due to the high risks intrinsic to the initial phase of investment in exploration for mineral resources, governments are willing to offer very good deals to foreign investors. But once the mineral is discovered and geological risks largely disappear, the government is not satisfied with the investor obtaining the high-risk premium that was previously agreed (the original bargain becomes *obsolete*). Other authors such as Mamalakis (1977) and Moran (1974) used similar conceptual frameworks to explain the occurrence of expropriation. The *obsolescing bargain* does help to understand the higher incidence of expropriation in mineral sectors compared to manufacturing or services. As will be discussed later, the lack of administrative capacity by some states for implementing a tax framework that can adapt to the different investment phases has implied that deals signed at the initial stage of exploration are not appropriate for latter stages. Nevertheless, this approach fails to explain the many instances in which states

reneged to deals made at the latter phases and in mature and established sectors. Nor does it help to understand expropriation in situations in which the sector requires further investments in exploration (e.g. Venezuela 1970's). This framework does not appear to be useful to explain the many instances of expropriation of sunken investments through domestic price regulation bellow opportunity costs -typical in periods of high inflation. Finally, it does not help to elucidate the phenomena of expropriation to state-owned enterprises.

Another segment of the literature has emphasized the importance of *ideology* in generating the political fuel for the expropriations and nationalizations of the sixties and seventies. For example, Swansbrough (1976) argues that the ideology of *economic nationalism* was the leading force causing nationalizations in Latin America. He characterizes the primary objective of economic nationalism as independence from foreign domination rather than economic welfare or development. In fact, he argues that nationalistic leaders were willing to sacrifice economic well being to obtain self-sufficiency. He attributes the rise of economic nationalism to the excessive influence that multinational corporations and foreign powers exerted over Latin American economies. In the particular case of the Venezuelan oil industry, some authors have emphasized the importance of ideological factors driving the escalation in the extraction of rents from the oil multinationals. In particular, it is argued, that the rise and fall of the *rentist* and *state-led development* ideologies motivated Venezuelan political leaders to take control of the oil industry (Baptista and Mommer, 1992; Urbaneja, 1992). Ideology does seem to play a significant role in defining the type of expropriation that occurs, for example nationalization vs. revenue extraction. However, purely ideological explanations also fail

to account for the pervasive expropriation of revenues to state-owned enterprises in high-sunk cost sectors. Moreover, there are many examples of instances in which ideological premises were clearly sacrificed for pragmatic political cost-benefit considerations. This dissertation includes illustrations of a variety of such instances. For example, in the case of Venezuela, governments and regimes with different ideologies adopted very similar policies with the clear pragmatic objective of maximizing fiscal revenue extraction from the oil industry -sometimes contradicting their official ideological stand.

The recent *institutional* literature on *regulatory commitment* and investment in *infrastructure* has emphasized the importance for development of the existence of *domestic institutions* that restrain the government from opportunistically reneging from the original agreements with investors. An industry with significant *sunken* investments is particularly vulnerable to opportunistic expropriation by political authorities. Politicians can obtain significant present benefits and suffer relatively low present costs from the expropriation of revenues and/or assets from high sunk cost industries. As a result, in the absence of appropriate institutional checks and balances in the regulatory framework high-sunk industries will be highly susceptible to expropriation (Levy and Spiller, 1996; Savedoff and Spiller, 1999; Moran, 1999; Noll, 2000). For example, Levy and Spiller (1996), argue that in some countries -such as Chile- the existence of a strong and independent judiciary that upholds the rule of law, provides a significant restraint to opportunistic expropriation. As a result Chile has been one of the leading recipients of infrastructure investment in Latin America. In contrast, the absence of credible institutional limits to expropriation, as exemplified by the rent-seeking presidencies of Argentina and the Philippines, has created problems for sustaining long-term investment.

In the latter cases, investors have only been attracted by receiving *sweet deals*, i.e. arrangements in which they obtain large short-term rents to quickly recover their risky investments (e.g. Argentina's telecom privatization). According to this literature, the lack of a credible regulatory environment has induced in Latin America a combination of sub-optimal levels of infrastructure investment and/or state ownership (Spiller and Savedoff, 1998; Levy and Spiller, 1996; Heller and McCubbins, 1996; Henisz, 1999).

In contrast to the perspectives presented beforehand, the *institutional* perspective does offer a general theoretical explanation to understand both expropriation to foreign investors and state-owned enterprises. It also accounts for the higher incidence of expropriation in high sunk cost sectors. Nevertheless, the determinant weight given to the existence of *domestic* institutions as a necessary condition to sustain significant flows of FDI seems to contradict some of the historical evidence.

In most Latin American countries all over the XIX and XX centuries -and until the present days- that condition has not been generally met, although there have been significant variations across countries and time. In spite of this until the 1960's very significant levels of FDI were deployed into the high-sunk sectors of many Latin American countries such as Argentina (trains), Chile (copper), Mexico (oil, silver), and Venezuela (oil). Moreover, again in the last decade large inflows of FDI in high sunk cost sectors have been received in some countries in the region.

The case of Venezuela is very illustrative. The executive has had few legal or institutional limitations to discretionally extract additional revenues from the oil industry and the judiciary has been very politicized. Venezuela fares poorly compared to most Latin American countries in terms of institutions for protecting property rights (Vial et

al., 2002). Nevertheless, between 1920 and 1958 foreign investment in oil increased systematically. Similarly, very significant levels of foreign investment have been obtained in the last decade under very unstable political and institutional circumstances. In next section, the central theoretical hypotheses of this dissertation to explain this apparent puzzle are briefly presented. Chapter 2 is devoted to developing the theoretical framework.

III. External Enforcement and Credible Commitment: Basic Hypotheses

This dissertation theoretical approach is rooted in the *institutional* perspective and therefore the starting point is a general theoretical hypothesis extracted from that literature: *without credible enforcement mechanisms for protecting investors' rights, either little investment in high sunk cost sectors would be attained, or investors would have to be given large short-term rents in compensation for the high expropriation risk.* Contrary to the institutional literature, which emphasizes domestic institutions as the key source of commitment, this dissertation argues that: ***external*** *enforcement mechanisms which protect foreign investors rights have played a determinant role in deterring government expropriation and as a result have induced high levels of investment in high-sunk cost export sectors.*

Therefore, the main testable hypothesis of this dissertation is *high levels of investment in high sunk cost sectors can only be attained if: 1) there are credible domestic institutions for protecting investors rights (most importantly an independent judiciary); or 2) there are external mechanisms that enforce the investment deal (make costly for the government to renege); or 3) investors are given significant short term rents.*

Accordingly, the answer to the empirical puzzle of high investment without domestic protection of property rights is provided by the existence of *external enforcement mechanisms* that substitute or complement weak domestic institutions. These

type external mechanisms have been the most important source of credible commitment to sustain investment in the Venezuelan petroleum industry. Two different sets of external enforcement structures sustained high levels of investment in the first period 1920-1958 and in the last decade 1992-2002.

Hegemonic Power and Cartel Enforcement

In the period of high investment between 1920 and 1958, two mutually reinforcing external mechanisms provided protection to investors' property rights:

1) The presence of a cartel of oil producers capable of inflicting significant costs to government reneging (through an investment, operation, and distribution boycott).

2) The existence of a hegemonic power enforcing international law (U.S. government).

The Venezuelan government increased oil taxes (by changing the laws) throughout this period, but tax increases only applied to projects signed after the law was passed. The original deals were respected. The existence of credible commitment induced very significant foreign investments, which transformed Venezuela into the largest oil exporter in the world.

The decline in the original sources of enforcement induced a situation of increased revenue expropriation in 1958-1976. After World War II, developing countries became increasingly sovereign and hegemonic enforcement ceased to be effective. In addition, the international oil cartel weakened with the entrance of independent oil producers and an effective boycott ceased to be a credible threat. The increase in revenue expropriation and the breakdown of commitment, in turn, induced a significant reduction in investment by the foreign multinationals. After thirteen years of accumulated disinvestment, a sharp drop in production capacity began in 1971. Nationalization in 1976 was the way out to the rapid deterioration of the oil industry.

The Hostage Mechanisms

In 1992 when the Venezuelan government felt the need to attract foreign investment again a special governance structure to provide credible commitment had to be devised. Very significant levels of foreign investment have been successfully attracted in the last decade (totaling more than $19 billion). The new institutional framework is based on using the state-owned oil company (PDVSA), its foreign assets, and future exports as a *hostage* against reneging. The key element of this *hostage mechanism* is that it imposes very significant costs to the government in case it reneges from the contracts with investors.

The stylized version of the hostage mechanism works as follows. PDVSA contractually guarantees that the original bargain with the state will not be significantly modified in the future. If the government does not abide by the deal, PDVSA is

contractually required to compensate the foreign investors for revenue expropriation. In particular, foreign investors could seize PDVSA's assets and export revenues in the U.S. (and Europe), in the event of reneging. Venezuela's unreliable judicial system is contractually bypassed, using international arbitration in the U.S. to resolve any contractual disputes. Foreign courts would serve as the ultimate third party enforcer of arbitral decisions. As a result, the potential high costs of opportunistic behavior would deter the government from reneging on the deal.

A separate *hostage mechanism* is used to guarantee the debt used to finance the foreign oil joint ventures. This mechanism uses the offshore receivables generated by the exports from these joint ventures to commit to debt repayment to creditors. The debt-structure provides creditors with an effective device for seizing the offshore receivables before they are returned to the sovereign jurisdiction. If the government attempts to expropriate revenues or interferes with the device it would immediately *trigger* a preventive withholding of additional offshore revenues. Thus, hampering this debt-structure would be very costly for the sovereign, even in the short-run. It would also adversely affect the sovereign's and PDVSA's credit opportunities.

IV. DISSERTATION ROAD MAP

The project is organized as follows:

Chapter 2 presents the theoretical framework. The political benefits and costs of expropriation are analyzed. The use of domestic institutions and external commitment mechanisms as sources of enforcement is evaluated.

Chapter 3 analyzes the initial period of significant foreign investment in 1920-1958 and the external sources of commitment that sustained it. It also studies the causes of revenue expropriation and industry decline in 1958-1976.

Chapter 4 presents the basic theory of the use of hostages as a commitment mechanism. Then it analyzes its application to the contract structure used to reopen the oil sector in 1992-2002. The details of the governance structure are described and evidence of the success of the mechanism is evaluated.

Chapter 5 discusses another application of the hostage framework, the use of offshore export receivables as a guarantee to obtain foreign loans to finance the oil projects. Empirical evidence suggesting its success in reducing expropriation risk is provided.

Finally, Chapter 6 presents the main conclusions. Some additional implications and extensions from the analysis are also offered.

CHAPTER 2

A THEORY OF EXPROPRIATION AND COMMITMENT IN HIGH SUNK COST INDUSTRIES

I. INTRODUCTION

This chapter presents a theoretical framework to analyze the interaction between sovereign governments of developing countries and foreign investors in high sunk-cost sectors. The sovereign's political costs and benefits from expropriating revenues to sunken investments and his capacity and incentives to commit not to expropriate are assessed. Afterwards, the general theoretical framework is applied to the particular case of the oil industry in an oil exporting country.

Throughout history, powerful sovereign rulers have sometimes had difficulty attracting foreign investment to their sovereign territory. If rulers had a *costless* opportunity for expropriating assets or the revenues derived from them; investors, merchants, and creditors, were unwilling to commit their resources. For example, in Europe, absolute monarchs had problems making credible commitments to honor their sovereign debts, which they often repudiated. This lack of commitment severely limited the sources of credit available to the ruler (North, 1990; North and Weingast, 1989). Absolute *sovereignty* limits the use of judicial enforcement of contracts because "it is difficult to sue a sovereign in its own courts" (Weingast, 1997).

The political economy of development has recorded similar instances in which a politically influential group in society is able to induce the government to extract resources from high sunk cost sectors and redistribute it to its members. Bates (1984) analyzed a prominent example in African development, where urban consumers that have a collective action advantage vis-à-vis small farmers, obtained subsidized staples from

the government. The resources to subsidize urban dwellers were obtained by de-facto expropriating revenues from coffee and cocoa farmers who had made long-term investments (due to these crops' characteristics) and therefore could not switch to other activities (or could do so at a high cost). In the short-term rents were successfully extracted from these sectors at the expense of long-term investment with eventual disastrous consequences for development.

What is expropriation? As stated in the Introduction, the definition of *expropriation* used in this work is: *any significant change in the property rights of investors (e.g. via price controls, tax increases, creeping regulation) that was not part of the ex-ante bargain with the state and that does not allow the investors to recover their capital plus a market return (including a commercial risk premium).*[1] When the expropriation does not involve the seizing (or forced divestiture of assets) but only the appropriation of revenues it would be referred as *revenue expropriation*. The definition includes the classic cases of *asset expropriation*: outright confiscation (appropriation of assets without any compensation) or nationalization (seizing of assets with some form of compensation, typically less than the ex-ante opportunity cost).

The main focus of this work is on revenue expropriation rather than nationalization. Revenue expropriation has been a more generalized practice across historical periods, with the exception of a period in the 1970's that was characterized by a large wave of nationalizations. In fact nationalizations have not always implied a significant loss of value for investors since they have sometimes been well compensated.

[1]Expropriations may be de-jure (e.g. nationalization respecting domestic and international laws) or de-facto (e.g. through price controls that violate laws or contracts).

In general, *ex-ante* before investments have been deployed, political authorities have clear incentives to strike a bargain inducing capitalists to invest. Governments and politicians generally benefit from attracting new investments. New investments create jobs, generate future tax revenues, and create demand for other businesses' goods. The incentive problem arises *ex-post*, once the assets have been deployed. Government authorities, at that point, might have incentives to behave opportunistically and utilize their sovereign control over taxation, regulation, and other state prerogatives, to expropriate revenues or assets.

An industry with significant sunken investments is particularly vulnerable to opportunistic expropriation by political authorities. *Sunken-assets* are those that once deployed, are very costly to move to an alternative use. Political authorities can obtain significant present benefits and suffer relatively low present costs from the expropriation of revenues or assets of a high-sunk cost industry. Costs are generally borne in the distant future, if at all, and many times by a different set of politicians. Therefore, in the absence of additional enforcement mechanisms, investment in high-sunk industries will be highly susceptible to expropriation (Savedoff and Spiller, 1999; Moran, 1999). Knowing that there exists a significant risk of expropriation investors would either not invest or require high short-term rents in compensation for risk. In both situations the government is worse off. Having the discretion to expropriate results in a sub-optimal outcome for the state.

S*unken* investments are a source of what the economics literature has denominated *appropriable quasi-rents* (*AQR*). *Quasi-rents* exist when an asset's value is highly *specific* to a particular investment transaction. If the owner of the asset decided not to continue on that use and proceeded to move the asset to another use, its value in the

next best alternative (its *opportunity cost*) would be significantly less than its value in its current use. The difference between the value of the investment in its current use and its opportunity cost constitutes the *appropriable quasi-rent* (Klein, Crawford, and Alchian, 1978; Williamson, 1996).

By definition, sunken assets are a source of significant AQR because once the assets have been sunk the ex-post opportunity cost is close to zero (or small) since they cannot be moved to an alternative use (or it s very costly to do so). Therefore, in the case of sunken assets the AQR are the sum of the full value of the sunken capital and its ex-ante opportunity cost (i.e. the return it would have if not deployed in the current project but in the best alternative it has before being sunk). An actor with control-rights over the revenues generated by the project can appropriate all the quasi-rents without disrupting the operation.

When the government expropriates revenues, not allowing the investor to recover his sunken capital in the long run, the owner of the assets still has an *ex-post* incentive to continue operating. If he decided to exit and move the sunken assets, he will earn a worse payoff than if he stays. The higher the fraction of sunken-costs (and therefore of quasi-rents) over the total cost of the project, the larger the proportion of the investor's capital that can be expropriated by extracting revenues (Klein, Crawford and Alchian, 1978; Williamson, 1996).[2]

[2] It is important to differentiate the appropriable quasi-rents from monopolistic and differential rents that are very significant in oil extraction. Monopolistic rents arise when a monopoly or cartel restricts output bellow the competitive level. Differential rents arise from the difference between the natural low extraction costs in some producer areas (e.g. Saudi Arabia) and the higher costs in the marginal producer areas (e.g. Texas). For the purposes of this work it is just relevant to now that these rents have made oil production in some regions a highly profitable activity and should make the attraction of private investment relatively easy, but as it will be shown, due to commitment problems that has not been the case in many instances.

This chapter is organized as follows. Section II, presents a basic model of the interaction between profit seeking foreign investors in sunken assets and a rent-seeking sovereign. Section III, analyzes in more depth the political benefits and costs of expropriation, which drive the government's decision to expropriate (or not). Section IV, analyzes the domestic institutional mechanisms that can provide third party enforcement to the deal between investors and governments when it is not self-enforcing. Section V, discusses the use of external sources of enforcement when there are no credible domestic institutions limiting expropriation. A brief historical analysis of external enforcement in Latin America is provided as theoretical background for Chapter 3. Section VI, discusses the consequences of the lack of commitment and some strategies that investors can use for mitigating the expropriation risks. Section VII, analyzes the application of the theoretical framework developed to the cases of the oil exporting industries and state-owned enterprises. Section VIII, provides some brief concluding comments.

II. A SIMPLE GAME OF INVESTMENT AND EXPROPRIATION

The basic interaction between the government and a foreign investor (in sunken assets) can be illustrated with a very simple three stage sequential game of perfect information with no uncertainty (e.g. no economic or natural risks) (see Figure 1). In this baseline model there are no costs for the government from expropriating the *quasi-rents* generated by the sunken assets.

In the first stage the foreign investor (FI) decides if he invests (I) or not (NI). If he decides not to invest both players receive a payoff of zero. If he invests, the next stage occurs after the assets have been sunk. In the second stage, the state (S) decides if it expropriates (E) or not (NE). In case the state does not expropriate -respecting the original deal- the investor obtains his expected after-tax profits (P) and the state obtains her taxes (T) (as agreed ex-ante). Finally, the last stage of the game occurs in case the state chooses to expropriate the appropriable quasi-rents (AQR). At that point, the investor has to decide if he acquiesces (A) or quits (Q). In case he quits he loses all the quasi-rents (SA + P).[3] In case he acquiesces and continues operating, the investor still loses the AQR being expropriated but at least he is able to obtain a positive operating profit (OP = after-tax operating revenue minus operating costs). As long as the investor is allowed to keep operational revenues just slightly above the level of operational costs

[3] To be precise, the appropriable quasi-rents are constituted by all the sunken capital (SA) and its ex-ante opportunity cost (i.e. the best return that capital could have obtained in an alternative investment). P has to be higher or equal than the opportunity cost. The excess of P above the opportunity cost of capital is a rent captured by the investor.

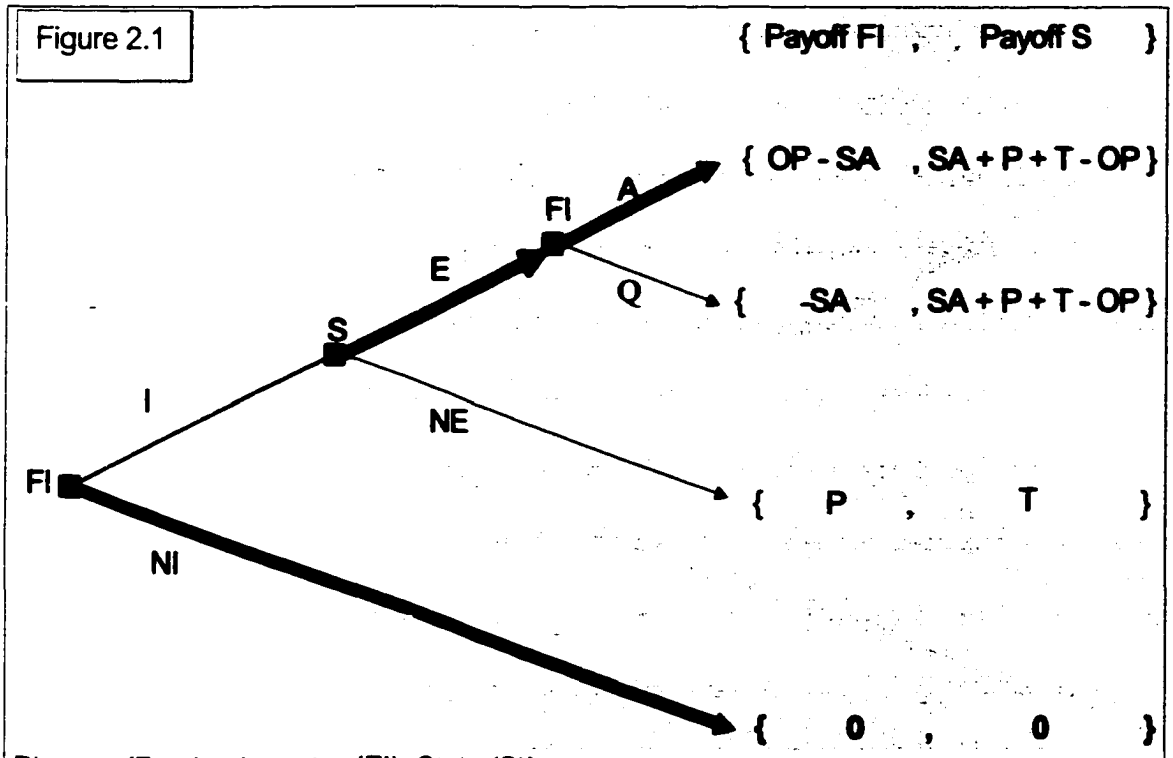
(including opportunity costs), he would be better off by acquiescing than by quitting (P>OP>0).

Thus, the optimal strategy for FI in the last period is to acquiesce and continue operating (as illustrated by the bold arrow). Notice that in this simple formulation there are no direct *costs* for the state if the investor quits. At this point, it is assumed that the state can costlessly take charge of the operation or give it to another private operator (who would only have to provide capital for the operating costs).

In the second stage, the state's optimal strategy is always to expropriate (as shown by the bold arrow E). By definition, the revenues obtained by the government in case of expropriation, which include the sunken capital (SA) and the full returns on the investment (P + T) minus the operating profit left to the investor (SA + T + P – OP), are higher than the ex-ante agreed government take on profits (T).

Solving by backwards induction, in stage one, knowing that it would be optimal for the state to renege in stage two, the foreign investor does not invest (as shown by the bold arrow NI). Therefore, the equilibrium strategy set is {NI, E, A} were there is no investment. As a result, both players end with the sub-optimal result of no investment, which has a zero (0) payoff for both. This is a lower payoff for both players than the one they would have obtained with investment (I) and no expropriation (NE). The parties cannot attain this Pareto-improving outcome for lack of credible commitment by the government. The promise of the state, to allow the investor to recuperate all costs and obtain a profit of P, is not credible because in the second stage once the investment is sunk the government's optimal strategy is to renege.

Figure 2.1



Players: {Foreign Investor (FI), State (S)}

Total Revenues Generated = TR = SA + OC + T + P

OP = OR – OC = after-tax operating profits= after-tax operating revenues minus operating costs.

SA = sunken costs/assets

T = ex-ante agreed taxes (government take).

P = after-tax profits

Appropriable Quasi Rents =AQR = SA + P - OP

By assumption:

$T > 0$

$P > OP > 0$

$SA > OC > 0$;

$SA + P - OP > T$

Notice that the quasi-rents that can be captured by revenue expropriation (SA + P - OP) are higher, ceteris paribus, the higher the ex-ante promised profits (P) (or equivalently) the lower the taxes agreed ex-ante (T). Therefore, promising higher returns to the investor does not necessarily would induce him to invest if there is no credible commitment. In fact, promising high returns can increase the likelihood of reneging (since it would have a higher payoff).[4]

A simplified numeric example can serve to illustrate the previous game. Suppose an oil project generating revenues of $20 million in ten years ($2 million per-year) requires an initial sunk investment of $8 million (80% of total costs) and an operational expense of $200,000 per-year (a total of $2 million in the ten years, 20% of total cost). Resulting in a total cost of $10 million and $10 million in total profits. Assume the investor is willing to do the investment if he expects to obtain a return of 5% or more. In such a case the government can offer him a deal in which, the government will take $9 million (T) (90% of profits, 45% of gross revenue) and the investor keeps $1 million in after-tax profits (P) (10% return).[5]

Nevertheless, once the investor has sunk the $8 million investment, the government can behave opportunistically and change the deal, asking for –say- $1,7 million per-year for a total of $17 million (188% of profits and 85% of revenues). The investor should keep producing as long as he covers the $200,000 per-year in operational costs. In this case he keeps $300,000 per-year for a total of $3 million, so he should stay. If the investor decides to leave the deal, he will lose the whole sunken $8 million. If he

[4] The investor can be induced to invest if he is provided with front-loaded rents in the short-term that have a smaller risk of expropriation.

[5] The proportions in the example are in line with reality. Sunken costs can represent 80% of an oil investment and total revenues in an oil project can provide a 100% return on total costs. Most of the profit

stays he will lose $7 million. In this example the government extracted $8 million in AQR ($7 million in sunken capital plus $1 million in returns to that capital not received). Notice that, ex-ante, the investment will not materialize if the investor expects the sovereign to take more than $9.5 million leaving him with less than 5% return. So the investor's willingness to invest requires credible guarantees that he will not be expropriated.

Since the stakes are so high (i.e. losing the sunken capital), even if the investor thinks there is a small probability of expropriation of the AQR he could refrain from risking his capital. To compensate the risk, the investor would have to be offered extremely large short-term rents in exchange (assuming constant expropriation risk). Continuing with the numeric example above, assume the investor evaluates at 10% the subjective probability of expropriation (i.e. recuperating only $3 million). He thinks there is a 90% probability that the state will maintain the deal and he will obtain a $1 million profit. In such a scenario, the expected profit for the investor is $400,000 (or 4% return), less than the minimum 5% expected return that he requires to do the investment. Notice also that the stakes involved are in direct proportion to the proportion of sunken costs involved.[6] All things equal, the higher the proportion of sunk-costs the higher the loss for the expropriated investor.

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is usually appropriated by the state. The cost of money in time is assumed away in the example for the sake of simplicity.

III. THE POLITICAL BENEFITS AND COSTS OF EXPROPRIATION

The government's decision to expropriate (or not) can be evaluated as part of its wider efforts to obtain political support, remain in power, and appropriate resources for the benefit of its members and constituents. The expropriation of quasi-rents provides political benefits because those resources can be used to fulfill the above goals. However, the benefits provided by a given amount of quasi-rents could vary with political and economic conditions. Also, the expropriation of investors may engender costly political consequences for the government. Benefits and costs are borne by politicians both in the present, when the decision is taken, and in future years. *Therefore, the government will expropriate if the present discounted value of all political benefits (which are a function of the AQR) is higher than the present discounted value of all political costs.* Conversely, commitment is only credible when the costs of expropriation are higher than the benefits.

The key elements in the sovereign's decision to expropriate the quasi-rents can be analytically organized as: a) *benefits of expropriation*, b) *costs of expropriation*, c) *discount rate of political authorities*, d) *domestic enforcement mechanisms*, and e) *external enforcement mechanisms*. Domestic and external enforcement mechanisms deter expropriation by making authorities bear some additional *institutional costs*. These enforcement mechanisms will be discussed in the following two sections.

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[6] [O.10*(10-7) + 0.90*(10+1)]= 10.4

Political Benefits of Expropriation

The expropriation of quasi rents can produce significant political benefits to the authorities, especially in the short-run. Benefits could come as fiscal resources or transfers to key political constituents.

1) Fiscal Benefits:

If the investment represents a significant source of fiscal revenues for the government, the benefits might come directly in the form of additional budget resources (Henisz, 1999). These resources can then be spent in politically profitable ways (e.g. public expenditure that generates political support) or privately profitable (e.g. corruption). Political benefits are a positive function of the level of appropriable quasi-rents. The larger the amount of appropriable quasi-rents (i.e. the stock of assets already sunk and the future expected profits of generated by those assets, SA + P) in relation to the fiscal budget the more attractive is expropriation for fiscal purposes.

The fiscal benefits generated of expropriation are also a function of the circumstances of the government finances. In a situation of fiscal crisis, with a significant deficit and difficulty accessing debt markets, the short-term benefits of expropriation would be much higher than in a situation of comfortable fiscal surplus.[7]

According to Waelde (1999) and Mac Donald (1998), the ex-post change in taxes and royalties constitutes the highest expropriation risk for foreign investors in extractive

[7] This reasoning is clearly reflected in the credit rating agencies reports of PDVSA. They argue that in case of a fiscal crisis PDVSA's cash flow constitutes a very tempting target to finance the deficit (Moody's, March, 1999; DCR, 2002).

high-sunk costs industries. They argue that it is the most effective form of expropriation because it is the unconstrained preserve of sovereigns. The threat of tax increases can also be used to coerce the renegotiation of other elements of the investment deal.

2) Transfers to Constituents:

Expropriation can also provide significant indirect political benefits to governmental authorities. The transference of appropriable quasi-rents to key constituents through regulation and other means constitutes a form of revenue expropriation. For example, the regulation of public utility prices (e.g. electricity) or the domestic sale of products (e.g. gasoline) below the long-run opportunity cost represents an implicit transfer to political constituents. This form of expropriation has been recurrent in high-sunk-cost sectors in Latin America and other developing regions, especially in inflationary contexts (Levy and Spiller, 1986; Philip, 1982; Rigobon, 1992).[8]

Political Costs of Expropriation

The political costs of expropriation can be subdivided in:

1) Direct costs

2) Reputational costs

3) Other indirect costs

[8] There are other ways to transfer resources to constituents. For example, the transference of quasi-rents to workers in the expropriated industry by forcing increases in wages significantly above the workers' opportunity cost (e.g. PEMEX). Similarly corruption and clientelism can be forms of revenue expropriation in state-owned enterprises.

1) Direct Costs:

Political authorities could face *direct costs* when they decide to expropriate revenues or assets. Direct costs are the costs of a significant decline (or halt) in production (given that the investment can cease to be profitable for the investor). Firstly, if the industry is fiscally important, a production disruption could have a large negative impact on the amount of fiscal revenues collected by the government. Secondly, if production is affected, political authorities could face costs arising from the pressure from *interest groups and constituents* that are being hurt by the decline in production (Zelner and Henisz, 2000a).[9]

Direct costs, associated with immediate industry contraction, are very low in high sunk-cost industries. This reason alone makes sunken assets highly vulnerable to expropriation. As it was discussed before, investors would be better off continuing production as long as operating revenues cover operating costs (which are small). Moreover, if the investor leaves the operation, the government could give the operation to another company which will not need to make sunk investments but just provide the operational costs (therefore not incurring in a significant risk). Alternatively, the government can operate the project directly, if it is technically capable of doing so.

There are conditions under which expropriation could generate significant indirect costs and the threat of a retaliatory short-term production cut by investors becomes credible. If there is an effective boycott (cartel) by all potential operators and the

government does not have the technical capacity to run the project by itself. The difficulty with this enforcement strategy is that the production stoppage is also costly for the investor. Furthermore, a boycott by other operators is difficult to enforce because there exists a collective action problem, since all operators would benefit by unilaterally breaking the boycott (more on that topic bellow). Besides, as the government obtains the technical capacity to run the industry the threat of production cuts by expropriated investors becomes less compelling. Foreign operators still might be able to boycott oil export distribution from the new state-owned enterprise, but that suffers from the same difficulties noted above.[10]

2) Reputational Costs:

Another type of cost of expropriating quasi-rents, the *reputational cost*, arises from the loss of *new* investments in sunken assets due to the investors' increased perception of risk (after the government reneges). In particular, investors involved in the project being expropriated could decide not to make any additional investments that might have already planned. Additionally, the loss of government reputation among other potential investors may reduce future investment in the sector and in other high sunk-cost

[9] For example, a decline in output could hurt businesses in the upstream and downstream sectors tied to the project. More importantly, it could hurt a significant number of consumers if the good or service is widely consumed or hurt the workers who lose their jobs.

[10]Since the confrontation between a government and a boycott of foreign operators is costly for both sides, the outcome crucially depends on the discount rates of the actors involved (see more about discount rates bellow). Haber, Razo and Maurer (forthcoming) argue that, in case of high political instability, the horizon of politicians' can shorten to a point in which even a short an interruption in the flow of fiscal revenues is intolerable. In that case an investor's threat to stop production might be very effective in deterring expropriation. The cost and time it takes to handover the investment to another operator would be unbearable for the highly unstable government. They use this argument to explain why the Mexican government could not expropriate the foreign oil companies in the unstable period of 1920's. Paradoxically high political instability appeared to help protect the foreign investors' property rights.

sectors (Spiller and Savedoff, 1998; Basañes et al. 1999). The total reputational costs include the costs associated with the loss in new investment and the costs associated with the present value of the foregone future fiscal revenues that would have been made available by those new investments. The importance of the latter in the decision to expropriate will be then significantly affected by the authorities' discount rate.

Reputational costs could be significant when the potential expansion of the sector requires large new investments. For example, if there are significant unexploited oil reserves to be profitably extracted or a large proportion of the middle class is not covered by telecommunication services. In contrast, when there are not major opportunities for new investments (e.g. the industry is mature or declining) the reputation costs are less significant (Levy and Spiller, 1996).[11] As a result, since reputational costs might decline in the future after the sector has been developed, they constitute a weak basis for commitment in the long run. Investment with very long-term capital recuperation would not be protected by reputation.

Additionally, "bad reputation" does not necessarily spread across sectors. The loss in reputation in one sector or project may (or may not) translate to other sectors or projects depending on their similarity in nature (proportion of sunk cost, interest groups involved) and on the differential enforcement frameworks that govern them. It could be the case that investors in one high sunk-cost sector are very secure despite the occurrence of expropriation in the same country in another sector (e.g. if the institutional environment of the two sectors is very different). Therefore, reputational costs can be contained. In fact, the government would ideally like, if possible, to expropriate all

sunken assets and at the same time credibly commit with future investors (even in the same sector). That objective is clearly difficult to attain, but not impossible if new investors are given different (more solid) guarantees against expropriation.

Moreover, as authors like Greif, Milgrom and Weingast (1994) and Weingast (1997) have pointed out, for the case of foreign traders and sovereign debt respectively, the existence of *reputational costs* alone might not provide an effective deterrent to governmental opportunism. The government's declining marginal benefits from investment would imply that the investor of the last additional unit of investment could not significantly harm the government by not making the investment. Therefore, when there are many potential new investors, only an investors' boycott could inflict a significant direct cost to the government and deter it from reneging. The problem is that a boycott is typically not sustainable because it hurts investors as well as the government. Since a successful boycott *will* prove very costly to the government, it might be willing to provide very attractive terms in order to induce some investors to make new investments. As a result, in those situations reputation alone cannot provide the basis for a credible commitment from the government.[12]

In contrast, if a cartel of investors can be successfully organized to boycott reneging governments, it could constitute a powerful deterrent mechanism against expropriation. A more concentrated sector with a few foreign multinationals dominating the market is then more likely to succeed at deterring expropriation. The smaller number

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[11] For example, a situation with very limited oil reserves to be exploited in the future. In such a case, reputation costs would be relatively low. Additionally, if the government decides to enter in quota system like OPEC's there is no significant need for new investment.

[12] There is some evidence, from the oil, natural gas and electricity industries, which tends to support the notion that other investors have been willing to enter countries where their competitors are being expropriated, if returns are high enough. Additionally, investors have been willing to take-over the

of players and repeated interaction increases the likelihood of cooperation. As it will be argued in Chapter 3, in the international oil industry the cartel of the *seven sisters* appears to have provided for such a mechanism while it effectively worked (1928-1956).

3) Other Indirect Costs:

Authorities can also face *indirect costs* if the investors that are being expropriated are *politically significant*. There is evidence that authorities tend to expropriate more often foreign investors than well-connected domestic investors (Wells, 1998 and 1999; Summerhill, 1998; Moran, 1999). It has been argued that investors could associate with politically powerful domestic partners that can "protect" their property rights (Moran, 1998; Haber et al., forthcoming).[13] Nevertheless, many times this strategy has been problematic for foreign investors because the domestic associate can himself extract some quasi-rents for this "protection" (Henisz and Williamson, 1999).[14] Additionally, the powerful partners of today can be the *pariahs* of the tomorrow (e.g. the Suharto family in Indonesia) and associating with them could end up being dangerous (Moran, 1998; Wells, 1998 and 1999).

These *indirect costs* may be higher if ownership of the investment is widely distributed among political constituents. There is some evidence that investments with popular ownership are less likely to be expropriated (Savedoff and Spiller, 1999; Moran,

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operation of the assets expropriated to the original investor (Philip, 1982; Wells, 1999). The recent case of Enron's forced renegotiation in India is one example (Moran, 1998; Wells, 1999).

[13] Haber, Razo and Maurer (forthcoming) present the conditions under which what they denominate "vertical political integration" between investors and politically powerful groups can produce selective protection of property rights.

1999).[15] In fact, privatization with wide distribution of shares has been recently used as a commitment devise (Monaldi, 1997; Smith, 1997; Moran, 1999; Savedoff and Spiller, 1999).[16]

***

Summarizing, the *direct costs* of expropriation are generally low in high-sunk cost sectors. The *reputational costs* are only high if: 1) there is a large unfulfilled potential for profitable investment in the sector that requires the attraction of private capital; and 2) investors are able to coordinate to boycott investments towards the expropriating country (this is equivalent to external enforcement by a cartel).

The Discount Rate of Political Authorities

Since benefits and costs are unevenly distributed over time, a key ingredient in the government's decision to expropriate is the value that politicians place on the future (their discount rate). The benefits of expropriation in high-sunk cost industries are concentrated in the short-term. In contrast, the short-term costs are typically low (direct costs), and most costs are borne years after the decision is taken (reputational costs including foregone future taxes). Therefore, ceteris paribus, the higher the discount rate

[14] For example, Henisz and Williamson (1999) argue that in investments with high asset specificity, there are not only political risks but also contractual risks. Therefore domestic partners can *hold-up* foreign investors and extract their quasi-rents (as can the government).

[15] In particular Savedoff and Spiller (1999) give the example of Venezuela's private electricity company *La Electricidad de Caracas*, which is one of the few private electricity operators in Latin America that was never nationalized in more than a century in business. They attribute the lack of nationalization to the fact that the company had the largest number of shareholders in Venezuela and was the leading stock in the Caracas Stock Exchange.

[16] For example, in Bolivia's privatization program (1994-96) 50% of the capital in hydrocarbons, telecommunications and power companies was sold to a foreign private operator and the remaining 50% was distributed to all Bolivians through their pension funds (Smith, 1997).

of politicians the more likely they will be tempted to expropriate quasi-rents since short-term present benefits would tend to outweigh highly discounted future costs (Spiller and Savedoff, 1998; Olson, 2000). In contrast, if high short-term direct costs (such as production stoppage with an operators boycott) can be inflicted on a reneging sovereign, a high discount rate could actually induce him not to expropriate (Haber et al., forthcoming, see footnote above).

The political economy literature proposes a variety of determinants of the politicians' discount rate. In democratic regimes the higher frequency of elections, the higher degree of contestation, the non-existence of reelection for public office, the lack of strong political parties, and the lower overall stability of the regime would tend to increase the rate at which authorities discount the future (shorten their horizon). In authoritarian regimes the degree of stability and the solution to the succession problem are key elements determining the time horizon of rulers (Olson, 2000).

Ames (1987), argues that in Latin America high political instability has generally induced politicians (authoritarian and democratic alike) to maximize fiscal revenues with very high discount rates. Political survival has required such socially shortsighted behavior. Even if politicians do not always have high discount rates, a foreign investor in Latin America should expect that, over the long periods of time required to recoup most sunken investments, there would be *political shocks* increasing the discount rate of politicians. Economic events such as hyperinflations and drastic declines in the price of export commodities, or political events such as military coups, guerrilla attacks, and social unrest are among the political shocks that have plagued the continent. A sudden

increase in the discount rate of politicians could tear down a commitment equilibrium sustained solely by reputational costs.

Political Cost-Benefit Analysis of Expropriation

The preceding analysis leads to the conclusion that in general the present value of the political benefits of expropriation would tend to outweigh the present value of its political costs, especially in periods when political shocks increase the discount rate of political authorities. Absent some type of enforcement mechanism, which imposes additional costs on reneging, the transaction would not be *self-enforcing*.

There is a temporal dynamic in the benefits and costs of expropriation that should be emphasized. When foreign investment in a high-sunk sector gets underway for the first time, the stock of appropriable quasi-rents (assets already sunk) is not very significant. However, if the stock of sunken investments increases with the accumulation of net-investment for a significant period of time, the size of the political benefits of expropriation would also increase at the same pace. Thus, unless the costs of expropriation increase in parallel, the temptation to expropriate would increase over time.

In contrast, as explained before, *reputational* costs tend to be high in the early stages of foreign investment, when there is a considerable need for capital in the unexploited sector. But reputational costs would decrease as the sector becomes more mature and less foreign investment is needed. These two elements combined generate a dynamic in which expropriation become increasingly attractive for the government after a preceding period of successful attraction of foreign investment. This dynamic might help

to explain the *cycles* of foreign investment-expropriation-nationalization-privatization that have occurred in Latin America's high-sunk sectors, as described in the Introduction (Chapter 1) and analyzed for the Venezuelan case in the following chapters.

IV. DOMESTIC INSTITUTIONS AS ENFORCEMENT MECHANISMS

If the *direct and reputational costs* of expropriation are typically not sufficient to deter opportunism, how can political authorities commit to respect investment deals in high sunk-cost sectors? The recent literature on infrastructure investment has emphasized the importance of *domestic political institutions* in providing for credible commitments. Institutional checks and balances can make it costly for the relevant political authority (typically the executive) to renege on the terms of the original deal offered to investors (Levy and Spiller, 1996; Haggard and McCubbins, 2001; Irwin, Klein, Perry and Thobani, 1997; Basañes, Uribe and Willig, 1999; Henisz and Zelner, 1999 and 2000a).

Levy and Spiller (1996), in a review of case studies of telecommunication investment in Latin America, argue that three conditions are required for institutional commitment in high-sunk cost industries: 1) The existence of *substantive* (legal) restraints on reneging (e.g. the existence of a law giving autonomy to a regulatory agency). 2) The existence of high-level *procedural* restraints limiting the change of the substantive restraints (e.g. the existence of a constitutional provision making it difficult to change the regulatory autonomy provided by the law). 3) The existence of credible enforcement of both such restraints (e.g. independent judiciary that can enforce the law even against the opposition of the executive). They especially emphasize the last condition: the need for an *independent judiciary* as a necessary element to support the other conditions. They argue that in the absence of such institutional restraints, either no (or very little) investment will occur, or alternatively, investors would have to be given

"*sweet deals*" in which they obtain very large short-term rents to recover their capital. The authors argue that such was the case in the privatization of the telecommunication sectors in the "rent-seeking hyper-presidential systems" of Argentina and the Philippines.

Other authors like Moran (1999), Smith (1997), and Rose Ackerman and Rossi (1999) have also emphasized the importance for commitment of institutions such as independent regulatory commissions, independent courts, and constitutional limits to expropriation. Alternatively, McCubbins, Noll, and Weingast (1987), argue that credibility in regulation can be obtained by designing regulatory procedures so that the regulated investors can obstruct attempts of administrative expropriation. Weingast (1995) argues that market preserving federalism could be a source of credible commitment by forcing states to compete in taxes and regulation.

Tsebelis (1995), Heller and McCubbins (1996), Zelner and Henisz (2000a), and Haggard and McCubbins (2001) adopt a more general approach based on the number and preferences of veto players that are involved in the policy making process. The likelihood of an opportunistic change in the regulatory and fiscal framework diminishes if there are more independent actors that have veto power over policy change and if the actors differ significantly on their policy preferences. A polity that concentrates power in the executive, has an electoral system that tends to produce executive supporting majorities in the legislature, and has no independent judiciary will have difficulty committing not to change the original policy status quo.

In contrast to the case of Argentina, Heller and McCubbins (1996) and Briceño (2001) argue that in Chile the constitutional enactment of multiple veto points to change legislation and the existence of an independent judiciary has allowed for better protection

of investors rights and a comparatively higher level of investment in infrastructure. Zelner and Henisz (2000a) and Henisz (2000a) present econometric evidence that supports the premise that investments in telecommunications and electricity are positively and significantly affected by the lower likelihood of policy change resulting from a higher level of political constraints.

The *institutional costs* of expropriation are the political costs generated by the obstacles the authorities face if they try to change the policy status quo to expropriate the sector. If they are high domestic institutions can serve to enforce the foreign investment deal. If they are low commitment is not credible. Institutional costs tend to be low, if there are no institutional (legal) restraints on the executive's extraction of rents, authority is discretionary and centralized in elected officials, there is no autonomous judiciary to serve as third party enforcer, and there are few veto points with similar preferences.

In Latin America and other developing regions institutional costs have been low throughout history, although there have been significant variations through time and between countries.[17] Authoritarian regimes, with few checks and balances, have ruled in many countries for a significant part of the twentieth century. In democratic regimes power has been typically concentrated in the presidency, legislatures have been constitutionally weak and technically incapable, the judiciary has generally not been independent, and legislation has often given the executive broad discretion over the regulation of domestic prices and in setting some taxes and royalties (Carey and Shugart, 1998; Shugart and Carey, 1992; Haggard and McCubbins, 2001; Philips, 1982; Briceño, 2001).

[17] In Venezuela institutional costs appear to be particularly low, even by Latin American standards (see Chapter 4).

Under such conditions: How have sunken investments been protected from expropriation? How have been enforced the investment deals? The answer, for a significant part of the twentieth century, lies in the existence of a variety of forms of external enforcement.

V. EXTERNAL ENFORCEMENT MECHANISMS

When rulers have absolute sovereignty over their territory, third party enforcement of foreign investment deals is very difficult. In reality however, there have been historically significant limits to state sovereignty (Krasner, 1999). Changes in the nature of sovereignty and the availability of external enforcement mechanisms have - throughout history- significantly impacted the *costs* of expropriation and the ways in which political authorities are able to commit.

Enforcement by a Foreign Power

A foreign government can protect the property rights of its investors if it is capable of imposing significant costs on the host government in case the latter reneges on the investment deal. The foreign power can threat to impose political costs through alternative means: diplomatic, economic (withholding aid and credit), and security (military intervention). The more the host government depends on the foreign government politically or economically, the more leverage the latter has to enforce investment deals.[18] The foreign government can also help to coordinate retaliatory measures from a group of foreign investors. The problem with relying on this type of enforcement is that governments have a variety of objectives in foreign policy and in

[18] At the same time the influence of the foreign power can be used to broker better ex-ante deals for the foreign investor as has been claimed by the literature on imperialism and dependency. Nevertheless, as will be seen in Chapter 3, in the case of oil in Venezuela as time passed new deals with foreign investors got

some circumstances protecting the property rights of its nationals might not be the highest priority (Krasner, 1985).

Foreign Cartel Enforcement

Foreign cartels have also been important external enforcers of investment deals. Lipson (1985), Krasner (1985), and Kobrin (1980, 1984, and 1985) and Vernon (1977) argue that in many industries the existence of international oligopolies complemented or even sometimes substituted for hegemonic enforcement. The cartels were able to effectively threaten to punish contract reneging, by withholding investments and closing distribution channels. The authors show, that in industries that were not cartelized, the threat of investor retaliation typically suffered from a collective action problem unless it was solved by pressure form the hegemonic power. As explained before, investors have powerful incentives to defect from an investors' boycott.

External Enforcement in the First Half of the XX Century

Since independence at the beginning of the XIX century and sometimes until well entered the XX century, Latin American states were weak and underdeveloped. They typically lacked a strong centralized authority with full monopoly over coercive power, and in many instances had little capacity to establish order or systematically extract taxes. Moreover, their sovereignty was significantly limited by the principles of *international*

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progressively tougher (the host government taking a higher share in profits). At the same time hegemonic powers insisted on enforcing that old deals were maintained as originally signed.

law established and enforced by foreign powers with hegemony over the region (first Britain and then the U.S).

Lipson (1985) argues that, in the first half of the XX century, foreign investment in Latin America was reasonably well protected against expropriation by the threat of retaliation by the U.S. government. In this period, there were very few instances of outright nationalization and in these few cases foreign investors were usually well compensated (Mexican oil nationalization in 1938 being the most important case).

Lipson presents evidence showing that most of the time US enforcement played an important deterrence role by enforcing the principles of *international law*, in particular the sanctity of contracts and their prevalence over domestic laws. Enforcement was based partly on the threat of coercion (diplomatic and military action), but more importantly on the threat of withdrawal of the benefits of the bilateral relationship (mainly credit and aid). In many situations the U.S. government also served to coordinate and police the retaliatory action of private investors (Kobrin, 1985). Nevertheless, it was also the case (increasingly since World War II) that in some occasions the U.S. government did not use its enforcement power, because it decided to further other geopolitical objectives (e.g. threat of Soviet alignment, need of supplies for the war effort) (Philip, 1982; Lipson, 1985; Krasner, 1985; Bates, 2001).

International cartels and oligopolies in a variety of industries played an important role in external enforcement. The oil cartel of the *seven sisters* was among the most effective at enforcing property rights (Lipson, 1985; Yergin, 1992). Since its consolidation in the late 1920's and until its decline in the late 1950's, the companies coordinated their actions in retaliation to reneging governments. The only two significant

oil-exporting countries that expropriated their oil industries, Mexico in 1938 and Iran in 1951, were significantly punished. The boycott to Iran was "devastatingly effective," in 1952 and 1953 Iran was able to sell only 3% of what it had produced before nationalization (Lipson, 1985; Kobrin, 1980, 1984 and 1985). As a result the oil industry was "returned" to foreign investors. In Mexico the sanctions were less dramatic for a variety of reasons. 1) The Mexican oil industry was in geological decline.[19] 2) The U.S. government was worried about costs of punishing Mexico at a time of world war. Nonetheless, foreign oil investors in Mexico were eventually compensated and the Mexican oil industry did not export significant amounts of oil for three decades.

The Nationalizations Wave: The Decline of External Enforcement

By the second half of the XX century, Latin American rulers had become more capable of exercising sovereignty and were increasingly subjected to popular pressures for increased public expenditure. Additionally, the international regime that emerged after World War II (e.g. de-colonization and independence, the creation of the United Nations) made open external enforcement of property rights by foreign powers increasingly difficult and less legitimate (Krasner, 1985; Lipson, 1985). Domestic sovereign laws were to prevail over any previously signed contract. More importantly, credit finance from a variety of sources became increasingly available in the late 1960's and 1970's, and as result, the foreign hegemonic powers lost a powerful source of enforcement (the access to credit).[20]

[19] See Haber, Razo and Maurer (2002)
[20] The increased availability of credit also reduced reputational costs.

The decline of some international oligopolies in the 1950's and 1960's made them less effective as expropriation-punishment mechanisms. Industrial concentration in industries such as aluminum, zinc, copper, lead, and oil declined significantly. In particular the oil industry changed dramatically with the rise of the *independents* in the 1950's. The Herfindahl Index of concentration for the oil industry was 0.20 in 1950 and it declined to 0.05 in 1975. That is equivalent to having 5 "effective" firms in the 1950's vs. 20 in 1975 (Vernon, 1977).

The changes in the international environment, that reduced external enforcement capabilities, were accompanied by a dramatic increase in the number of outright nationalizations. In the 1970's the average number of nationalizations (i.e. take-over of assets by the state) of foreign enterprises per–year increased almost 200% in comparison to the average for the previous decade.[21] Kobrin (1980) counted 511 nationalizations in 1960-76 concentrated on the last 4 years of the period. Many of these nationalizations were only partially compensated. In contrast, as mentioned earlier, before the 1960's the number of nationalizations in Latin America was negligible. Similarly, after 1981, there have been just a few nationalizations (11 according to Moran, 1998).

A large proportion of the nationalizations were in high sunk-cost sectors: 41% in natural resources (mostly oil and mineral extraction, 20% in oil alone) and 12% in infrastructure. Natural resource sector projects were expropriated in a proportion three times higher than their share in the number of foreign investment projects. Among the nationalizations that were not part of a socialist transformation program, oil nationalizations represent almost 40% of the total (Kobrin, 1980). By 1980, all significant oil producing countries had partially or fully nationalized their oil industry.

It is important to re-emphasize that nationalization is only one mode of expropriation. Less visible modes of revenue expropriation have been pervasive throughout history (before and after the 1970's) and continue being the main risk for foreign investors (Philip, 1982; Lipson, 1985; Moran 1998; Wells, 1999).

Most authors in the infrastructure and mining investment literature agree that nationalization –as a mode of expropriation in which the state takes control over private assets- is unlikely to occur frequently in the foreseeable future (Waelde, 1999; Noll, 2000; Wells, 1999). The massive use of nationalization in the 1970's was a result of special circumstances. The ideological forces promoting nationalization as a mode of expropriation have receded. The record of inefficiency in many state-owned enterprises in the 70's and 80's has reduced political popular support for public ownership. Nevertheless, important expropriation risks continue to exist in the form of -regulatory and tax- revenue expropriation (Moran, 1998; Wells, 1999; Levy and Spiller, 1996). The incentives for expropriation are still present; only the strategies to expropriate are somehow different.

New Developments in External Enforcement

In the last two decades there have been significant efforts in the direction of developing a new international legal system for the protection of foreign investors rights, after the previous system broke down in 1960-1980. In particular, bilateral and multilateral investment treaties have multiplied. However, most analysts consider that international agreements have not proven very effective mechanisms of deterrence

[21] Own calculations based on data from Krasner, 1985, p. 184.

against revenue expropriation (Moran, 1998; Waelde, 1999; Sacerdoti, 1999; van der Walt, 1999). Private international arbitration of investment contracts has also been widely included in recent oil and infrastructure sectors contracts in Latin America. The problem is that most treaty and arbitration remedies are in the hands of the reneging domestic government and therefore are difficult and costly to enforce (Smith, 1997; Waelde, 1999; van der Walt, 1999). Additionally, the legal process of arbitration and adjudication takes time, and revenue expropriation can be very significant in a short period of time. Finally, defining "events" of revenue expropriation tends to be difficult since they can be confused with "legitimate" changes in legislation.

In the last decade, in order to mitigate the commitment problem in the absence of traditional external enforcement, a wide variety of institutional arrangements have been developed. In those arrangements external enforcement typically complements the role of domestic institutions and reputational mechanisms. Contractual limits to taxation increases, the use of external assets as guarantees, and the use of multilateral agencies and foreign courts as enforcers, have been some of the ingredients of these new kinds of external enforcement mechanisms (Moran, 1998). In part, these new governance structures seem to have been responsible for the significant attraction of foreign direct investment in Latin America in the last decade.

Chapter 4 analyzes the successful implementation of a new institutional framework to attract foreign investment to the Venezuelan oil industry. The mechanism is based on the provision of a *hostage* that foreign investors can seize in case of government reneging.

VI. COMMITMENT PROBLEM, CONSEQUENCES, AND MITIGATION

As previously analyzed, commitment to up-hold investment deals is only credible if the total (discounted) costs of expropriation are higher than the total benefits. If they are not, investors can reasonably expect to be reneged on, i.e. commitment is not credible. What are the consequences of lack of credible commitment not to expropriate sunk-assets? Since investors know that political authorities will have ex-post incentives to opportunistically renege on the investment deal, they will ex-ante take actions to evade (not invest), mitigate or demand compensation (a risk premium) for the risk of expropriation.

One of the consequences of lack of commitment is that investors might not be willing to enter into any bargain that is acceptable to the government (and the public). As a result, either no investment or a sub-optimal level of investment will be deployed. This result could be very costly for development since very profitable industries and important services will not grow at its full potential.[22] Henisz (2000a) and Henisz (2000) provide econometric evidence supporting the hypothesis that the level of investment in electricity and telecommunications is significantly affected by the likelihood of expropriation (measured by institutional constraints to policy change).

Alternatively, investors might demand in compensation a high return (risk premium). In particular, they would ask for front-loaded short-term returns to recuperate

[22] It will also be costly for politicians in the future as a result of the forgone fiscal revenues and even costly in the present if there is a significant unrealized investment potential that could represent significant current investments (what was referred to as reputational costs before).

costs very quickly.[23] This result can also be detrimental for consumers or for the future fiscal revenues generated by the investment project. Moreover, at some point offering better returns to investors cannot be a solution since offering higher returns could itself increase the risk of future reneging (due to increased public pressure, higher legitimacy of the expropriation rationale, and the existence of a more appropriable quasi-rents) (Smith, 1997; Wells, 1999).[24] By creating a credible commitment and reducing the risks of private investment in sunken assets, the government can potentially obtain, *ex-ante*, more favorable deals and can attract more investment.[25]

Investors can try to mitigate political risks using insurance and other risk mitigation strategies. Insurance against the most open forms of expropriation (nationalization in particular) has developed significantly in the past few decades. Still most forms of subtle revenue expropriation are still uninsurable due to the difficulty of defining the occurrence of an insured event and the potential for moral hazard and adverse selection (Moran, 1998; Wells, 1999). Other strategies for risk mitigation have included devising mechanisms to increase the costs of expropriation for politicians (along the lines previously described in this Chapter).[26] In any case, risk mitigation is costly. Its benefits in terms of risk reduction have to be weighted by its costs.

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[23] For example, Levy and Spiller (1996), argue that telephone charges in Argentina were set at very high level to attract investors to the privatization of the phone company in a context of low institutional credibility ("sweet deal").

[24] A similar phenomenon occurs in the case of sovereign debt. There exists some limit beyond which no one would be willing to lend more money to the sovereign, regardless of the interest rate he is willing to pay, because higher interest rates increase the likelihood of default (Weingast, 1997).

[25] Other potentially negative consequences of lack of commitment are that operators may keep maintenance expenditures below the optimal and investors may select a sub-optimal technology that requires less sunk investments (Spiller and Savedoff, 1998; Henisz, 1999).

[26] Examples of this alternative mechanisms include: using domestic credit (or off shore resources of the domestic elite) to finance the project (Uzbekistan), promoting widespread distribution of equity shares

Providing credible commitment has costs in terms of other socially desirable dimensions. There are tradeoffs between the advantages (and costs) of commitment and the advantages (and costs) of flexibility and discretionality in policy change (adaptation to unforeseeable contingencies, democratic accountability). Moreover, there might be reasons for politicians to assume socially sub-optimal commitments. For example, politicians might be tempted to provide guarantees that are executable in the long term (when they will not be around) in exchange for investment (or bribes) today (Irwin et al., 1997).

One important element to emphasize is that credible commitment is in reality a continuous variable. Credibility comes from the expectation that the government's cost-benefit analysis would deter it from expropriation. Since both benefits and costs are continuous variables that can change, credible commitment is also continuous, not an either/or proposition. The investor obtains a high level of credible commitment when he assigns a very low probability to the benefits being higher than the costs (low risk of expropriation). However, even with high levels of credible commitment, events that are assigned a low probability of occurrence can occur, e.g. a dramatic fiscal or balance of payment crisis, increasing the benefits of expropriation to a point where expropriation becomes profitable for the government. As will be shown in the following chapters, commitment mechanisms make expropriation costly under a high range of circumstances, but they do not disable the capacity of the government to expropriate.

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among the domestic population (Bolivia, Eastern Europe), and including politically well-connected partners in the project (Indonesia and Mexico) (Haber et al., forthcoming; Monaldi, 1997; Moran, 1999).

VII. Applications of the Theory: Oil Exporters and State-Owned Enterprises

The general theoretical framework developed in this chapter can be applied to all high-sunk sectors with minor adjustments. This section presents its application to the specific case of the oil industry in an oil exporting country and briefly to the case of state-owned enterprises.

Expropriation in the Oil Industry

The oil industry, as the infrastructure sectors, has a high proportion of sunk-costs. Crude oil production, the upstream part of the industry, can be separated in three faces: exploration, development, and extraction. The first two require mostly sunk investments. Extraction has a higher proportion of operating costs. The downstream sectors (refining and distribution) also have some significant sunk costs (e.g. oil refineries and oil pipelines).

Adelman (1993) estimates that operating costs represent around 10% to 15% of crude oil production costs. Of the non-operating costs a large proportion is typically sunk. Sunk costs are estimated to represent around 50% to 70% of the total costs. In the case of Venezuela, Adelman estimated that in 1962-64 development costs were $0.56 per-barrel and operating costs $0.06 per-barrel (9.7 % of total cost). In Texas, in the same period, development costs were $1.56 and operating costs $0.18 per-barrel (10.4 % of total cost).

According to Savedoff and Spiller (1998), operating costs in infrastructure industries are: 57% for electric utilities, 35% for telecommunications, 32% for gas utilities and around 10% for water companies. The figures presented for oil might not be directly comparable to these figures, but as a first approximation, the orders of magnitude are similar.

It can take a long period of time to recover all costs in oil exploration and development. The exploration face can take an undetermined amount of time (until profitable oil is found). Exploration can be very costly sometimes without success. Development of oil fields takes between 3 to 6 years. The life of an oil field varies. It could be productive for many decades, although at some point increasing investments would be required for additional extraction (Adelman, 1993 and 1995).

In contrast with utilities (electricity, water, phone service) the oil industry does not perfectly match two other characteristics that the infrastructure literature has identified as key elements for expropriation: 1) the existence of very high economies of scale (natural monopoly component), and 2) massive consumption (Savedoff and Spiller, 1999; Basañes et al. 1998). According to the infrastructure literature, the first characteristic provides a policy rationale for regulating the industry (as a monopoly) and the second gives the industry political salience (due to the existence of a large base of political constituents that benefit from low prices). Both elements, combined with the quasi-rents generated by sunken-assets, induce price regulation bellow opportunity cost, not allowing for the recuperation of sunk costs. In contrast, in the case of the oil industry:

1) Economies of scale are less significant. According to Adelman, there are some significant economies in large oil fields, but as a whole, the industry is far from being a natural monopoly (Adelman, 1993 and 1995).

2) Even though gasoline is widely consumed, in many countries the production and refining faces of the oil industry have separate ownership and institutional frameworks. In addition, the focus of this project is on net-exporters of oil (such as Venezuela, Ecuador, and Mexico) were oil is an important source of fiscal income and foreign currency. Most final consumers are not political constituents. The risk of expropriation is therefore more *fiscal* than *regulatory*. Still, as will be shown later, regulation of domestic gasoline prices bellow opportunity cost has been a typical strategy of revenue expropriation in Latin America and in particular a significant source of revenue expropriation from the Venezuelan petroleum industry (Philip, 1982; Rigobon, 1992).

Despite the fact that these characteristics of the oil industry do not perfectly match those of infrastructure sectors, the sector is highly regulated and politically salient for *analogous* reasons. Moreover, there are additional sources of expropriation risk in the oil sector of an oil exporting country:

1) Oil exports generate *rents* (extraordinary profits above the opportunity cost of reproducible factors) that can be appropriated by the state without affecting long-run production.[27] Those rents are of two types: monopolistic rents, generated by cartel-induced restrictions on production (e.g. OPEC) and differential rents, generated by the natural low cost of extraction in some reservoirs compared to the world market marginal production cost (i.e. a result of the differences in productivity of different reservoirs). For example, the cost of oil production in Venezuela is about a third of the marginal producer's in Texas. The existence of such *rents* and the fact that oil reservoirs are legally owned by the state makes the oil industry a target for special taxation, control and regulation, providing the policy rationale for revenue expropriation.[28]

2) In Latin America's large net oil exporting countries (such as Venezuela, Ecuador, and Mexico), oil fiscal revenues have historically constituted the largest source of tax revenue (in Venezuela between 50% and 80% of total fiscal revenues). Oil sunk-assets (quasi-rents) and rents in those countries are very large relative to the government's budget, increasing the temptation of revenue expropriation, especially in times of fiscal stringency. Moreover, when the price of oil falls significantly, fiscal revenues decline sharply and the temptation (benefits) of expropriation

[27] Rents should be distinguished from quasi-rents. See footnote above.

rises. As a result the oil industry can be squeezed between lower oil profits and higher revenue expropriation.

3) Adelman (1993) has argued that dependence on oil, a commodity with volatile price, as a source of fiscal revenue, induces the government to have a short-term horizon. The reason is that a volatile income has to be rationally discounted at a higher rate (due to its higher risk). Theoretically, oil exporters could create stabilization funds and diversify, but in reality that has not been the case for reasons that are beyond the scope of this work. Therefore, oil income volatility can increase the discount rate of politicians and therefore the incentives for expropriation.

4) Finally, Vernon (1971), suggested an additional source of expropriation risk in mineral resource industries. The "obsolescing bargain" argument proposes that due to the high risks intrinsic to the initial phase of exploration for mineral resources, governments are willing to offer very good deals to foreign investors at the beginning. But once the mineral is discovered and geological risks largely disappear, the government is not satisfied with the investor obtaining a risk premium (the original

[28] Legal ownership of oil reservoirs is not a necessary condition for revenue extraction, tax and regulatory sovereignty suffices.

bargain becomes "obsolete"). Moreover, with the updated information, other investors are willing to offer a better deal.[29]

Export industries, including the oil export industry; have an advantage over the infrastructure sectors in terms of attaining credible commitment. The fact that most of the output is exported, and generally does not have a domestic market, creates the possibility of using the offshore foreign currency denominated revenues as a guarantee against expropriation. This fact opens a variety of alternatives for external enforcement of oil export investment deals (that are generally not available to infrastructure deals with revenues in domestic currency). This point will be further developed in chapters 4 and 5 when the hostage mechanisms are presented.

State Ownership and Expropriation

Historically nationalization occurred often after a period of increasing revenue expropriation and confrontation with private investors. A decline in private investment, as a consequence of the increased perception of risk, produces after some time deterioration in the sector and an urgent need for new investments to sustain production. If devising a new credible commitment with private investors is politically not feasible, public investment rises as a natural alternative. In Latin America, nationalization typically generated a short-lived initial increase in investment followed by significant

[29] Notice that this problem could be partially solved with the proper taxation technology. See discussion later in this section.

financial difficulties, inefficiency, and deterioration (Gomez-Ibañez and Meyer, 1993; Dailami and Klein, 1997; Noll, 2000).

Does state ownership eliminate the expropriation problem? Generally the answer seems to be negative. In fact nationalization can increase the tendency to expropriation. However, as with private investment, the degree of expropriation significantly depends on the institutional details.[30] The institutional framework described in this chapter applies, with minor modifications, to the case of state-owned enterprises (SOE).

The political benefits of expropriation remain intact with state-ownership. Politicians can use the revenues of the SOE for politically beneficial objectives. Investing in the SOE competes with other -potentially more urgent- uses of the national budget. SOE with high-sunk assets become the *cash cows* of the government (Noll, 2000). Revenues can also be very easily diverted to transfer benefits to political constituents in the form of subsidized prices, excessive employment or forcing the SOE to make "social" expenditures not related to its profitability.

The direct costs of revenue expropriation are equally low in high-sunk cost SOE since it will take years of under investment to cause a decline in performance. Reputational costs can be indirectly important. The lack of commitment affects the credit rating of the SOE and potentially its use as a guarantee to obtain credit for the government.

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[30] In the institutional economics literature the classic solution to the problem of quasi-rent extraction due to *asset specificity* is vertical integration (Williamson, 1996). Sunk costs constitute a case of the more general category of *asset specificity*, i.e. when some assets have a higher value only in a specific relation. The owner of those assets can be "held up" by others with decision power over that relation and appropriable quasi-rents can be extracted (Williamson, 1996). As explained, at the level of firms the typical solution is vertical integration (i.e. unified ownership of the assets involved in the relation). To some degree the vertical integration solution might appear to be similar to state ownership since it is making the government (the holder of control rights, which can expropriate) owner. Nevertheless, on closer scrutiny, the analogy to

Depending on the degree of financial and operative autonomy that an SOE has, the institutional costs of expropriation can be extremely low (e.g. as when the revenues are collected by the Ministry and then are given to the SOE to pay costs) or more significant (if the SOE is financially autonomous, management is not easily removable by the executive, or a minority share of the capital is owned by domestic private shareholders). In sum, SOE are very vulnerable to revenue expropriation of sunken assets unless credible domestic institutional arrangements protect its financial and operative autonomy.[31] The case of state ownership in the Venezuelan oil industry will be discussed in Chapter 4.

A Note on Asymmetry of Information, Uncertainty, and Tax Technology

The simple model developed in Section II assumes away two important elements of the interaction between the sovereign and investors. First, it assumes perfect information, in particular that the *government* knows the level of investments, costs, and profits. In reality the *investor* knows the value of these variables, but the government only knows them imperfectly and has to incur in monitoring costs to check them. This asymmetry of information introduces a different dimension to the strategic interaction between the two actors. The case of Venezuelan oil offers a good illustration. As will be discussed in Chapter 3, the Venezuelan government repeatedly accused the oil companies of underreporting their profits to avoid taxes. In fact, tax increases were sometimes used

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vertical integration proves false. State authorities have control rights, but not cash-flow rights over the assets. Therefore, authorities do not internalize the costs of their decisions (as do the owners of the firm).

[31] Nevertheless, in this case additionally there exist a risk of management appropriation of quasi-rents to be weighted against the delegation of full autonomy (Noll, 2000; Shleifer and Vishny, 1994).

to make the companies pay what the government considered was its "real" share on profits. In this project this dimension will not be explored further. Even though it is an interesting part of the story, adding it does not significantly contribute to understand the origins of expropriation, beyond the simple model presented here. Returning to the Venezuelan case, even when observable variables (e.g. international price of oil) clearly showed that profits were declining governments decided to increase taxes. Moreover, under state-ownership with much better access by the government to production information (less asymmetry), revenue expropriation has been still very common in Venezuela and other Latin American countries.

The simple model presented here also assumed away economic uncertainty (e.g. variations in prices) and geological uncertainty (e.g. level and quality of reserves to be discovered). In reality the level of future profits is not known -ex-ante- by either the investor or the government. As a result it would be inefficient to set the tax bill in advance. Taxes are generally set contingent on the outcome of profits and other relevant variables. Uncertainty is particularly high in the phase of oil exploration were geological risks could be very substantial. At that stage the investor has to be offered very attractive fiscal terms in order to be induced to invest, more risk requires more return. However, in the latter phase of oil extraction, when reserves are known, the government can expect to get a much better fiscal deal. This is the situation identified by Vernon's (1977) as the obsolescing *bargain* (described before). The problem is that if taxes were contractually set at a level appropriate for the exploration phase, they will have to be adjusted in latter phases. What may look like government opportunistic reneging on the original bargain could be simply reasonable adaptation to a different set of circumstances.

The role of tax technology is crucial to analyze both of these issues (information asymmetry and uncertainty) in the interaction between governments and investors. If taxes can be set ex-ante to account for different phases of production with different risks and profits involved, the stability of contracts would not be affected by the *obsolescing bargain*. More generally more complex taxation systems could adapt to a larger variety of circumstances enhancing contract stability.

Unfortunately, developing governments sometimes do not have the monitoring capacity to implement complex tax systems. Without good government monitoring investors could take advantage of their private knowledge to avoid taxes. As a result governments have implemented very crude tax systems that are simple and require little information (e.g. royalties that require knowing only the total revenue to be calculated). The problem is that simple tax systems do not adapt well to changing circumstances and have contributed to the tendency of government reneging of contracts.

VIII. CONCLUSIONS

From the theoretical framework presented in this section a set of basic theoretical propositions can be summarized:

1) Since the direct costs of expropriation in high-sunk cost industries are generally low, in the absence of external enforcement (foreign power or cartel of investors) or domestic enforcement (independent veto players) to the investment deal, expropriation is likely to occur.

2) Ceteris paribus, expropriation is likelier: a) the higher the stock of assets already sunk (higher benefits), b) the lower the potential of profitable future investments in the sector (lower reputational costs), c) the higher the discount rate of politicians, and d) the less restraints on the executive placed by other potential veto players, such as the legislature or the judiciary, and the more discretionary and concentrated are the powers of taxation and regulation in the elected executive.

CHAPTER 3

THE RISE AND DECLINE OF FOREIGN INVESTMENT IN THE VENEZUELAN OIL INDUSTRY (1920-1976): HOW SUCCESSFUL COMMITMENT ENDED IN EXPROPRIATION

I. INTRODUCTION

All over Latin America, sectors with significant sunk assets, such as oil, electricity, telecommunications, water distribution, and mining, have been primary targets of state expropriation of revenues and assets. In the twentieth century, the typical case developed in a cyclical pattern of investment growth and decline. Starting with a period of significant asset deployment by private (mostly foreign) investors. Followed by a period of increased revenue expropriation by political authorities, which typically led to subsequent decline in foreign investment and industry decay.

In many occasions a foreign investment cycle ended up with outright nationalization of the industry. After nationalization, an initial phase of increased investment by the state has been usually followed by an increasing difficulty financing the potential expansion of the sector and sometimes a significant decline in output performance. In general, state-owned companies have also been –as private investors- the victims of episodes of revenue over-extraction. Eventually, in most countries nationalized high sunk-cost sectors have been reopened to foreign investment and in many cases state-owned companies have been privatized.

This tendency to expropriation observed in high sunk cost sectors contrasts, sharply with its relative inexistence in other sectors in developing economies, for example manufacturing, technology, and services, as explained in Chapter 2. In general, both under private and public ownership there has been a historical propensity to have

difficulties in developing the full potential of these high sunk cost sectors. In fact, in some Latin American countries these sectors have remained largely undeveloped despite being potentially very profitable (Levy and Spiller, 1996).

The history of the Venezuelan oil industry is very illustrative of the dynamic of high-sunk-cost sectors. Foreign investment in oil started in the 1910's and grew rapidly in the 1920's, making Venezuela the world largest exporter of oil by the end of that decade. Investment increased even more rapidly after World War II, until 1958. In contrast, in the period 1958-76, a systematic increase in rent-extraction by the state and the shortening of investors' horizons produced a dramatic decline in oil investment that ended up with the nationalization of the industry. Then, again in the 1990's the oil sector was re-opened to foreign investment with significant success (as will be analyzed in Chapter 4).

Why has there been this tendency to government expropriation in high sunk cost sectors, both with private and public ownership? Under what conditions is expropriation likely to occur? This chapter analyzes the evolution of foreign oil investment in Venezuela using the analytical framework developed in Chapter 2. In particular, the evolution of domestic institutions (laws, regulations and political regime) and external enforcement (foreign power and oil cartel), the magnitude of appropriable quasi-rents and reputational costs, are used as analytical tools to evaluate the sources of commitment and expropriation.

To explain the evolution of the oil sector in Venezuela, the literature has emphasized the importance of ideological factors driving institutional change, i.e. the rise and fall of the *rentist* and state-led development ideologies (Baptista and Mommer, 1992; Urbaneja, 1992; Espinasa, 1995). This view emphasizes that the leading ideologues in

Venezuela thought of oil as a temporal source of rents that would eventually disappear. Therefore, those ephemeral rents had to be quickly spent to *sow the petroleum* in the development of agriculture, manufacture and the provision of social services.[1] To do that the state had to have a significant degree of control over the oil industry. The period of increasing government extraction of revenues (1958-1976) coincided with the rise to power of Acción Democrática a party whose leading oil ideologues were advocates of these views. Throughout this work, it will be argued that ideology does not offer a fully satisfactory explanation. Governments and regimes with different ideologies adopted very similar policies with the clear pragmatic objective of maximizing fiscal revenue extraction from the oil industry - sometimes contradicting their official ideological stand.

This chapter offers a different interpretation based on the political cost-benefit analysis of rulers, as presented in Chapter 2. In the early stage of oil investment in the 1920's, the political benefits of attracting additional investment were significantly higher than the quasi-rents that could be expropriated. More importantly, in the period 1920-1955, there were external mechanisms of enforcement that limited sovereign authority and made expropriation relatively costly (such as the threat of U.S. intervention or the threat of boycott by a cartel of investors), thus the tendency to expropriation was limited and foreign investment flourished.

In time, a decline in the original sources of enforcement, including a breakdown of the international cartel of oil companies, generated a situation of instability and an increased tendency to expropriation of revenues (1958-1976). By that time, the

[1] The phrase *sowing the petroleum* was originally coined by the political leader and intellectual Arturo Uslar Prieti, but was later used as a general label for the strategy of diversifying using the additional rents extracted to oil production. In fact, Uslar later became a leading opponent of what he considered excessive state intervention in the oil industry by AD governments (Baptista and Mommer, 1992).

significant accumulation of sunken assets (i.e. quasi-rents) from the previous era of high investment, had amplified the benefits from expropriation. More importantly, the systematic decline in domestic institutional restraints to expropriation (i.e. the concentration of discretionary control rights over oil revenues on the executive) made the extraction of oil revenues a relatively costless strategy for politicians. Eventually, the increasing extraction of revenues by the government and the expectation of a continued infringement in investors' property rights in the future induced a reduction in investment by the foreign multinationals.[2] It took thirteen years of accumulated investment decline to induce a drop in production capacity. As a result, production fell rapidly in 1971, increasing the need for significant new capital deployment to maintain production capacity.

The government had to come up with a new strategy to obtain the capital. Since external enforcement was unavailable and domestic institutions did not limit the government, it was difficult to commit not to expropriate foreign investors. In the end, nationalization was the way out (in 1976). It was made easier by the sudden abundance of resources generated by the oil boom of the 1970's. It was also made easier by the abundance of cheap international credit in that decade and the ideological legitimacy given by an international wave of nationalizations. After nationalization investment resumed, but eventually the state owned company also faced difficulties financing the expansion of the oil sector due to the government tendency to over-extract revenues. In the 1990's the oil sector was again opened to foreign investment. As will be shown in

[2] The oil companies' profitability was further hurt by the decline in oil prices during most of the 1960's (see Figure 3.9 at the end).

Chapter 4, commitment was provided by a new institutional framework, which combined domestic institutions with external guarantees and enforcement.

This chapter is organized in five additional sections. Section II, discusses the early development of the oil industry under General Gómez dictatorship. Section III, evaluates the institutional evolution of the sector after the approval of the 1943 Hydrocarbons Law, which regulated the industry during a period of investment boom and tax stability (1943-1957), but sowed the seeds of future expropriation. Section IV, the core of the chapter, analyzes the period of increased revenue expropriation 1958-1976, which led to a significant decline in the oil industry. Section V, reviews the relevant independent variables that impacted the political cost-benefit analysis of expropriation in the different periods in evaluation and derives the causes of expropriation in 1958-1976. Section VI, concludes.

II. The Rise Of Foreign Investment:

Low Taxes and Commitment with External Enforcement (1920-1943)

In Venezuela oil investment and production became economically significant in the 1920's. Oil became the country's largest export in 1927 and by the 1930's Venezuela was the largest oil exporter in the world (and continued until 1971). Production in 1929 reached 373,000 barrels-per-day (BPD) (compared to 120,000 BPD in Mexico). Around 99% of the production was exported, mainly to the U.S. That same year, oil-generated fiscal revenues became the largest item in the government's budget and have always been since (Baptista, 1996; Philip, 1982).

Oil exploration had started a decade earlier under very high geological uncertainty. Very significant investments were made before profitable oil began to be extracted (Philip, 1982). Figure 3.3.1 shows the rapid increase in production in 1920-1944. The slowdown produced by the world depression in 1930 and the short dip produced by World War II, are the only breaks in the upward tendency. The chart also shows the equally rapid increase in the capital stock of the oil industry, with similar slowdowns produced by the events mentioned above.

Since 1909 and until his death in 1935, General Juan Vicente Gómez, autocratically ruled Venezuela. Gómez came into power, backed by U.S. support, after ousting his nationalistic predecessor (General Cipriano Castro) who had systematically confronted the U.S. and European powers. Gómez was, therefore, particularly careful not to hurt any significant U.S. interest. Although, Gómez systematically aimed to increase

the state's income from oil, he always backed down from reneging on the contracts made with foreign investors. Contract *sanctity* was the basic principle defended by the U.S. diplomacy at the time, drawing from the prevailing doctrine of international contract law (Philip, 1982; Lipson, 1985).

The first Petroleum Law of 1922 conclusively established *state* ownership over oil reserves (the historical legal precedent had been state ownership over mines). Gómez typically gave oil concessions to friends, relatives and other well-connected intermediaries, which in turn sold them to international companies, obtaining a handsome profit. Landowners initially were given some compensation, but since they did not have property rights over the subsoil eventually their compensation became negligible. The concessions were governed by specific contractual agreements that had to be in accordance with the parameters established by the law applicable at the time of the approval of the concession. The terms were initially very favorable to investors, although they varied significantly across concessions. Taxes in concessions governed by the Law of 1922 represented around 10%-20% of the operating profits. The fiscal take per-barrel declined in the 1920's as production increased, given that -at this point in time- taxes were mainly based on the area of concession rather than profits or production (Tugwell, 1975; Mc Beth, 1983). Nevertheless, according to Philip (1982) significant profits were not being made in Venezuela until around 1928 (after companies were able to recover the initial investments in exploration and field development).

Between 1922 and 1943 the government systematically changed the hydrocarbons laws to increase oil taxes (royalties and other specific oil taxes). In Espinasa's words (1995, p.10), "as the state got conscience of the *rentist* potential of oil, there was an

increasing tension between the nation, requesting a higher rent and the companies resisting it... The evolution of the legal framework... was reflected in the seven laws approved between 1920 and 1938, each one representing a gain in the *rentist* take of the state." Nevertheless, it is important to emphasize that those tax increases applied only to the *new* concessions, those given after the approval of each successive law. The *original bargain* established in each concession was maintained almost without change through this whole period (Philip, 1982, Karl, 1997). Nevertheless, in the 1930's the total fiscal participation over profits of the oil industry tended to increase, as more quantities of oil from latter signed contracts was extracted. It averaged around 25-30% in the first half of the decade and increased to 40% by the end of the decade, with significant variation across different concessions (See Figure 3.3.2).[3] In 1936, the total after-tax operating profits for foreign companies represented roughly US$ 150 million (at 1998 prices).[4]

Philip (1982) and McBeth (1983) argue that, in the first two decades of production, foreign companies were able to enforce the oil contracts even without asking for the help of their home governments. They claim that the economic costs of reneging were more significant than the threat of military or political intervention. Using the theoretical framework presented in Chapter 2, such claim seems plausible. The reputational costs of reneging at this point appear to be high and the benefits still relatively low. Oil investment had just started (relatively low level of sunken assets/ low benefits of expropriation) and exploration continued being successful. Moreover, the high risks involved in exploration (in a still relatively unexplored region) required high returns in compensation and the potential expansion of production was expected to be a

[3] In 1936 it was 26%, in 1939 it reached 39% (Source: PDVSA and own calculations).
[4] Source: PDVSA and own calculations

significant source of future fiscal revenues. Additionally, at the time, taxes were contractually based mainly on the concession area rather than in the level of production, therefore in order to obtain more fiscal resources from oil, the easiest strategy was to grant new petroleum concessions (Philip, 1982; McBeth, 1983).

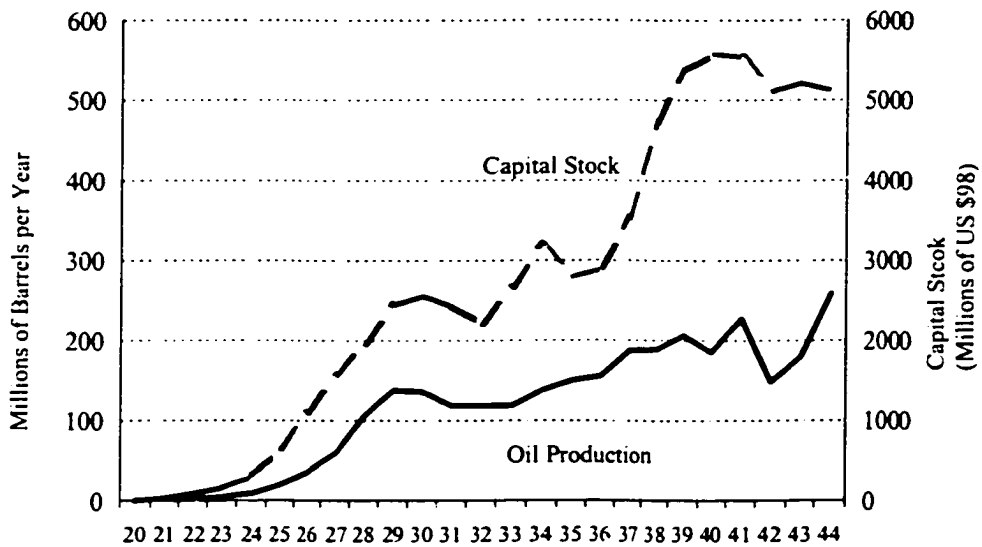
Reputational costs were also made high by the rise of a relatively stable and effective *international oil cartel.* The *seven sisters* (as the cartel was eventually known) where led by the three *major* companies Standard Oil of New Jersey (later Exxon), Royal Dutch/Shell, and Anglo-Persian (later BP). After the Achnacarry Accord of 1928 these companies agreed to maintain their share of production relatively constant in each country outside of the U.S. in which they operated. Marketing quotas were widely put into force and were specifically agreed throughout Latin America (Philip, 1982; Yergin, 1992). In Venezuela, at the beginning, oil concessions were exploited by a variety of companies but by the end of the 1920's they were increasingly consolidated into two: Jersey Standard through its affiliate Creole (later known as Exxon) and Shell. By 1937, 92% of the Venezuelan oil production was extracted by these two companies. The international cartel plus the dominant position of the two world largest companies made government reneging potentially very costly.[5] The companies successfully defended the principle that the state could only charge the taxes that were established in the concession contract.

[5] The alternative of state ownership of the oil industry appears to have been relatively difficult at this time. The Mexican Nationalization of 1938 showed the difficulties for sustaining investment after expropriation, with state ownership, in a relatively more advanced country. According to Philip (1982), lack of human capital and technology were barriers to nationalization although not insurmountable.

Figure 3.1

Oil Production and Capital Stock:

1920-1944



Source: Baptista (1997) and own calculations.

The period, 1920-1943, was characterized by relatively low *domestic* institutional costs of expropriation, since the dictator controlled all centers of government (including the executive, the regional governments, the legislature, and the courts). There were no other significant veto players domestically. Nevertheless, the legal framework helped the exercise of external enforcement. Respect for the international principle of the sanctity of contracts provided a clear *bright-line* to identify government reneging. It constituted a *substantive* legal restraint against expropriation although supported by *external* enforcement and reputational costs rather than by domestic judicial independence.[6]

If the government desired to obtain additional fiscal revenues from the oil industry, the oil legislation provided incentives to give away additional concessions instead of only raising taxes. As discussed before, changes in the oil laws did not apply to previously signed concession contracts. Therefore, in order to obtain higher fiscal revenues when changing the tax rate by law, new concession had to be given away. As will be shown, the Hydrocarbons Law of 1943 would change this principle opening the door for future expropriation.

In sum, in the period 1920-1943, commitment against revenue expropriation seems to have been guaranteed by the prospect of high reputational costs and by external enforcement mechanisms (U.S. enforcement and the cartel of oil producers). Domestic legislation served to codify the external enforcement mechanism. As a result the large investments in exploration and development required for the take-off of the Venezuelan oil industry were made and Venezuela became the largest exporter of oil in the world.

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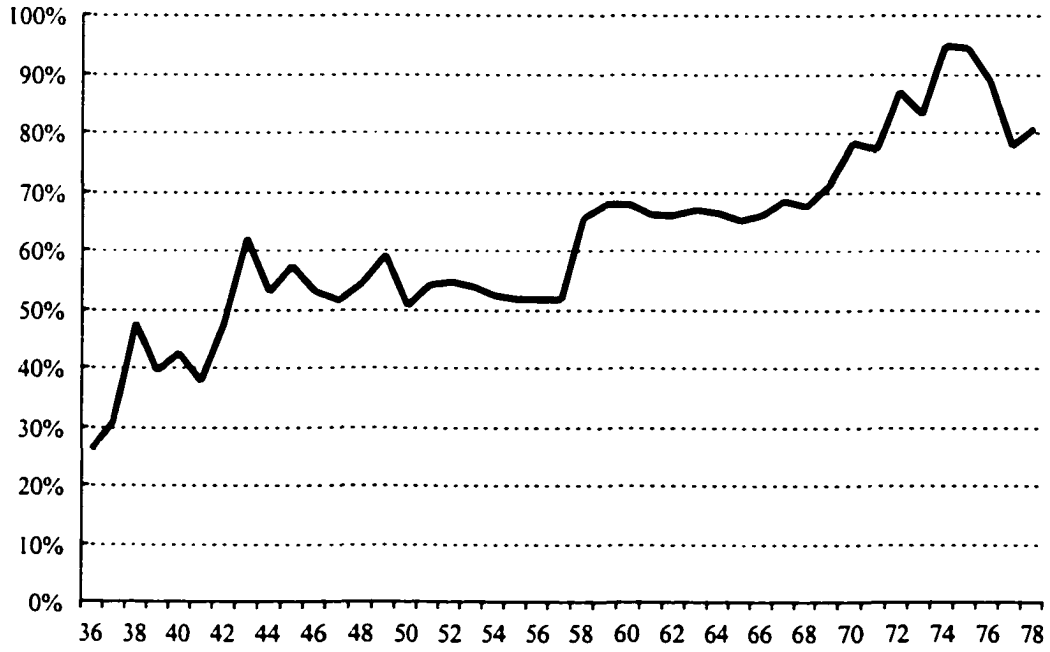
[6]However, it is interesting to note that foreign oil companies defending their contractual rights won an important legal battle in the Venezuelan Supreme Court. In 1936, the companies refused to pay newly imposed import tariffs; arguing that they were contractually exonerated and the Court's decision favor them

Figure 3.2

Government Take

(% of Oil Profits)

1936-1978



Source: Pdvsa and own calculations.

(Espinasa, 1995). Nevertheless, this was probably more an elegant way of government retraction than a

III. THE NEW CONCESSION SYSTEM OF THE HYDROCARBONS LAW OF 1943: HIGH INVESTMENT GROWTH AND THE ORIGINS OF EXPROPRIATION 1943-1958

After Gómez death in 1935, his successors General Eleazar López Contreras (1936-1941) and General Isaías Medina Angarita (1941-1945) slowly opened the political system, making it more inclusive. The opposition, led by the left (the Communist Party and the social-democratic party, Acción Democrática) began to play a significant role. Oil was a key element in their political discourse. They demanded reviewing all oil concessions signed under Gómez. They claimed that many of those concessions were illegally assigned. Moreover, they pushed for the collection of back taxes that the companies had not appropriately paid and to increase the future government share in oil profits. Partly responding to those pressures, General Medina's government, after extensive negotiations with the oil companies, promulgated a new oil law.

The Hydrocarbons Law of 1943 is a landmark in the history of Venezuela's oil institutional framework. The Venezuelan government took advantage of the Allies' desperate need for oil in World War II and the shadow of the Mexican nationalization, to renegotiate the terms of the oil concessions with the foreign companies. The U.S. government in this occasion pressured the companies (American and British) to settle with Venezuela. The objective of winning the War prevailed over safeguarding the property rights of the companies. The outcome of such negotiations was a law that increased the government's share in oil profits from about 40% to about 50% (see Figure

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symptom of judicial independence judging by all the evidence of judiciary control by the dictator.

3.3.2 and Appendix Table). It was known as the *fifty-fifty* deal to split oil profits between the state and the companies (Karl, 1997; Espinasa, 1995; Mommer, 1989; and Tugwell, 1975). The opposition leaders from Acción Democrática called the Law a sell-out to the foreign multinationals since it validated everything that had happened in the past (Hellinger, 2000).

The 1943 Law unified under a common legal framework all the particular contractual concession-deals that had been made in the past. It established -for the first time- the requirement that oil companies would be subject to a special rate of the Corporate Income Tax in top of any oil-specific taxes. The law creating the Income Tax had been approved a few months before. In addition, the Hydrocarbons Law established a 16.66% royalty tax over gross revenue (similar to the highest landlord royalty in Texas).

By recognizing the validity of this law, the oil companies were accepting the sovereign right of the Venezuelan state to charge taxes over the companies' profits and to change the income tax rate at any time in the future (Espinasa, 1995; Karl, 1997). The oil companies realized that this would be a powerful instrument for future expropriation, so they opposed it fiercely. They insisted that their fiscal obligations were contractually fixed.

In exchange for the full application of this tax increase, the 1943 Law gave the companies a long-term planning horizon and a transparent tax regime. It renovated all concessions for forty years, increasing the life of many concessions that were going to lapse soon, and provided for the renovation of concessions after twenty years. It also gave the companies legally sounder property rights over their concessions. This was an important compromise in favor of the companies since one of the objectives of

politicians, in the government and the opposition, was to act retroactively against the companies whose concessions were legally tainted.[7] The state also agreed to forgo indemnification from previous tax evasion. Moreover, in 1944 and 1945 the government of Medina approved substantial additional forty-year concessions (that covered more land than all the concessions given before) (Tugwell, 1975).

After the increase of 1943, taxes during the period 1944-1958 remained relatively stable. The state's share over total oil profits stayed on average just above the *50-50* split benchmark accorded in 1943 (see Figure 3.3.2). Both the companies and the Venezuelan state benefited from an increase in the international price of oil in the mid forties and most of the fifties (see Figure 3.9). The price hike, generated an increase in the companies' profits across the 1950's (before and after taxes given the stable distribution), see in Figure 3.3 the after-tax operating profits per-barrel. Similarly, oil fiscal revenues increased dramatically, 190% in real terms between 1950 and 1958 (see Figure 3.6).

Except for a brief three-year democratic interregnum (1945-1948), the oil companies confronted a military regime led by General Pérez Jiménez (1948-1958). Pérez Jiménez was clearly aligned with U.S. interests and benefited from a hemispheric preference given to the Venezuelan oil exported to the U.S.[8] In 1956 and 1957 the government auctioned significant new oil concessions from which his government received an advance of $675 million (about $ 4 billion in 1998 dollars) (Tugwell, 1975; Mommer, 1998). *Independent* oil companies, with no ties to the *seven sisters* obtained a

[7] After Gómez death the government initiated some legal actions against some companies asking for damage compensation for the illegal advantages they had obtained in their concession contracts. Some were settled out of court, but sometimes the Supreme Court of Venezuela ordered the companies to pay. For example in 1938 Mene Grande (Gulf) paid $10 million (Tugwell, 1975).

[8] The short-lived democratic government instituted a special surcharge tax to guarantee the 50/50 distribution agreed in 1943. If the companies' profit surpassed the government's share, a 50% tax would be levied to the difference (Tugwell, 1975). Pérez Jiménez maintained the application of this surcharge tax.

considerable portion of those concessions, debilitating the cartel's grip in Venezuela and over the world.

The 1943 bargain, originally provided the stability required for a very significant expansion of the oil sector as can be seen in Figure 3.4. Between 1944 and 1958 the annual growth rate of the net capital stock of the oil industry was on average 14.3 %.[9] Production grew at an average 19.5 % annual rate in the same period. Espinasa (1995, p. 12) summarizes the period: "clear and stable distributives rules and a long investment horizon, created the conditions for what can be called the golden age of oil activity in the country (1944-58), multiplying investment and production to respond to the demand expansion of the post-war period."

Nevertheless, the 1943 Oil Law also sowed the seeds for what later turned to be a dead-end confrontation between the state and the companies. Citing Karl (1997: 88) extensively: "The new law introduced a process of fiscal extraction through bargaining between the companies and the state. Once concessions were replaced by this new form of taxation, the granting of access to land that had proved so beneficial to both parties gradually was substituted for a zero-sum negotiating game over relative shares of profits from the industry...In the long run, it even created powerful incentives for state authorities to organize forms of cooperation among contending domestic social groups in order to enhance their bargaining power *vis-à-vis* the companies, who were especially vulnerable as nationalistic targets."

As it will become clear next, the 1943 Law represented only a truce between the companies and the Venezuelan state. This Law eliminated the most important domestic

legal restraint against expropriation, establishing sovereign taxation as opposed to contract provisions as the way to determine the state's share on profits. The one time hike in taxes that the government bargained was possible -at the time- due to the very special international juncture (WWII) in which it was obtained. But once the external enforcement mechanisms (reputational costs enforced by the oil cartel and U.S. intervention) became ineffective, expropriation became a very low-cost strategy for the government. After 1958, with the advent of democracy, the extraction of rents increased again at faster pace. This happened in a period of declining real oil prices generating an after-tax profit *squeeze* for the companies. The Venezuelan oil industry began a period of almost twenty years of decline.

[9] Compared with an average annual rate of 3.2% in the previous 15 years (1929-1943) and a negative rate of -2.1% in the following 15 years (1958- 1972). These figures are calculated using the capital stock in

IV. Revenue Expropriation, Disinvestment, and Nationalization (1958-1976)

In 1958, after the failed three-year experience in 1945-48 and after ten years of dictatorship, Venezuela's democracy was finally established. Acción Democrática, the social democratic party led by Rómulo Betancourt, regained its majority support and won the first elections. The precarious democratic regime immediately faced non-democratic challenges from the left (guerrillas) and the right (military coup attempts). Fiscal resources were needed to satisfy the many demands repressed by the previous regime and confront the enemies of the democratic regime.[10]

Unfortunately, in 1957, the price of oil started to decline and continued to do so (in real terms) for the following decade (see Figure 3.9). The decline in prices in a period of high demand growth is widely attributed in the literature to the oil cartel's loss of control over the oil market, partly as a result of the rise of the independent oil companies (Adelman, 1972; Yergin, 1992). To avoid the decline in fiscal expenditures brought about by the oil price decline, Venezuelan politicians decided once again to extract additional rents to the tempting target of the multinational oil companies.

In fact, the most dramatic early episode of confrontation occurred just before Betancourt took office. The civil-military junta, that governed the country after Pérez Jiménez was overthrown, *unilaterally* decreed an increase in oil income taxes. The

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constant bolivars of 1984. Source: Baptista (1997).

[10] Ames' (1987) study of fiscal politics in Latin America, found evidence suggesting that at the beginning of a regime there is a tendency to increase fiscal spending to gather support and increase survival probabilities.

government's share of operating profits rose from 51% to 65% (see Figure 3.3.2). The *Decreto Sanabria*, as it was known, produced an irate response from the foreign oil companies. For the first time an increase in oil taxes was completely unilateral (not even discussed with the companies). The president of Jersey Standard (later Exxon) was forced to leave the country after vehemently publicly voicing his anger over the implementation of the policy.[11] The decree represented a radical break with the "fifty-fifty" rule that had been bargained in 1943. This rule had provided stability for more than a decade and had been adopted -after Venezuela- by other oil exporting countries in the Middle East. The Venezuelan tax increased opened the door for increasing the government take in these countries. It clearly marked the beginning of a more confrontational form of extraction of rents that would continue up to nationalization in 1976 (Tugwell, 1975; Hellinger, 2000; Mommer, 1982). As can be seen in Figure 3.3.2, the government's share in oil profits stayed slightly above 65% until 1967 when it resumed its upward trend, escalating to a maximum of 94% in 1974 and 1975.

The period in study (1958-1976) covers the administrations of four presidents. Betancourt (1959-1964), Leoni (1964-1969), Caldera (1969-1974), and Pérez (1974-1979). All these presidents, with the exception of Caldera, were leaders of Acción Democrática the social democratic party that pushed forward a nationalistic oil policy. As will be shown all of them behaved as maximizers of short-term fiscal revenues rather than nationalistic ideologues. In particular Caldera, from the center-right Christian democrats, turned away from his more pro-business stance to behave like the others as a rent maximizer.

[11] Partly in retaliation against the decree the US government eliminated the preferences given to Venezuelan oil, putting Canada at a relative advantage (Hellinger, 2000).

Figure 3.3

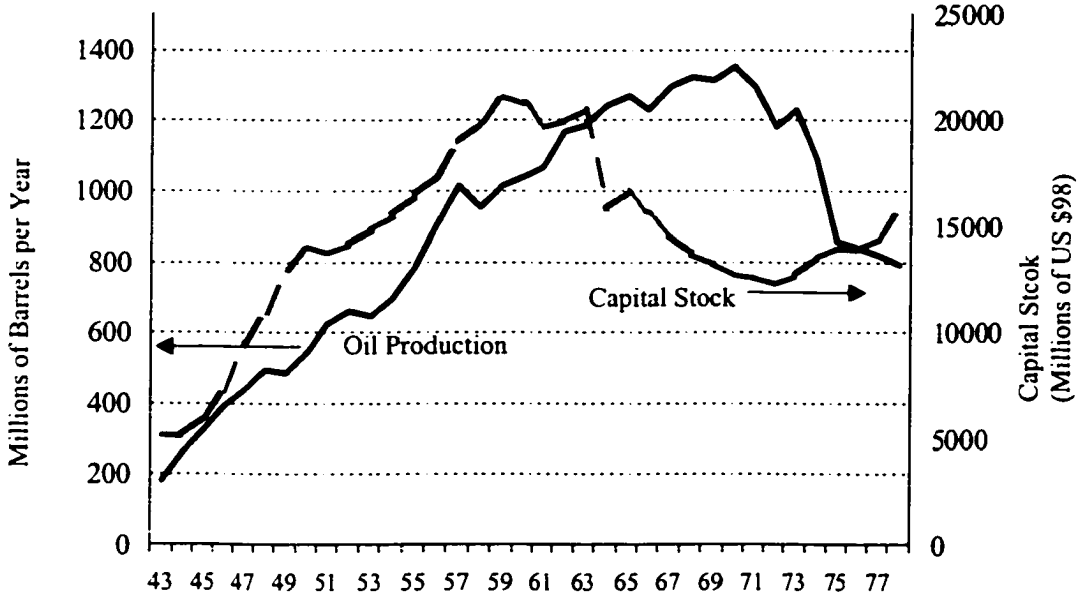
After-Tax Operating Profits per Oil Barrel

(1998 $)

Source: Baptista (1997) and own calculations.

Figure 3.4

Oil Production and Capital Stock: 1943-1978



Source: Baptista (1997), U.S. Labor Bureau and own calculations.

The Betancourt Administration (1959-1964)

Betancourt established a policy of *no more oil concessions*, not renewing the 1943 concessions in 1963 (a choice provided by the concession contracts as negotiated in 1943); as a result many concessions would contractually lapse in 1983. Oil policy was generally oriented towards defining alternative arrangements with the oil multinationals that gave more control to the state -including partial state ownership of the industry- in order to eventually substitute the old concession system. It is important to emphasize that most analysts agree that nationalization was not the key objective of Betancourt. Higher *state control* over the industry and higher participation in oil profits *with* participation of private capital appears to have been his aim (Tugwell, 1975; Urbaneja, 1992).

In the context of a price decline, the tax hike of 1957 implied a sharp decrease in after-tax profits as can be seen in Figure 3.3. For the first time the companies faced the prospect that -with the tax increases- investing in *exploration and development* of new reserves would not cover the opportunity costs of capital in a context of declining prices in the near future. In particular if compared with investing in Middle East oil (Adelman, 1972 and 1993). Venezuela had higher extraction costs than the Middle East. Still, due to transportation costs Venezuelan oil was competitive -before taxes- in terms of cost-per-barrel delivered to the U.S. market (Adelman, 1995; Tugwell, 1975). It is important to note that in the early 1960's the companies still had some significant operating profits (of above 1998 US$ 1 billion per year), but the perspective of ever-increasing taxes and declining oil prices offered gloom prospects for the future. After the tax hike of 1958-

1959, the oil companies realized that they would not be able to stop future government reneging. The combination of the increase in taxes, the perspective of future increases, and the uncertain horizon after most concessions lapsed in 1983, made the prospect of investing in development and exploration risky. The situation induced a radical change in the strategy of the oil companies. They decided to significantly reduce investments in exploration and development. Some of them used the liberated capital to increase investments in Canada and the Middle East (Tugwell, 1975). Ramón Espinasa and Bernard Mommer, the leading oil economists that have studied this issue in Venezuela, both coincide in attributing the decline in investment primarily to the changes in the fiscal and regulatory framework of the oil industry and secondarily to the decline in prices (Espinasa and Mommer, 1992; Espinasa, 1995).

As can be seen in Figures 4 and 5, after 1958 there was a very significant decline in the oil capital stock (see also Figure 3.3.2 in Chapter 4). Figure 3.4, shows the net capital stock (in constant dollars of 1998) and oil production.[12] [13] Figure 3.5, shows the % rate of growth of the net capital stock (based on the net capital stock in constant bolivars of 1984, see footnote bellow). Not only the net capital stock did not continue its trajectory of high growth, it sharply reversed its upward trend to begin a dramatic decline. After its peak in 1959 the net capital stock declined systematically for almost twenty years until the downward tendency was finally sharply reverted in 1977-78, after nationalization (see Figure 3.5). In the period, 1959-1976 the capital stock declined 68%

[12] Transforming the series of net capital stock that are provided in bolivars to constant dollars has the disadvantage of reflecting sudden exchange rate movements, which do not affect the value of most of the capital stock. Constant dollars are used in Figure 3.3.1, 4, and 8 for the sake of easy comparability with all the money figures presented in this dissertation which are in dollars of 1998. In contrast to present the rate of change of capital stock, the more appropriate figure in constant bolivars is used. In any case the figures are very similar.

[13] The net capital stock is the capital stock minus charges for depreciation and obsolescence.

(in constant bolivar terms). The average annual growth rate of the capital stock in that period was –2.7% and the growth rate fell as low as –5.5% in 1967. These negative growth rates reflect, not only that new investments did not compensate for depreciation, but also that the oil companies moved out of the country part of the exploration and development equipment that was not sunk, and reduced maintenance to a minimum. In the 1960's the number of oilrig perforations declined to about a third of the 1950's average (Rodriguez, 1974). The New York Times in October 1960 reported: "new investments have been reduced to the minimum required for maintenance. Around 3,000 technical employees from the US and other countries have abandoned the country in the last two years."[14]

In contrast, as can also be seen in Figure 3.4, the production of oil continued its upward trend throughout the 1960's. From 1958, when Venezuela produced 2.6 million barrels per-day (MMBD), until production reached its peak in 1970 (3.8 MBD), oil production rose 44% (1.2 MMBD). This large increase in production, in a period of declining capital investment, was possible due to the more intensive exploitation of oil fields. *As it is typical in high-sunk-cost industries, the effects of investment decline on production had a significant time lag.* It took twelve years of under-investment to face its effects on production. After 1970, production capacity declined sharply and by 1975, the year before nationalization, production reached 2.4 MBD, a decline of 1.4 MBD from 1970.

During the administration of Betancourt, the companies in a situation of increased market competition started giving discounts bellow the "marker" oil price. Since that policy of discounts implied smaller declared profits (and oil tax revenues), the

[14] Quoted by Tugwell, 1975: p. 106. Venezuelan edition. Monte Avila Editores, 1975.

government claimed that the policy was a tax evasion strategy.[15] As a penalty it imposed monetary sanctions to its use. This issue continued being a source of conflict until in 1966, as will be discussed next.

The Leoni Administration (1964-1969)

Under President Raul Leoni's administration the Venezuelan government negotiated a deal with the companies according to which oil taxes were to be calculated not using sell prices but *fiscal reference prices* (FRP). Under the agreement, the FRP were to be negotiated with the companies and set for five-year periods (1967-1971) slightly above the usual effective prices. In practice, this was equivalent to a small additional excise tax (a tax on the price, similar to the royalty).

The government used the threat of increasing oil taxes again as a negotiating tool. The negotiated agreement with the Leoni administration came after a partially successful government attempt to pass a legislative package increasing the income tax rates applicable to the oil industry and the rest of the economy. Among other things, the government package aimed to collect reparations for the oil taxes not collected in the past as a result of the price discounts given by the oil companies. The bill proposal also contemplated a special additional tax on capital assets (only applicable to the oil industry). The administration was anxious to finance its recurrent fiscal deficit.

The companies organized a common front with the domestic private sector to oppose the income tax increase. The government then attempted to split the opposition

[15] A significant proportion of the oil exported was sold to subsidiaries, thus government officials had good reasons to feel suspicious. According to Adelman (1995) in reality the companies *were* giving the discounts

and negotiated separately with the oil companies. Simultaneously, the government threatened domestic capitalists, hinting that if an agreement with the oil companies could not be reached, domestic taxes would have to be increased even further. In the end, even though the administration did not obtain all that it had proposed, it was quite successful. In addition to the *fiscal reference price* agreement, the income tax was raised 3 percentage points. The companies agreed to pay Bs.700 million (around 1998 $780 million) in reparations to settle the "discount" controversy (much less than was originally asked by the government). In exchange, the companies were given immunity against all tax reparations in the past, the oil capital asset tax was not approved, and the companies obtained what they thought was a guaranteed 5-year period of tax stability given by the FRP agreement (Tugwell, 1975; Urbaneja, 1992; Espinasa, 1995; Hellinger, 2000). As a result of the tax "agreement," the government share over operating profits increased from 65.9% in 1966 to 68.5% in 1967 and 71% in 1969 (see Figure 3.3.2).

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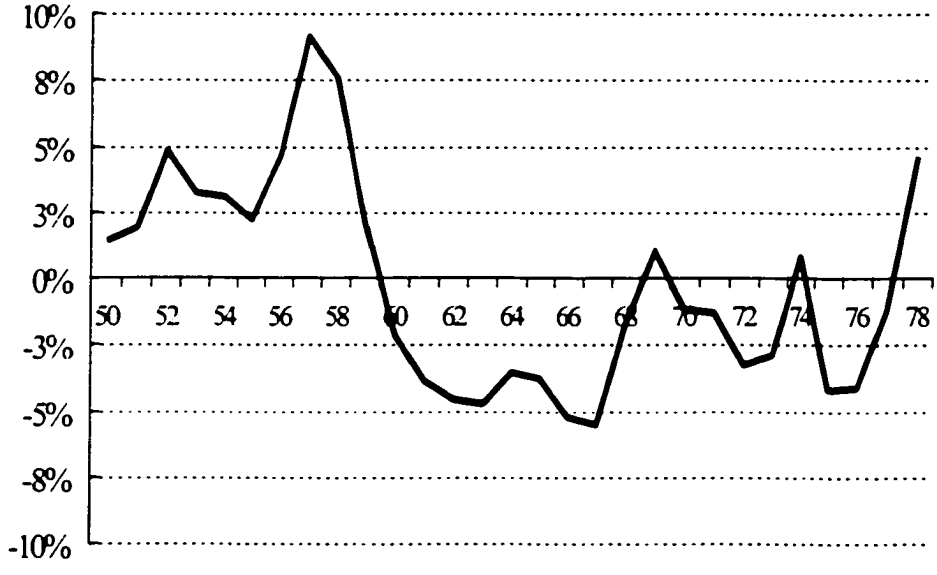
and it was not merely a tax evasion strategy.

Figure 3.5

Rate of Growth of Capital Stock (%)



Source: Baptista (1997). Rate of growth of net capital stock in constant bolivars of 1984.[16]

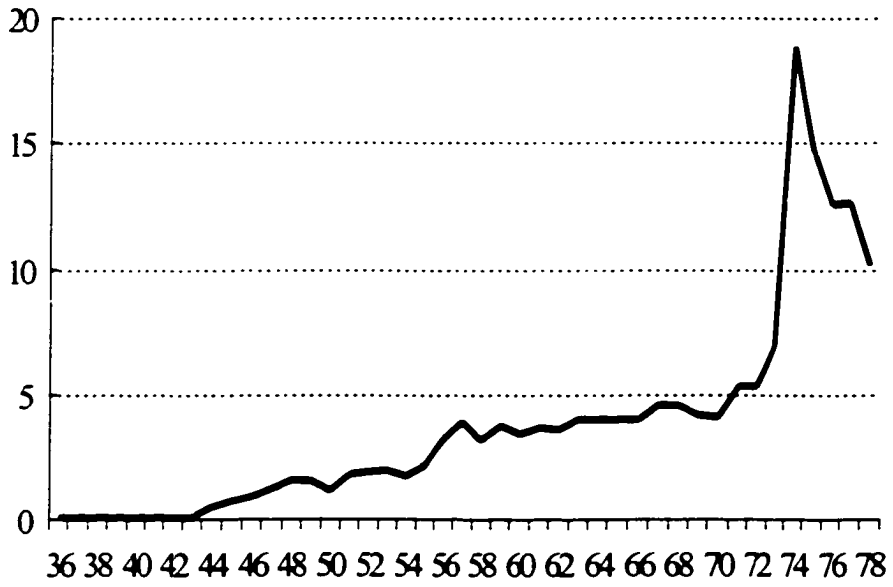
[16]The *rate of growth* of the capital stock throughout this work is calculated using the values of capital stock in constant bolivars. In contrast, the *level* of capital stock is provided in constant dollars of 1998, as are all the other money-denominated figures to make them comparable and easy to analyze. In the case of the rate of growth the constant bolivars figure is preferred to avoid the confusing effects of sudden changes in the exchange rate Bs/$ on the previously accumulated stock of capital.

Figure 3.6

Oil Fiscal Revenues

1936-1978

Billions of 1998 US $



Source: Pdvsa and own calculations.

The Caldera Administration (1969-1974)

The first administration of the center-right opposition party, COPEI, began in 1969 under the leadership of President Rafael Caldera. In the beginning, Caldera's approach was to provide a variety of incentives and new investment opportunities for the oil companies to increase investment and production. As it turned out, this strategy did not provide the short-term fiscal resources that his government expected.

Caldera's attempt to induce new investment was centered on an innovative attempt at creating joint ventures between the small state-owned company, CVP, and some foreign multinationals. The *operational service contracts*, as were denominated these joint ventures, were a way around the problem of providing foreign companies with secure (although limited) property rights over new investments, without reestablishing the old concession system. Concessions were not ideologically feasible anymore (would not get passed in Congress) and at that point did not guarantee any rights to investors. The foreign oil company would operate as a *service contractor* signing a private contract with CVP. Risks were shared and the state fiscal participation was contractually enforceable (in Venezuelan courts). The opposition in Congress was reluctant to approve the contracts arguing that they were "hidden" concessions. The politicized debate in Congress made the companies worry that the commitment to respect these contracts was not credible. In the end after many negotiations a few contracts were signed in 1971 and the signing bonuses totaled $21 million (1998 $ 84 milion). Nevertheless, the contracts

were not very successful and ended with nationalization four years later (Tugwell, 1975; Mommer, 1998).

Applying pressure to the companies to increase production was also disappointing since production was close to full capacity and could only be increased by a meager 3%. The government search of revenues to close the fiscal deficit then evolved into the old policy of maximizing short-term rents from the oil companies. In 1970, Congress approved a law allowing the executive to unilaterally set the *fiscal reference price.* In practice this meant that each year the executive could single-handedly increase taxes by up to 14% of total oil revenues (i.e. equivalent to increasing the royalty from 16% to 30%). Initially Caldera's administration did not favor this move because it would hinder its attempt to create the new joint ventures with the oil companies. This enlarged executive discretionality in increasing taxes would destroy credible commitment to the new agreements. However, once the opposition majority approved it into law, the executive used it immediately to increase the government's share in oil profits from 71% to 78.1% (see Figure 3.3.2). In a very short time, the government received around $200 million in additional fiscal revenues (about 1998$ 850 million).

In 1971 production capacity began to decline, as a result of 15 years of disinvestment, and the companies started openly to contemplate the different alternatives to opt out of Venezuela in the near future. Many concessions would end in 1983 and the alternative of joint ventures with the state-owned company did not seem to credibly protect property rights in the future (as the failure of Caldera's joint-ventures suggested). Knowing that, the government decided to take preemptive actions to limit the oil companies' policy of taking all non-essential movable equipment out of the country,

Congress passed the *Law of Reversion*. A complete account of all the companies' assets was made and they were forced to deposit 10% of the total value as a *surety* (a hostage) to guarantee the reversion of those assets to the state when the concessions ran out. This decision escalated the conflict between the companies and the government. They further decreased production and the executive established high monetary sanctions against production cuts. At this point Caldera abandoned all attempts to look for ways to induce the companies to invest and became openly confrontational. The government decided to compensate the decline in total oil revenues due to the 9% fall in production (see Figure 3.4) with an increase in the government's fiscal take, which reached 87% in 1972.

All governments in the period 1958-75 had a common aim: to increase their extraction of short-term oil rents. The ideology of oil nationalism promoted by Pérez Alfonzo (AD's oil ideologue and co-founder of OPEC), emphasizing the conservation of scarce oil reserves for future generations, domestic industrialization of oil, and cooperation with other oil exporters, was relegated to a secondary place whenever it conflicted with the goal of maximizing short-term fiscal revenues. The nationalistic rhetoric of politicians many times did not correspond to their actions. In the words of Tugwell (1975: 141): "Caldera's government...as Leoni's, was less interested in conservation, defense of international prices, or international accords, than in actually securing the continuous increase of its oil fiscal revenues."[17]

In 1973, the Arab-Israeli war generated a dramatic increase in oil prices. In January the average export price of Venezuelan oil was $3 by December it had risen to more than $10 (see Figure 3.9 for oil price in 1998$). The government received a

[17] Similarly, Adelman (1995) analysis of Middle East oil exporters concludes that all their actions in this period pointed towards maximizing short-term oil revenues.

windfall of more than $500 million (1998$ 1.6 billion). Oil fiscal revenues increased 30% in real terms. In the next decade the price of oil climbed above $30 and the Venezuelan government received more revenues from oil than in all its previous history. In that context, the dramatic decline in oil production (see Figure 3.4) produced by the sharp decline in investment for 15 years did hardly matter. Venezuelan politicians paid a relatively small cost for the decline they had induced in the oil industry.[18] The costs of compensating the oil multinationals for nationalization, the costs of rebuilding the obsolete and declining oil industry, and the costs of exploration for new reserves to increase the dwindling oil reserves, were all easily paid in a decade of dramatic abundance of fiscal resources. Without the increase in oil prices and fiscal revenues (see Figure 3.6 and 9) these expenditures would have consumed a significant portion of the budget. The opportunity costs for the country were –nevertheless- enormous. Before the OPEC quotas entered into effect in 1982, Venezuelan oil production had declined more than 40% from its peak in 1970. The most profitable business in the world managed to decline to almost half in the decade with the highest prices in history.

Nationalization

In 1974 power returned to Acción Democrática under the leadership of President Pérez. Although nationalization was not part of his campaign platform it quickly became the consensus solution to the dead-end in which the state/oil industry relationship had fell

[18] By 1985 Venezuelan oil production was less than half what it had been in 1970. When the oil price collapsed in the 1980's

into. In the rest of the developing world a wave of nationalizations was at its peak, so it was a *focal point* policy.

Nationalization in fact was a relatively conflict-less policy decision. The companies focused more on shaping the nature of the relationship they would have with the Venezuelan oil industry after nationalization and secondarily on the amount of compensation they would receive, rather than on challenging the nationalization decision itself. They were nevertheless relatively well compensated with payments of $1.02 billion dollars of that time (1998$ 2.6 billion) and with generous oil distribution contracts (that represented in effect an additional under-the-table compensation) for the first few years (Martz, 1977).[19] The Nationalization Law was passed in 1975 to take effect in January 1976. A state oil monopoly company, Petróleos de Venezuela, was created as a holding of all the previous private companies, including two small companies owned by domestic capitalists.[20]

Espinasa (1995, p. 14) provides a good summary of the 1958-1975 period: "the multinationals saw the breaking of the framework in which investments prospered until 1958, based on tax stability...the doors to an overflowed rentist pressure were open, and the time horizon of concessions diminished... oil companies stopped investing after 1958...a process that inevitably conduced to nationalization." With nationalization the conflicts between the state and the oil industry were supposed to be finally solved, but as will be briefly discussed in Chapter 4, that was not the case. The tendency to expropriate sunken assets continued "inside" the state.

[19] The accounting value of the capital stock at the time was around $12 billion but most concessions would legally have expired in six years with all capital reverting to the government free of charge.

V. THE COSTS AND BENEFITS OF EXPROPRIATION

Expropriation occurred because the external enforcement mechanisms that deterred it from happening ceased to be effective, without a compensating development in domestic institutional enforcement. In terms of the theoretical framework developed in Chapter 2 five key points should be stressed to explain the expropriation of the oil industry in the period 1958-76:

1) The existence of very low short-term *direct* costs of expropriation. A fact reflected in the significant delay of thirteen years between the time at which investment started its sharp decline (in 1958) and the time when production capacity began to fall (in 1971). The potential fiscal cost, given by the drop in oil fiscal revenues as result of the production decline, did not start to materialize until 1971 (and then good fortune provided for higher oil prices in 1973). Direct costs are structurally low in the oil industry, thus they do not explain the timing of expropriation, but help to understand why the oil industry was the target of expropriation once enforcement ceased to be a deterrent. There were some indirect political costs in the short term, such as a decline in total employment in the oil industry (see Figure 3.7 at the end), but the very capital-intensive oil industry was (relatively) less significant as

[20] Former multinational oil executives interviewed argue that nationalization was almost promoted by the oil multinationals. Their goal was to obtain lucrative distribution agreements that they thought would be

employer than as export generator, fiscal or GDP contributor (employing less than 5% of the workforce at its peak, compared to 80-90% of exports, 20%-30% of GDP, and 70%-80% of fiscal revenues).

2) The high political benefits of expropriation in the 1960's. These benefits are proportional to the amount of appropriable quasi-rents, i.e. the large capital stock in sunken assets that had been accumulated by that time (see Figures 1 and 4). The extremely high rate of capital investment, in the period 1943-1958, generated a tempting stock of sunken assets in the ensuing period. A capital stock valued at more than $20 billion (in 1998$) when the budget was around $3.6 billion. In contrast in the 1920's the benefits of expropriation were significantly less, given the low level of capital stock accumulated at that time.

3) The systematic decline in institutional costs, starting in 1943 with the approval of the law that granted the state sovereign rights over oil taxation. Since then, the government in general and the executive in particular acquired ever-increasing control and discretion over oil profits. Even though, the establishment of democracy and division of powers could have provided for some checks on opportunistic expropriation by the executive, it did not. Politicians in Congress competed with the executive for the initiative to increase the government take on oil revenues. The lack of an independent judiciary

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more stable.

and of constitutional or legal restraints to rent-extraction made expropriation a relatively costless strategy.

4) The fall in reputational costs and external enforcement, as a result of the decline of the international oil cartel and with it the elimination of its threat credible threat of a boycott over operation, distribution, and investment. The cartel declined in part due to the granting of oil concessions to *independent* oil companies (Yergin, 1992). The Herfindahl Index of firm concentration in world oil production declined from 0.2 in 1950 (equivalent to 5 *effective* firms sharing the market) to 0.05 (equivalent to 20 firms) in 1975 (Vernon, 1977). In Venezuela the dominance of Shell and Exxon also declined, from 92% of production in 1937 to around 70% in the 1960's (Tugwell, 1975). Another source of decline in reputational costs was the increasing availability of foreign credit to finance state-owned companies.

5) The decline in foreign power external enforcement and the rise of the sovereign autonomy of the Venezuelan state also reduced the costs of expropriation and made it difficult to commit not to expropriate new investment. As described in the theoretical section of this paper, the international regime that developed after WWII, increased national sovereignty and limited the use of diplomacy to enforce foreign investment contracts (Lipson, 1985).

VI. CONCLUDING COMMENTS

Although conclusions need to be qualified by the intrinsic limitations of a single country study, the analysis of foreign oil investment in Venezuela provides evidence to support the hypothesis that high sunk-cost industries are likely targets of revenue expropriation. Without the existence of enforcement mechanisms that impose significant costs to opportunistic reneging by the government, expropriation would be the likely outcome of investment in sunken assets.

In the fist half of the twentieth century, high foreign investment growth was possible as long as external enforcement was available. In the case of Venezuelan oil, external enforcement was provided by a combination of the threat of U.S. retaliation (to violations of international law) and the threat of a boycott by the international oil cartel. Once external enforcement declined in the 1950's the temptation to expropriate the large stock of sunken assets was difficult to resist. Domestic institutional changes only reinforced the incentives to expropriate by concentrating discretionary control rights over oil revenues in the executive. The legislature and the judiciary were never independent veto points limiting expropriation.

The direct costs of expropriation were deferred in time. In Venezuela it took more than thirteen years for costs to surface in the form of a decline in production capacity. In developing countries with recurrent political instability and political shocks, it is unlikely that political costs deferred for more than a decade are going to have a significant impact in current policies (since they would be heavily discounted by politicians).

The preliminary study of the evidence from other Latin American countries seems to support the arguments in this dissertation. In all other significant oil producers in the region, Argentina, Bolivia, Colombia, Ecuador, Mexico, and Peru, the oil industry was expropriated and nationalized. In all, there were periods of revenue expropriation. In Argentina and Bolivia the complete cycle of foreign investment, expropriation, and nationalization has been repeated more than one time. In all countries state-owned enterprises suffered from serious financial difficulties to increase production. In general, the circumstances of expropriation tend to support the theoretical framework presented here (Philip 1982 and 1994; Mommer, 1989; Yergin, 1992). More detailed analysis awaits future research.

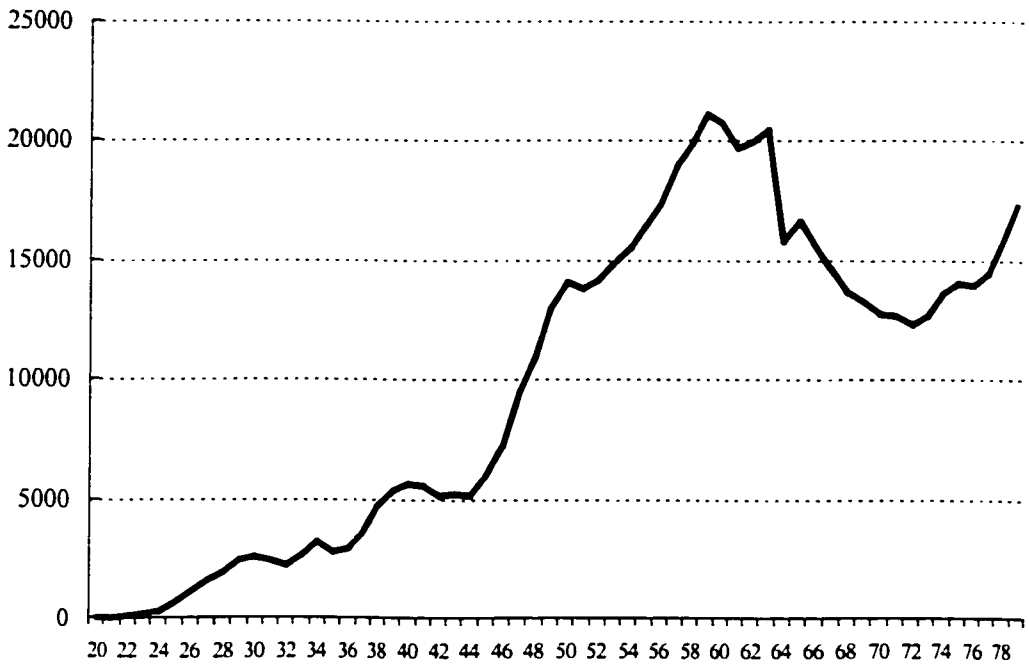
Figure 3.7

Source: Baptista (1997).

Figure 3.8

Capital Stock

Millions 1998 $

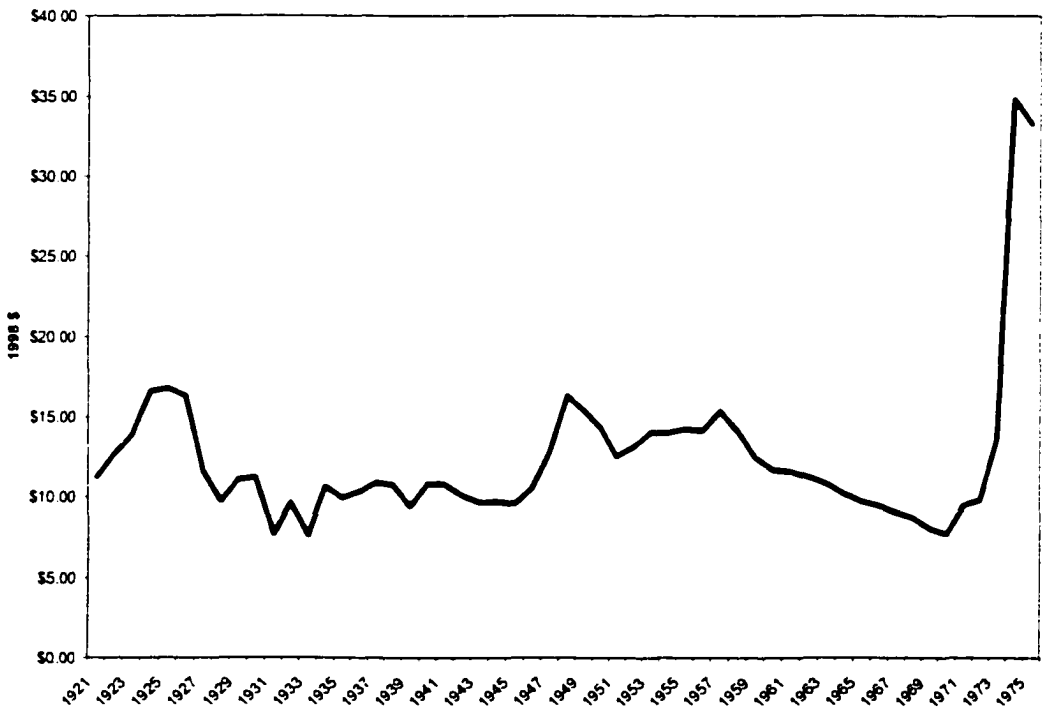


Source: Baptista (1997), Bureau of Labor Statistics, and own calculations.

Figure 3.9

Price of Oil (1998 $/ barrel)

1920-1975



Source: Baptista (1997), Bureau of Labor Statistics, and own calculations.

APPENDIX. Table 3.1 Data Period 1940-1980.

	Oil Production (million barrels per year)	Capital Stock (millions of US$89)	Rate of Growth of Capital Stock (%)*	Oil Fiscal Revenues (millions of US $89)
1940	183.83	5,585.26	1.20%	0.088
1941	226.78	5,542.88	1.27%	0.107
1942	148.15	5,100.03	-2.18%	0.089
1943	179.38	5,204.25	0.25%	0.074
1944	257.04	5,115.14	5.60%	0.512
1945	323.40	5,958.19	12.31%	0.724
1946	388.47	7,265.37	17 36%	0.925
1947	434.90	9,440.54	22.05%	1.258
1948	490.00	10,883.35	20.15%	1.613
1949	482.00	12,952.31	12.88%	1.577
1950	546.00	14,049.81	1.41%	1.142
1951	622.00	13,743.72	1.87%	1.795
1952	660.00	14,104.40	4.81%	1.894
1953	644.00	14,849.40	3.19%	2.020
1954	691.00	15,467.57	3.09%	1.712
1955	787.00	16,439.80	2.21%	2.186
1956	899.00	17,360.91	4.62%	3.237
1957	1,014.00	18,961.17	9.15%	3.924
1958	951.00	19,889.93	7.56%	3.147
1959	1,011.00	21,099.89	1.99%	3.745
1960	1,041.00	20,729.01	-2.21%	3.426
1961	1,065.00	19,669.89	-3.84%	3.668
1962	1,167.00	19,965.31	-4.63%	3.598
1963	1,185.00	20,437.94	-4.75%	3.985
1964	1,241.00	15,766.30	-3.61%	4.021
1965	1,267.00	16,587.32	-3.76%	3.987
1966	1,230.00	15,586.19	-5.23%	4.022
1967	1,292.00	14,566.13	-5.52%	4.552
1968	1,319.00	13,649.17	-1.77%	4.544
1969	1,311.00	13,243.10	1.02%	4.125
1970	1,353.00	12,693.54	-1.17%	4.104
1971	1,295.00	12,608.33	-1.34%	5.286
1972	1,178.00	12,309.83	-3.26%	5.346
1973	1,228.00	12,652.32	-2.89%	6.879
1974	1,086.00	13,547.45	0.77%	18.833
1975	856.00	13,961.82	-4.24%	14.737
1976	839.00	13,890.70	-4.17%	12.550
1977	816.00	14,427.39	-1.18%	12.637
1978	790.00	15,743.00	4.59%	10.142
1979	860.00	17,268.81	8.47%	12.032
1980	793.00	19,928.64	12.81%	14.806

*Source: Baptista (1997); PDVSA; and own calculations. *Rate of growth of capital stock in constant Bs.*

CHAPTER 4

REOPENING THE OIL INDUSTRY TO FOREIGN INVESTMENT: GOVERNMENT COMMITMENT USING EXTERNAL HOSTAGES

I. INTRODUCTION

In the past two decades there has been a trend in Latin America to open to private investment sectors that used to be reserved to state-owned enterprises. Although success in attracting private investors has varied among countries and sectors, in many cases significant private investments have been made. In sectors that require substantial capital disbursement, foreign investors have typically been the main participants. The successful attraction of external investment is puzzling in sectors in which -in the recent past- foreign investors were expropriated, often after significant conflict with the state.

Why are foreign companies investing large sums in sectors that have historically been so vulnerable to government opportunism? How did states attract capital? Under such circumstances, can states secure "good deals" or do they have to give away large rents to attract investors?

This chapter analyzes the case of successful attraction of foreign investment in the Venezuelan oil industry during the last decade. It argues that such success can be significantly attributed to an institutional framework that offered credible commitment to foreign investors and creditors, reducing their perceived risk of expropriation, by providing them with external *hostages*. Offshore assets and revenues were offered as a guarantee against government opportunistic reneging. As a result, a significant encroachment on investor's rights could be very costly for the government even in the short term. It could significantly hinder the government's capacity to obtain oil revenues and its sources of foreign credit.

As discussed in Chapter 2, the current literature on foreign investment in infrastructure has emphasized the need for the existence of domestic institutions that restrain the government from opportunistically reneging from the original agreements with foreign investors. In the absence of such institutions, investors can only be attracted by offering them "sweet deals;" i.e. arrangements in which they obtain large short-term rents to quickly recover their "risky" investments. As a result, the lack of a credible regulatory environment induces a combination of sub-optimal levels of investment and/or state ownership (Noll, 2000; Spiller and Savedoff, 1998; Levy and Spiller, 1996; Henisz, 1999).

In Chapter 3, the dynamic leading to revenue expropriation and nationalization in Venezuela was analyzed. Fifteen years after nationalization, in the early 1990's, the government decided to re-open the oil sector to private investment. In the middle of recurrent fiscal and political crises, it was difficult for the state to finance the expansion of the oil sector. Oil investment competed with more politically urgent fiscal expenditures. Moreover, the alternative of financing the oil expansion with foreign loans was expensive due to the oil company's relatively bad credit rating[1]. Foreign investment became the government's preferred way to finance the enormous expansion potential. To the surprise of many analysts, foreign investors were willing to participate in the new investment opportunities offered by Venezuela. Foreign firms committed to very large investments in exploration and extraction of oil. According to industry analysts, the Venezuelan state obtained advantageous deals, in terms of its participation in future oil profits. In fact, the government collected a significant cash advance ($2.5 billion) when it

[1] The risk of government expropriation of revenues was the main cause of the company's bad financial ratings (see Section III). The creation of a hostage to back debt repayment has recently allowed the state-owned company to obtain better credit ratings (see also Chapter 5).

auctioned private participation in oil production. How could this happen in a country with a clear pattern of expropriation of oil revenues in times of fiscal need, with a weak judicial branch, and more generally with an apparent lack of domestic restraints to governmental opportunism?

In Venezuela the executive still concentrates significant legal authority to increase its share in oil profits. Politicians can unilaterally expropriate the profits of the oil sector, through a variety of mechanisms. The Judicial branch is widely considered as very politicized and not independent (Kornblith, 1998; Vial et al., 2002). In general, domestic institutions offer very little protection against government encroachment over property rights as will be argued further in Section V. The literature would suggest that under such circumstances, either investment would not materialize or investors would have to be granted large short-term rents (Levy and Spiller, 1996; Spiller and Savedoff, 1998; Basañes et al. 1999). Nevertheless, as it will be shown in Section V, neither was the case in Venezuela.

This chapter argues that the answer to the puzzle is in the details of the institutional arrangements used to open the oil sector in Venezuela. These arrangements limit the sovereign powers of the state by outsourcing third party enforcement with the use of a hostage. The state oil company PDVSA contractually guarantees that the original bargain with the state will not be significantly modified in the future. If the government does not abide by the deal, PDVSA is contractually required to compensate the foreign investors for revenue expropriation. In particular, PDVSA's assets and revenues in the U.S. (and Europe) could serve as the last resort *hostage* against expropriation by the Venezuelan state. Venezuela's unreliable judicial system is contractually bypassed, using "final and irrevocable" international arbitration in the U.S.

to resolve any contractual disputes. Foreign courts could serve as the ultimate third party enforcer. As a result, the high costs of opportunistic behavior would deter the government from reneging on the deal.

Consider the case of U.S. investors in the Venezuelan oil sector. Because PDVSA owns significant assets and revenues in American territory, U.S. courts can ultimately be used to enforce their contracts with PDVSA. American courts are a last resort option to enforce the arbitral ruling in a dispute between PDVSA and the U.S. investor. International arbitration would rule based on contractual provisions specifying that certain actions by the Venezuelan government allow investors to claim compensation from PDVSA. For example, suppose the Venezuelan government decides to increase its taxes on oil revenues exceeding what was contractually established, in that case PDVSA is required to cover all the additional taxes. In case PDVSA does not respect the contracts, does not abide by the arbitral decision and Venezuelan courts do not enforce the arbitral decision, American courts can enforce it with the assets and revenues of PDVSA in U.S. territory.

In sum, this chapter shows how the Venezuelan state, despite its discretionary executive and non-independent judiciary, was able to commit not to expropriate sunken costs in the oil sector. It was able to do so, by creating institutional mechanisms that provide guarantees against expropriation. These mechanisms allow foreign investors to claim PDVSA's foreign resources in the event the Venezuelan government attempts to expropriate their investments in Venezuela. As a result contract reneging is very costly for the government, commitment can be credible, and the perception of expropriation risk declines.

In contrast, consider the previous institutional arrangement under which revenue expropriation occurred. Under the pre-nationalization framework (1943-1975) the state allocated directly concessions to foreign companies for a limited period of time. Those concessions were subject to changes any in sovereign tax laws.[2] In fact, the laws were changed to systematically increase the state's take on oil profits. Moreover, the "Fiscal Reference Price Law" gave discretion to the executive to apply a surcharge tax of between 0%-14% of gross oil revenue[3]. Besides the tax-laws, there were (and still are) an array of mechanisms, which the state used (and sometimes still uses) to de-facto extract rents from the oil industry, among then: 1) Fixation of the domestic price of oil products, bellow opportunity cost. 2) Limits to the amount of oil that can be extracted. 3) Forced refining of crude in Venezuelan territory (which has increased the sunk costs). 4) Significant legal discretion of the Executive in setting the oil royalties (1%-16.66% of gross revenue until the Law of 2002 which increases the royalties between 16.66% and 30%).

The chapter is organized as follows. Section II, presents some additional theoretical elements describing the *hostage* mechanism and complementing the general theoretical framework presented in Chapter 2. Section III, briefly discusses the period of state monopoly, after nationalization (1976-1991), as an antecedent to help understand the origins of the "reopening" of the oil sector to private investment. It shows how the commitment problem did not disappear with nationalization, but moved "inside" the state, as a confrontation between the executive and PDVSA. Such tension was one of the factors leading to re-open the sector to private investment. Section IV, describes in some

[2] Before 1943 the state's take was contractually established and could not be changed by sovereign law. In this sense the new institutional arrangement is similar to that pre-1943 concession system (Karl, 1997; Mommer, 1998).
[3] This law ceased to apply in 1996 after it was changed in 1994 (Mommer, 1998).

detail the characteristics of the new institutional framework and discusses how it provides credible commitment. Section V, provides some evidence of the success of the new institutional framework in attracting new investments. Section, VI, adds some concluding comments. Chapter 5, which follows, discusses the use of offshore receivables as a hostage to guarantee credit finance for the Heavy Oil Upgrade Association Agreements.

II. The Hostage Mechanism: Some Additional Theoretical Elements

This section provides a basic theoretical analysis of the hostage mechanism. It complements the theory presented in Chapter 2, showing how even in a situation with very low costs of expropriation and weak domestic enforcement, the sovereign is able to commit by providing an alternative commitment device.

As discussed in the theory chapter, commitment to up-hold investment deals is only credible if the total (discounted) costs of expropriation are higher than the total benefits. If that is not the case, investors can reasonably expect to be reneged on, i.e. commitment is not credible. What are the consequences of lack of credible commitment not to expropriate sunk-assets? Since investors know that political authorities would have ex-post incentives to opportunistically renege on the investment deal, they would ex-ante take actions to evade, mitigate or obtain compensation (risk premium) for the risk of expropriation.

As argued in Chapter 2, one of the consequences of lack of commitment is that investors are reluctant to enter into any bargain that is acceptable to the government (and the public). As a result, either no investment or a sub-optimal level of investment will be deployed. Alternatively, investors might demand in compensation a high return (risk premium). In particular, they would ask for front-loaded short-term returns to recuperate costs very quickly.[4] Thus, by providing a credible commitment and reducing the risks of

[4] For example, Levy and Spiller (1996), argue that telephone charges in Argentina were set at very high level to attract investors to the privatization of the phone company in a context of low institutional credibility ("sweet deal").

private investment in sunken assets, the government can potentially obtain, *ex-ante*, more favorable deals and can attract more investment.

Investors can also try to mitigate political risks using insurance and other risk mitigation strategies. Insurance against the most open forms of expropriation (nationalization) has developed significantly in the past few decades. Still most forms of subtle revenue expropriation are still uninsurable due to the difficulty of defining the occurrence of an insured event and the potential for moral hazard and adverse selection (Moran, 1998; Wells, 1999).

Other investor strategies for risk mitigation have included devising alternative mechanisms to increase other indirect costs of expropriation for politicians. For example, Haber, Razo and Maurer (forthcoming) show how, in Mexico, investors integrated with powerful political domestic groups to obtain selective protection of their property rights. Other examples of these alternative mechanisms include: using domestic credit (or off shore resources of the domestic elite) to finance the project (Uzbekistan), promoting widespread distribution of equity shares among the domestic population (Bolivia, Eastern Europe), and including politically well-connected partners in the project (Indonesia) (Haber et al. forthcoming; Monaldi, 1997; Moran, 1999). In any case risk mitigation strategies, as commitment mechanisms, can be costly. Its benefits in terms of risk reduction have to be weighted by its costs.

As discussed before, in the last two decades there have been significant trends towards re-establishing *international* enforcement mechanisms. The signature of many bilateral and multilateral investment treaties and the use of private international arbitration of investment contracts have been important elements of that trend. Unfortunately, the sole use of international law has not proven to be a very effective

mechanism of deterrence against *revenue expropriation* (Moran, 1998; Waelde, 1999). The problem is that most treaty and arbitration remedies are in the hands of the reneging national government and its politicized domestic courts, making enforcement difficult and costly (Waelde, 1999; Van der Walt, 1999). Additionally, the legal process of arbitration and adjudication can take a long time and revenue expropriation can be considerable even during a short interlude. Moreover, the "events" of revenue expropriation are difficult to identify since they can be taken as cases of legitimate sovereign regulation.

In contrast, the literature tends to concur in asserting that the international law regime is a relatively good deterrent against confiscation or nationalization without reasonable compensation. Nationalization or confiscation "events" are easier to determine. International and domestic laws, bilateral treaties, and legal precedent in the last two decades, offer significant tools for obtaining compensation in case these cases (Moran, 1998; Waelde, 1999).

In order to mitigate the commitment problem in the absence of traditional external enforcement, a wide variety of institutional arrangements have been recently developed with mixed success. In those arrangements external enforcement typically complements – rather than substitutes- the role of domestic institutions and reputational mechanisms. Contractual limits to taxation increases, the use of external resources as guarantees, and the use of multilateral agencies as enforcers, have been some of the ingredients of these new kinds of external enforcement mechanisms. These new governance structures seem to have been partly responsible for the significant attraction of foreign direct investment in Latin America during the last decade (Moran, 1998, Waelde, 1999; Van der Walt, 1999).

The hostage mechanism presented here is one integrated structure, designed to reduce sovereign risk and provide credible commitment, incorporating many of the institutional innovations recently developed (e.g. international arbitration) in a way that makes enforcement effective. The sovereign provides a hostage to investors, making it very costly to renege in the future. The mechanism offers efficient ways to identify and punish revenue expropriation. It appears to be a very successful example of credible commitment. It has generalizable elements that have been applied in similar situations and have the potential of further application.

The context in which the hostage mechanism -analyzed here- is most useful is one with low direct and institutional costs of expropriation. For example, a domestic institutional framework in which there is concentration of power in an executive with sovereign authority over its territory. There are no significant independent checks and balances to the executive power. The judiciary is not independent from the executive. The legal structure offers few restraints to governmental expropriation of the high-sunken cost industry. The executive can unilaterally set its take over investors' profits (in the particular sector) at his discretion. As explained in Chapter 2, the investment literature predicts that such a situation would generate either a sub-optimal level of investment in the sector or the need to give short-term rents to investors.

Moreover, as shown in Chapter 3, in the case of the Venezuelan oil industry, a discretionary institutional framework created the conditions for an ever-increasing expropriation of revenues from foreign investors. Revenue expropriation and uncertainty over property rights induced a significant decline in investment and eventually prompted a sharp decline in production. Fifteen years later a new commitment mechanism had to be devised in order to attract investors.

The Use of Hostages to Support Exchange

The practice of providing hostages (ex-ante) as a commitment guarantee against ex-post reneging on a deal, has had a variety of historical applications, as pointed out by Schelling (1960). A *hostage* can be defined in very general terms as anything of value to the hostage-giver, which the hostage-taker threatens to make valueless for the giver (e.g. by destroying it), in case the hostage-giver fails to perform as accorded (Furubotn and Richter (2000), p.425). It can be distinguished from the similar concept of collateral, by emphasizing that losing the hostage is much costlier for the giver than it is beneficial for the taker, whereas a collateral is equally valued by both (Furubotn and Richter, 2000). In any case, the use of both concepts to the provision of credible commitment has a key common element: for the giver of the guarantee (hostage or collateral) the benefits of opportunistic reneging would be smaller than the *costs associated* with losing the hostage.

Oliver Williamson has been the leading advocate of the use of the hostage concept in the economic analysis of contracts (Williamson, 1983; 1985; and 1996).[5] In his classic paper: "Credible Commitments: Using Hostages to Support Exchange" (1983, AER, p. 519), he argued that: "not only are the economic equivalent of hostages widely used to effect credible commitments, but failure to recognize the economic purposes served by hostages has been responsible for repeated policy error." Williamson provides an example of the use of hostages in the case of a franchise system. Franchisees may be

[5] The use of hostages as a commitment device is closely associated with a similar mechanism, what Williamson (1983, p. 531) refers as "reciprocal exchange." Reciprocal exchange occurs when both parties to an agreement reciprocally expose themselves by investing in assets specialized to the transaction. That way neither has an incentive to renege.

required to "make investments in transaction-specific capital (the hostage) as a way by which to safeguard the franchise system against quality shading" (1983, p. 529). If the franchisee tries to free ride on the reputation of the franchise, e.g. saving costs by providing a lower quality service, it risks losing the capital invested in assets specific to the franchise. To attain credible commitment, the penalty for losing the capital should be higher than the benefits of cheating[6].

The hostage mechanism analyzed in this chapter is slightly different from Williamson's classical formulation in that it involves a more complex governance structure, including the existence of third party enforcers (U.S. Courts, international arbitration, trustees). Williamson's formulation focuses on private contracting relationships in which the hostage-giver commits to respect the deal by providing the hostage-taker a way to punish the former in case of reneging, without the existence of third-party enforcement. The contracting parties prefer using a hostage to the potentially costlier alternative of using a judicial process of adjudication.

In the mechanism discussed here the sovereign commits by providing investors with a hostage outside of its sovereign jurisdiction, but the investors cannot seize such hostage unless a credible third-party enforcer verifies the existence of contract reneging. The mechanism avoids using the unreliable domestic judiciary, which is not independent from the sovereign. Since the sovereign is in the unique position of unilaterally altering the conditions of the deal (e.g. by changing the regulation), it is particularly important to distinguish reneging from other sovereign actions that do not constitute acts of expropriation. Having a third party enforcer increases transaction costs but minimizes

[6] Williamson bases his analysis of the franchise system on a paper by Klein and Leffer (1980). Furubotn and Richter (2000, p. 226) provide another example: brand related advertising expenditures as a hostage in the hands of a firm's customers. These expenditures serve as a guarantee of quality since otherwise the "sunk" investment in advertising would be lost.

potential incentive-compatibility problems. In particular the presence of a third-party enforcer minimizes the problem of limiting the hostage-taker incentives to execute the hostage even when there is no reneging by the hostage-giver. A relevant problem given that in this case the hostage is valuable for the hostage-taker.

The Stylized Hostage Mechanism: Theory and the Venezuelan Case

This chapter analyzes a hostage mechanism that can be used by sovereigns to create credible commitment with investors in high-sunken-cost industries, when the direct and indirect costs of expropriation are not enough to deter government reneging and domestic third party enforcement is unavailable. The governance mechanism is based on the existence of a contractual intermediary owned by the sovereign, with limited sovereign immunity, that provides an international guarantee (a hostage), allowing the use of third party international enforcers.

The stylized elements of the hostage mechanism are:

1) Existence of valuable offshore assets and/or stable generation of offshore revenues (the hostage) owned by the sovereign contracting intermediary (SCI). The SCI does not have sovereign immunity (or explicitly waives it). In particular the hostage has to be located in either the country of origin of the foreign investors or in a country whose judiciary is trusted by them[7].

[7] For the government that is providing the hostage the credibility of the enforcer is also crucial in designing the mechanism.

2) Existence of contracts between the foreign investor and the sovereign contracting intermediary, establishing the maximum level of government participation on the projects' revenues.[8]

3) Existence of contractual provisions establishing that the sovereign's contracting party shall cover any government extraction of revenues above that maximum level.

4) Provisions establishing that the foreign investors can pursue the enforcement of the contract in foreign courts, in particular, in the courts with jurisdiction over the offshore assets and revenues which serve as the hostage. International arbitration or other private third parties can be part of the mechanism, often making it faster, less expensive, and more effective.

5) Third party verification of reneging and seizure of the hostage generates high short-term economic costs for the sovereign. These penalty costs are above the value of the hostage for the investors seizing it.

The resources in foreign jurisdictions (assets and revenues) should *not* be offshore only for the purpose of creating a hostage. If that were the case, the costs of establishing the hostage mechanism would probably outweigh its benefits (in terms of credible commitment and sovereign risk reduction). The opportunity costs of generating the

[8] In cases in which the most significant expropriation risk comes from price regulation (e.g. electric utilities), the relevant point would be to contractually set the price (equivalently with other regulations).

offshore revenues or having the assets offshore (where they can be used as hostage), as opposed to generating/having them in the commercially best alternative, have to be assessed as part of the costs of the mechanism.[9]

As will be further explained in Section III, in the empirical case evaluated in this chapter it is clear that the assets and revenues of the SCI (i.e. PDVSA) are located in the U.S. because it was -and continues to be- profitable to have them there (without considering the benefits of the hostage mechanism). The investments that PDVSA owns in the U.S. are strategic and profitable. Moreover, they were made a decade earlier, under different circumstances and for economic and political economy reasons unrelated to the hostage mechanism. Similarly, the U.S. was -and will continue to be- the largest and most profitable market for Venezuelan oil. Although the investments were not made for the purpose of creating a hostage, the Venezuelan government did make a conscious decision to structure the contracts with foreign investors in a way that made PDVSA and in particular its foreign assets and revenues a hostage to guarantee the investment deals.

The hostage mechanism provides contractual commitment to maintain the rules of the deal. For example, suppose any state authority uses its powers to expropriate revenues from a foreign investor. In such a case, the sovereign's contracting-intermediary (SCI, e.g. PDVSA) would have to cover those expenses. If the SCI does not comply, the foreign investor can take its grievance to international arbitration (e.g. in New York City). If the sovereign judiciary does not immediately enforce the arbitral decision, U.S. Courts can provide third party enforcement for the deal using the SCI's foreign assets and

[9] Nevertheless, there could be additional reasons why a sovereign could find profitable exchanging investment in her country for an offshore investment that is made only for the purpose of being a hostage. One rationale is risk diversification (I am grateful to Tridib Sharma for this observation). Other rationales might be obtaining technology or know-how through foreign direct investment that cannot be obtained by obtaining credit finance.

revenues to execute the compensation. The sovereign government has limited possibilities of interfering with the enforcement mechanism. A report of the Moody's rating agency on the oil foreign investment joint venture projects captures this key component of the hostage mechanism: "PDVSA's significant investments in overseas assets, principally CITGO, would not be subject to sovereign immunity and could be seized in the event of default (by PDVSA) or undermining the legal structure."[10]

Notice that the *contractually* defined limit to the state's sovereign expropriation of revenues can pertain not only to discretionary "abuses" of power by domestic authorities. It can also apply to sovereign changes in the legislation that are done according to the constitutional *rule of law*, if those changes are not permitted by the contract. For example, in the empirical case presented here, there are provisions in the contracts according to which PDVSA has to compensate the investor in case a special tax targeted to the oil sector (even when approved by the legislature as a law) taxes revenues in excess of what is *contractually* established. The contractual guarantee given by this mechanism, therefore, could limit significantly the state's sovereign powers and therefore poses important normative questions in terms of domestic democratic accountability.

It is important to emphasize that the hostage mechanism serves to significantly reduce the risk of government revenue expropriation by dramatically increasing the short-term costs of reneging for the government. It does not, however, eliminate the possibility of revenue expropriation (or for that matter nationalization); it just makes it very costly. In addition, if the government –despite the costs involved- continues systematically expropriating revenues from the foreign-owned projects, the mechanism would offer a significant source of compensation for foreign investors. Nevertheless, in some

[10] Moody's report March 1999.

situations, obtaining such compensation would be time consuming and costly for investors. Therefore, it is not mainly the prospect of compensation what makes the hostage mechanism work, but the prospect that expropriation would not occur.

An Alternative Hostage to Guarantee Credit Financing: Debt backed by Offshore Revenues

Offshore revenues can serve not only as a guarantee for foreign direct investors, but they also can provide protection to creditors who finance the foreign sponsored oil projects. In the case of Venezuelan oil reopening a separate but complementary hostage structure was put in place to provide this protection to debt-holders. The debt-structure provides creditors with an effective device for seizing the offshore revenues generated by the oil projects before they are returned to the sovereign jurisdiction. If the government attempts to expropriate revenues or interferes with the mechanism, a preventive withholding of additional offshore revenues would be immediately *triggered.* Thus, hampering this debt-structure would be very costly for the sovereign in the short-run. It would also adversely affect the sovereign's and PDVSA's credit opportunities. The next chapter is devoted to the theoretical and empirical analysis of this debt-backed-by-a-hostage structure and how it serves to provide credible commitment.

A Simple Game

As shown in the Appendix to this chapter, a very simple game can portray the government's strategic decision to create the conditions for a hostage. The game is a very

simple extension of the game in Chapter 2. The government knows that investment would not be attracted if it has sovereign discretion to costlessly expropriate. Any deal it promises in those circumstances is not credible. Foreign investors would only invest if they know that, ex-post, expropriation would be too costly for the government. The existence of a hostage does precisely that. If the government reneges the investor can claim the hostage inflicting high costs to the government. Therefore the sovereign does not expropriate in case there is a hostage.

Expecting that there would be no reneging if a hostage is provided ex-ante, the foreign companies invest (otherwise they would not). Finally, since the government prefers obtaining investment and taxes to not attracting any investment, its optimal choice is to commit with the hostage. In equilibrium (see Appendix) foreign investment enters the country and the government does not expropriate, thus the hostage is never claimed. Claiming the hostage is the credible threat off-the-equilibrium-path that sustains the equilibrium outcome.

III. Some Antecedents to the Oil Reopening: State Monopoly Ownership and Commitment

This section briefly discusses the relationship between the state and the oil industry after nationalization. It is important to emphasize that PDVSA's history has not been one best characterized by "creeping" expropriation. Compared to other state-owned oil companies that have had little financial autonomy and recurring financial difficulties, such as Petróleos Mexicanos, PetroEcuador, or YPF (Argentina), the financial and institutional autonomy given to PDVSA has allowed it to sustain -in some periods- a significant level of investment (Palma, 1985; Philip, 1994). The reasons for this relative autonomy are beyond the scope of this paper.[11] The purpose of this short section is merely to illustrate that, despite PDVSA's unusual autonomy, the tendency to have episodes of revenue expropriation, particularly under fiscal or foreign exchanges crises, did not cease with nationalization.

When the state owned monopoly, Petróleos de Venezuela, S.A. (PDVSA), was created, the fiscal dependence on oil revenues had deepened with the oil boom. In the calculus of politicians oil investments had to be evaluated against *competing* uses in the national budget. When oil revenues increased they were rapidly spent and committed to a variety of projects and social programs. Whenever oil revenues failed to increase, fiscal difficulties quickly erupted (Karl, 1997). In periods of fiscal scarcity, it is particularly tempting to extract short-term rents from PDVSA, leaving the company with less than

[11] Monaldi (2000) argues that in 1976 with nationalization politicians created a structure that gave independence to PDVSA, "tying their hands" against revenue expropriation. At that point commitment was very critical due to the significant decline in oil investment that had occurred in the previous 15 years. That autonomy has significantly eroded since, especially under the Presidency of Mr. Chávez..

optimal resources for investment (or for repayment of debts). In fact, such extraction of fiscal resources has been systematically done through a variety of mechanisms, including: forcing advances on future oil taxes, an excessive extraction of dividends from profits (in the last 5 years), or forcing PDVSA to make public investments (that otherwise would be made by the government).

Oil rents have also been dissipated in other indirectly politically beneficial ways. Domestic gasoline prices have been systematically subsidized (as have been other oil products). For example, in 1993 the domestic market represented 21% of the total volume of production (the other 79% were exports) and PDVSA's pre-tax accounting losses from sales in the internal market were $424 million, the equivalent of around 10% of pre-tax profits and about 40% of after-tax profits that year.[12] In 1996 an IMF-backed austerity program included significant increases in domestic gasoline prices, but prices have systematically remained well below opportunity costs. Rigobon (1992) presents evidence showing that the gasoline subsidy is significantly regressive in terms of its effects on income distribution, but political calculations appear to have prevailed. The Ministry of Mines estimated that in the twenty-year period (1976-1996) the accumulated loss of revenue of selling oil products in the regulated domestic market (as opposed to exporting) had amounted to $42 billion in 1997 US$ (El Universal, 8/1/97).

Nationalization coincided with the period of oil boom in the seventies. The state reduced the effective tax rate to around 80% (from around 90%) to allow the company to implement badly needed investments to maintain production capacity and increase oil reserves (which were at a historical low point). That occurred in the middle of a boom in which two governments received more oil revenues than all the previous governments

[12] PDVSA Annual Report, 1993.

combined. Under such increasing fiscal abundance a tax reduction was not very costly. It only meant a smaller, but still, large increase in the budget each year. Moreover, in the eighties (1982-1987) OPEC quotas required cutbacks in production (see Figure 4.2), so large investments were not required in that period.

Even in periods of abundance the oil industry suffered from political interference. In 1983 -in the middle of a capital flight crisis- the government arbitrarily forced PDVSA to exchange into domestic currency the $5 billion foreign investment fund that the company had accumulated over the years. The Central Bank wanted those resources to have reserves to defend the domestic currency. Consequently as a result of the large devaluation that occurred, PDVSA lost a very significant portion of those resources. This particular episode created very significant tensions between the management of the company and the politicians.[13]

In the 80's and early 90's PDVSA made very large investments in refineries and distribution channels in the US and Europe in what was labeled the *internationalization* strategy. There was a clear political economy reason for the management to do this. These investments were typically done in exchange for oil, rather than cash, which permitted management to divert profits to investment before they had to be handed to the government. The management believed that the government would have expropriated any cash available. Also, as a result of the OPEC quotas additional domestic investment in oil extraction did not make much sense.[14] There were also powerful economic reasons to

[13] According to Mommer (1998), as a result of this episode PDVSA's management started "hiding" profits from the government pushing the "internationalization" strategy.

[14] See Mommer (1998) and Monaldi (1997 and 2000). Alberto Quiros Corradi, former president of Shell of Venezuela and later president of the two largest subsidiaries of PDVSA (Maraven and Lagoven), supports the notion that PDVSA's management is hesitant to have cash available for the fear of revenue expropriation. He argues that some investments might have been pushed by management's preference of investment over tax payments (interview with the author, 2001).

vertically integrate towards the downstream sector. PDVSA's private competitors were all vertically integrated companies and that structure appears to be efficient. Moreover, most of PDVSA's oil reserves are in heavy oil, which requires significant investments in special refineries in the U.S. (Baena, 1997). The potential hold-up problem arising from asset specificity made vertical integration an obvious solution.

By 1990, after the decline of OPEC in the late eighties, the idea of increasing oil production and following a strategy of competitive long-run prices had gained support in the country. Venezuela (after significant reserve additions in the 80's) had accumulated more than 80 years of oil reserves at the prevalent rate of extraction. In 1991, PDVSA proposed an ambitious ten-year expansion plan. The government did not want a reduction in fiscal resources in a period of high political instability (there were two coup attempts in 1992). It was then decided that the largest portion of the expansion of the oil sector was to be done, not using PDVSA's financial resources, but by reopening oil extraction to foreign direct investment. Surprisingly, the opening of the oil sector was decided by an administration presided by returning President Caldera, who was very prominent in the expropriation process. Foreign companies in association with PDVSA would carry out most of the new investments required for the expansion plan. Notice that the foreign investment policy had zero cost for the government in terms of present fiscal revenue (Mommer, 1998; Monaldi, 2001). In fact as will be shown in next section, the government obtained advances in future oil revenues by auctioning oil investment opportunities.

PDVSA's management knew that the government would not leave the company a sufficiently large cash flow to pursue all highly profitable investments on its own. Nevertheless, to understand the motives behind the reopening of the oil industry, two

remaining questions should be answered. Why did PDVSA give away to foreign competitors very profitable projects? Why did it not use credit finance? Part of the answer has to do with the lack of government commitment to leave the company with enough cash flow to invest. When the price of oil falls, the government's fiscal revenues also decline. To compensate for the loss of revenue, the government would like to increase its share in oil profits to try to mitigate the resulting fiscal loss. In such case PDVSA faces a double negative impact, a decline in profits and an increase in taxes (similar to what happened to the multinationals in the 1960's).

As a result of the perception of risk, credit financing was an expensive alternative, because financial markets perceived the potential risk of revenue expropriation. PDVSA's bond emissions at the time (e.g. in 1993) were given relatively bad ratings (even bellow investment grade).[15] The low ratings, according to the rating agencies, reflect the sovereign risk of potentially having a poor after-tax cash flow in case of a government fiscal crisis. Only later bond emissions with solid international guarantees (hostage) received a significantly better rating (see Chapter 5).[16]

PDVSA officials have recognized that they pushed for the opening of the oil sector after realizing that they would not have enough financial resources to finance the expansion program with their own cash flow. To be sure, there were other policy reasons for the opening, such as the need for technology transfer or creating a more diverse base of support for the oil industry, but none as important as the lack of financial resources (Mommer, 1998; Giusti, 1999).

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[15] For PDVSA's debt ratings see Chapter 5.

[16] This debt mechanism began in 1997 with the emission of $1.8 billion in notes "guaranteed" by the receivables from PDVSA's exports to the US. This debt received a rating of A3 by Moody's. In comparision PDVSA's debt received a rating of B2, seven notches bellow the guaranteed debt. This provides further evidence of the perception of expropriation risk.

As Bailey (1995) put it: "PDVSA could easily finance these (new investment) needs from internal capital generation and its borrowing power, were it not for the bad news: government policy ... the government would greatly enhance its comparative advantage internationally by raising domestic gasoline prices to a level three to four times what they are now, abandoning OPEC, and reducing its punitive taxation of PDVSA (now at 82% of profits, which covers about 70% of federal government expenses)".

From the point of view of the government, opening to foreign investment provided an excellent alternative to taking away resources from competing uses in the national budget. However: why did the foreign companies accept to enter into a new bargain after a history of expropriation? Particularly since investors knew that the general incentives to expropriate oil revenues remained in place, as illustrated by the over-extraction of revenues from PDVSA. How did the Venezuelan state manage to attract investors back? In next section, the institutional structure that made foreign investment possible is analyzed.

IV. Reopening the Oil Sector to Foreign Investment: The New Institutional Framework (1992- 2002)

In 1991-92 the process of reopening ("la apertura") the oil sector to foreign investment timidly began with the proposal to offer to foreign oil companies a few marginal oil fields for operation (operational service agreements, OSA, first round). It was not until 1995-98, under the tenure of the leading advocate of this strategy PDVSA's CEO Luis Giusti that the process was given a definite impulse and the contracts that support the majority of the projects were designed and signed.

The institutional framework used to re-open the Venezuelan oil sector to foreign investment is fragmented and complex. In part it was done in such a way because the government wanted to implement it without paying the political costs inherent in making significant changes to major laws. The administrations that designed and implemented the new investment regime, those of presidents Pérez (1989-93), Velazquez (1993-94), and specially Caldera (1994-99) did not have a majority in Congress, thus they tried to maximize what could be done without going through a difficult legislative process. PDVSA and the government stretched to its limits the "narrow space" given to private investment by article 5 of the Oil Nationalization Law. Article 5 only allows foreign participation in oil production in the case of joint ventures "controlled" by PDVSA with Congress approval. In order to attract foreign investors, the government and PDVSA argued for and obtained some favorable interpretations of the Law by the Supreme Court (Mommer, 1998).

The framework implemented was not based on legislation, as had been the case during the concession system that prevailed since the 1943 Oil Law (which regulated all private investment before nationalization). Instead a contractual framework was put into place, in which PDVSA -and not the state- is the legal entity that signs up the deals with investors. The contractual nature of the relationship significantly changed the terms of the commitment problem. It is now a private agreement between two multinational companies (one of which is the state-owned contracting party or sovereign contracting intermediary, SCI). If the sovereign government changes the rules that govern the investment in a way that impacts negatively the foreign investor and which is not valid under the contract, PDVSA would be the entity contractually required to compensate the investor. In case PDVSA does not abide by the agreement, the foreign investor can request for international arbitration alleging breach of contract. PDVSA resigns to any immunity that it might had as a state-owned enterprise.[17] If Venezuelan courts are not willing to enforce an arbitration decision, foreign courts can enforce it.

The new contractual framework uses PDVSA as a *shield* to protect investors against reneging by state authorities. PDVSA contractually guarantees that the original bargain with the state will not be significantly modified in the future. If the government does not abide by the deal, PDVSA is contractually required to compensate the foreign investors for most revenue expropriation.

In this structure, PDVSA's management provides the first line of defense against expropriation. PDVSA's financial and operational autonomy would make it costly for

[17] In all the new contracts PDVSA explicitly waives its sovereign immunity. The clear waiving of immunity is important since any business owned by the Venezuelan government is considered an agency of the Venezuelan state and entitled to immunity from US Courts according to the US Foreign Immunities Act, unless such immunity is explicitly waived. The immunity granted by that Law would have precluded attachment of PDVSA's assets to enforce a judgment. (Moody's PDVSA report April, 1999).

future governments to force the company to violate its contracts. PDVSA's management would be interested in honoring the contracts. Otherwise, the company would risk suffering huge reputational costs. In contrast to the sovereign Venezuelan state, PDVSA is a multinational company, governed by contract law, with investments, joint ventures and long-term contracts in foreign countries. The institutional costs of expropriation arising from the resistance to contract reneging from PDVSA's autonomous management will not be explored further here. Its evaluation would require an analysis of the sources of PDVSA's autonomy that is beyond the scope of this work.

More importantly, since PDVSA is the main source of fiscal revenue and foreign currency of the state, any action that directly impacts its short-term commercial activities, revenues, and creditworthiness could have an immediate costly impact on the government. In addition, the fact that the government's best source of foreign lending is PDV Finance, an affiliate of PDVSA whose access to credit could be ruined by expropriation attempts by the government, could be an important deterrent.[18]

The government of Venezuela naturally continues to have the right to change legislation, rules, and regulations, affecting the oil sector, and it cannot be legally challenged for doing so according to its sovereign laws. However, the investor gets around the issue of sovereignty by instead taking legal action against PDVSA, a multinational company with assets and business all over the world. Around 20% of PDVSA's consolidated assets are outside of Venezuela. Foreign holdings are valued at around $ 7-8 billion, and exports to the U.S. represent $10-16 billion.[19]

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[18] See more discussion on this point in the next chapter (5).

[19] Investors can also claim this hostage in case the government uses illegal means (i.e. not in accordance with the state's own laws) to expropriate revenues.

Consider some key differences between the oil concession system that regulated foreign investor participation before nationalization (1943-1976) and the new contractual arrangements (1992-): 1) All changes in sovereign tax-laws applied to the old oil concessions. In contrast, the new contracts fix the state's share in oil profits through a contract between two companies (PDVSA and a foreign company). These contracts provide a *shield* (or buffer) that isolates investors from adverse changes in sovereign taxation laws. 2) Under the concession system, if foreign investors had a dispute against the Venezuelan government, they were forced to take legal action in Venezuelan courts. Under the contractual framework they can use "final and irrevocable" international arbitration in the city of New York, using the rules of the International Chamber of Commerce. 3) Under the concession system foreign investors could not claim government's assets in foreign countries as legal compensation. The few assets of the Venezuelan government that were located offshore were protected by the principles of state sovereignty. In addition, in the pre-nationalization period, 1920-1976, the revenues from oil exported were owned by the foreign multinationals, so seizing them would not have deterred revenue expropriation.[20] Therefore, the conditions for establishing a hostage were not in place in the pre-nationalization period. In contrast in the current situation foreign courts can be ultimately used to enforce contracts. The fact that there are assets and resources (receivables from exports) in the foreign court's jurisdiction (outside of Venezuela's sovereign territory) makes the enforcement mechanism highly credible.

PDVSA holds over $7 billion dollars worth of foreign assets in refineries and distribution channels, primarily in the US but also in Europe[21]. PDVSA wholly owns CITGO, one of the largest gasoline distributors in the U.S., and six U.S. refineries. In

[20] The companies could threat to stop generating revenues as discussed in Chapter 3.
[21] Estimated using PDVSA's published balances of various years.

1999 it was the third largest refiner of oil in the U.S.[22]. It also has refineries and distribution channels in Germany, in association with Veba Oel, in the Scandinavian countries in associations with Nynas Petroleum, and in islands of the Caribbean.

Furthermore, the revenue generated by PDVSA's oil exports to the US market ($10-16 billion per year) can also be used as a potential hostage. Most of the oil exported is committed to long-term supply contracts (with foreign companies and PDVSA's U.S. subsidiaries). Therefore, receivables from such contracts can also be used as a guarantee against reneging by PDVSA. It would be very costly for PDVSA to abandon all supply contracts to the US, given that it is its most important market.

In fact, PDVSA has been recently using the offshore dollar-denominated receivables from those supply contracts as a guarantee to obtain loans in better conditions (lower interest rates and longer maturity). This same mechanism, as will be shown in Chapter 5, has been used as project finance to fund some of the new joint ventures with foreign investors.[23] That type of guarantee was not available to the Venezuelan state before nationalization when oil was exported by multinationals.

In what follows the different types of contracts used in the oil opening are explored in further detail. There have been three basic types: 1) Operational Service Agreements (OSA), which started in 1991, with the first round of auctions, and continued with a second round in 1992, and a third in 1997; 2) Heavy Crude Upgrading Association Agreements (AA), to pursue four large heavy oil projects (1992-1997); and 3) Risk

[22] Only behind Exxon Mobil and BP Amoco (Moody's, 1999). Today with they merger Chevron Texaco has a larger US refining capacity than PDVSA.

[23] In the past decade, companies that export a commodity have increasingly used this type of guarantee to obtain foreign debt in favorable conditions. The exports generate offshore dollar-denominated receivables under contract with a foreign buyer. The cash generated from the future receivables is captured offshore and is used to service the debt (Jordan, 1998).

Exploration Agreements (RE), in eight areas, which were auctioned in 1996 for the right to explore and extract oil.

Operational Service Agreements (OSA)

OSA contracts were the first type of agreement to be put into place. Originally, OSA were supposed to cover only a few marginal oil fields that required significant new investments to sustain production and which at the prevalent tax rates paid by PDVSA would not have been profitable -for the company- to maintain in operation. Under OSA foreign companies make the investments necessary to extract oil from existing fields and run their operation, in return they are paid by PDVSA a per-barrel *fee* according to a pre-arranged formula. Under OSA contracts, the expectation were that oil fields that were producing a mere 70,000 BD in 1991 could end up producing between 0.5 million and 1 million by 2007 (Mommer, 1998). Table 4.1, describes the three auctioning rounds for OSA fields. As can be seen, the third round was by far the most important in terms of the amount of reserves allocated. Table 4.2 (at the end of the chapter), shows how OSA projects have attracted a significant amount of investment. In 2001, OSA investments amounted to US$1.4 billion.

PDVSA pays the operator a per-barrel fee. The fee's formula is complex (and it has varied with each auction round), but it is based on a few key parameters with the following characteristics: 1) All parameters are in US dollars to eliminate any exchange-rate risk for the investor. 2) The fee adjusts with the market price of oil. An international price index calculated from a basket of marker crudes is used for that purpose. 2) A cost parameter (operational fee), which was the bidding parameter in the first two rounds (in

the third round the bidding parameter was a present payment in a closed bid auction). This parameter is indexed by the energy component of the US Consumer Price Index to adjust for inflation.[24] The formulas have been structured to provide incentives to increase investment and production (Office of the Chief Economist, PDVSA, 1998a and 1998b).

Table 4.1

Operational Service Agreements (OSA) Oil Field Auction Rounds

1991-1997

Round	# oil fields offered	# oil fields allocated	Proven oil reserves allocated (million barrels)
First (1991)	9	3	175
Second (1992)	14	13	1,550
Third (1997)	20	18	20,510

Source: PDVSA.

Legally the private companies are not "selling" the oil to PDVSA, they are only *operational service contractors* that receive a *service-fee.* The reasons for this peculiar interpretation are twofold: 1) A creative interpretation of the legislation allowed to obtain foreign investment without changing any law (in particular the Nationalization Law). If the companies produced the oil and sold it to PDVSA (or any other seller), legislative approval would have been required (under art. 5). In contrast operational contracts did

[24] Which is not a very good cost-deflator since most of the costs are paid in the domestic currency (bolivar).

not require Congress approval.[25] 2) Under this arrangement the foreign investor is *shielded* by PDVSA from the application of all special oil taxation (royalty, special rate of the income tax, surface tax, etc). A foreign investor classified as an *operational service contractor* is equivalent under the law to a company that provides, for example, food services to PDVSA. The foreign investor is then subject only to regular taxes (maximum 34% income tax as any other business) and PDVSA alone pays oil taxes (67% of profits plus a 16.6% gross-revenue royalty, or about 80%of profits).[26] In fact a change in the Law in 2002 increasing the royalty to 30% and decreasing the income tax to 50% affected PDVSA but not the OSA contractors.

Another illustration of the importance of PDVSA's role as a buffer is given by the way the royalty tax is set. Many of these oil fields were only profitable at the lowest (1%) royalty rate (Mommer, 1998). The executive through the Ministry of Mines can set the royalty rate in the range of 1% to 16.6%. Given that it is set at the executive's discretion, it is impossible to commit with foreign investors to such a low rate (1%) for the 20-year contract period. The OSA arrangement solved this commitment problem by making PDVSA the responsible party for paying all royalties. This is particularly important given that changing the royalty is one of the most common methods of revenue expropriation. According to Andrea MacDonald, Treasurer of Exxon Exploration Corp.: "the most frequent cases of breach of contract involve something like arbitrarily raising the *royalty rate* form 5% to 10%, which may not destroy the viability of the project but may indeed reduce the internal rate of return substantially" (Moran, 1998; MacDonald, 1998).

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[25] The contracts were sent to the Energy Committee of Congress to obtain their benediction and support. The Energy Committee's opinion was that the OSA did not require legislative approval because: 1) Ownership of the oil would remain in PDVSA's hands; and 2) Contractors were paid for a service not for the oil (Mommer, 1998; OCE-PDVSA, 1998a).

[26] Low productivity oil camps, which would not be profitable for PDVSA at 67%, are made profitable by paying a lower effective tax if exploited by a private contractor.

The general implication of this arrangement is that it creates *a contractually based formula for the state's participation in oil profits*. Any change in oil-specific taxes would be paid by PDVSA. The foreign investor would be subject only to paying national taxes that apply generally to any business. The mechanism effectively makes PDVSA the subject of all sovereign oil taxation and isolates the investor from any change in their tax treatment. Notice the significant difference between this arrangement and the one that applied to all oil concessions since the 1943 Oil Law. The government could then change either the special Income Tax rate for oil production (requiring legislative approval), the royalty (with some executive discretion), or (after 1967) the fiscal reference price set by the executive and affect all foreign concessionaries. In contrast, with OSA contracts only changes in the nationwide general taxation level will apply to the foreign investor. Any other change in fiscal participation by national, regional or local authorities would be mostly absorbed by PDVSA.

Protection from expropriation by local authorities is particularly important. Operational contractors (not being legally "oil producers") are not protected by a constitutional provision forbidding regional and local taxes to oil production.[27] OSA contracts have provisions to translate most of such levies to PDVSA. Under the contracts signed in the first two auction rounds, local taxes are incorporated into the fee-formula that PDVSA has to pay the foreign investor. In the third round -where 90% of the total OSA oil reserves auctioned were allocated- a clause established that any local or regional taxes above 4% of profits would be paid by PDVSA (OCE-PDVSA, 1998a).

The OSA fields were allocated to foreign investors through *auctions*. The parameters for the auction were different in each round. In the first two rounds the

[27] That provision was in the 1961 Constitution and it is in the new 1999 Constitution.

parameters included: 1) An investment program and 2) A cost parameter fee. In the third round the auctioning parameter was an initial cash payment in a closed bid. The third auction round (in 1997) was a resounding success, with investors offering higher bids than most analysts had expected[28]. PDVSA collected payments for US$2.2 billion (about 20% of oil fiscal revenues that year and more than 2% of total GDP).

Analysts were extremely surprised by the high bids offered by foreign investors. For example, Repsol (Spanish oil multinational) offered $300 million for an oil field that most analysts had valued at around $150 million. Almost all oil fields offered were allocated for significantly higher amounts than originally expected by industry analysts (El Universal, 6/4/1997; see Section V).

Under OSAs, all contractual disputes are to be settled through private arbitration. According to the contracts signed in the first round any dispute would be settled by private arbitration in Venezuela. In the second round contracts were still subject to private arbitration in Venezuela, but they specified the use of the International Chamber of Commerce (ICC) rules. In the third round "definitive and irrevocable" *international arbitration* in the city of New York was specified, using the ICC rules. "The decisions of the arbitrage tribunal must be obeyed and are binding for both parts" and "the enforcement of the sentence can be processed by any court with competency in the case without reviewing the substance of the case." "The parts renounce to any appeal to the arbitration decision," and PDVSA "abdicates any legal immunity of jurisdiction" that it may have as a state-owned company or "any immunity against executive embargo of its assets" (OCE-PDVSA, 1998a; Third round OSA contracts, 1997).

[28] See Section V bellow.

The OSA contracts include a *force majeure* clause, which specifies under which conditions (typically "God acts" such as earthquakes) the foreign investor has a valid justification for non-compliance of the contract, allowing for an extension of the contract. In the second round such clause includes as valid reasons "compliance with state acts, orders, decrees, or sentences that substantially impede the fulfillment of the work." Furthermore, in the third round contracts, the clause establishes that not only the investor does not have to comply with the contract if acts of state "impede" the exploitation of oil, but the investor would be compensated by PDVSA for damages if the act of the state is "not of general applicability" (Third Round OSA contracts, 1997).

In 1995 PDVSA signed a special OSA contract with Chevron. In this particular deal, Chevron has the right at any moment to renegotiate the contract if "there is a significant change in the economic circumstances which would make it unreasonable to continue with the agreement." If the re-negotiation fails, Chevron has the right to opt-out from the agreement recovering the full amount of its investment (Mommer, 1998, p. 52).

Notice that the guarantees to foreign investors became progressively stronger. From national to international arbitration, from weak to strong guarantees of compensation in case of unfavorable "acts of state" (in the *force majeure* clause), and so on. As the guarantees became stronger, investor enthusiasm and the payments they were willing to offer to the state increased significantly. In addition, notice that since in the third round the bidding parameter was a present cash payment (which is by definition an additional sunken cost) investor confidence required better guarantees than in the case of a pay-as-you-go system such as the established in the first two rounds (which implied less sunken costs). Clearly, a present cash payment was a very attractive option for President Caldera's government.

Mommer (1998, p. 48) presents an illustrative example of the way foreign investors pressed and obtained better guarantees. In the first round, Shell was awarded an oil camp but refused to sign the contract unless *international* (not national) arbitration was specified. Shell had been one of the largest investors expropriated in 1976 and had committed not to go back into Venezuela unless significant guarantees against expropriation were given. Finally, two years later the government acceded to this demand and the next contracts included this provision.

It is important to mention that the proportion of sunken costs in OSA projects is lower than those in AA or RE investments the other type of projects that will be discussed next. OSA projects are generally reactivation of oil fields that were already in production. Therefore a significant part of the exploration and development costs (which are mostly sunk) had already been disbursed by PDVSA. In contrast AA and RE involve a higher proportion of sunken assets, in the case of AA projects mainly in the oil upgrading plants and in RE in the exploration face.

The proportion of sunken costs that has to be assumed by foreign investors is partially determined by the design of the investment structure. Therefore, one way to mitigate the investor's expropriation risk is to structure the investment deals in a way that minimizes the use of foreign investment used to finance sunken assets (as opposed to non sunken). The way OSA projects are structured illustrates this possibility. Nevertheless, the use of upfront payments to auction the OSA fields did not contribute to expropriation risk mitigation.

Extra-Heavy Crude Upgrading Strategic Association Agreements (AA)

In order to develop the Orinoco Oil Belt, a huge reservoir of extra-heavy oil (the largest in the world), very significant investments had to be made. The low quality characteristics of this crude (very low gravity of around 8 API grades, high viscosity, and high sulfur content) require a costly upgrading process that makes it less profitable than the typical oil production of the country. In order to upgrade this crude into heavy or synthetic (medium gravity) oil, *specialized highly capital-intensive* oil upgrading plants had to be constructed in Venezuela. Therefore, the proportion of sunken costs in this type of project is significantly higher than in other oil projects and capital recovery takes a longer period. Each project required investments of between $2-4 billion. All are 30-35 year projects. Given the characteristics of these projects it was impossible to grant short-term rents to foreign investors. Credible commitment then was of particular importance.

In order to develop these projects the administration of President Pérez decided in the early 90's to create joint ventures with foreign companies that could provide capital, know-how, and technology. These joint ventures were approved using the opportunity given by article 5 of the Nationalization Law. Article 5 only allows for joint ventures with foreign investors under the following conditions: 1) The state has to be guaranteed "control" in the joint venture (but it does not precisely define what is control and how it should be achieved); 2) The association needs to have a determined duration (cannot be permanent); 3) Congress has to approve the basic legal framework for the associations (Congreso de la Republica, 1975; OCE-PDVSA, 1998a).

The Venezuelan Congress accepted a very lax interpretation of the meaning of "control" (and the Supreme Court has since upheld that interpretation). It simply requires

PDVSA's approval, in a control committee, for "important" decisions. The "regular" decisions have to be approved by a simple majority in accordance to the proportion of shares.

Four Association Agreements have been approved in extra-heavy oil upgrading:[29]

1) CERRO NEGRO Project ($2 billion/ around 100,000 barrels/day), in association with ExxonMobil (with a 41.67% stake) and Veba Oel (16.67%)(Germany).[30] PDVSA participates with the remaining 41.67% of the capital.
2) HAMACA Project ($3.5 billion/ around 200,000 b/d), in association with Chevron-Texaco (30%), formerly Texaco (USA) and Philips (40%), which is merging with Conoco (USA). PDVSA owns 30%.
3) PETROZUATA ($2.5 billion/ around 100,000 b/d) with Conoco (with a 50.1% controlling stake), which is merging with Philips (US). PDVSA owns the remaining capital.
4) SINCOR ($4 billion/ around 100,000 b/d) with TotalFina-Elf, formerly Total (France) and Statoil (Norway). This project is more costly than the others, but will produce a higher quality/higher price syncrude.

The projects add up to a total investment of around US$12 billion in ten years, with an estimated production of 550,000 b/d by the year 2007.

Given the *natural* lower profitability of extra-heavy crude oil extraction and upgrading (relative to rest of the oil sector), Congress approved an exception to the Income Tax Law to make these projects lucrative. The AA projects will then be taxed at the regular non-oil income tax rate (34% maximum) and not the special oil income rate

[29] This is the information current as February 2002. Amounts and partners have changed over time, mostly due to the recent mergers in the international oil industry.
[30] Veba Oel was negotiating all its Western Hemisphere operations (including its stake on the Cerro Negro project) with PetroCanada as off March 2002.

(of 67%). This modification of the Law obtained significant support in Congress. The royalty is contractually determined. In the Cerro Negro and Hamaca Projects (the last two negotiated chronologically) no royalty is charged (0%). In Sincor and Petrozuata it is set at 1% for the first 10 years and it will be the regular 1/6 thereafter (OCE-PDVSA, 1998d).

The AA projects, as opposed to the OSA, are subject to sovereign oil taxation. However, in this case PDVSA contractually guarantees their partners a maximum limit for the state's share on profits. The contractual limit is clearly specified in each contract. Foreign investors are to be compensated by PDVSA "for adverse economic situations resulting from the *adoption of governmental decisions or changes in the legislation* which cause a discriminatory treatment of the AA or PDVSA's partner" unless those measures are taken to tax profits above a base market price (OCE-PDVSA, 1998d). For example in the joint venture with Conoco (Petrozuata), the contract has a definition of those "excess profits" that *can* be the subject of sovereign expropriation. To establish the boundary for excess profits the agreement uses a baseline price of $18 per barrel (in 1994 dollars) for the Brent marker-price. This baseline price is adjusted for US inflation.[31] Suppose in a given fiscal year the average price is lower than this baseline price then, in case the government takes "discriminatory and unjust measures" against the project or the foreign partner, PDVSA has to fully compensate for the state's extraction of revenues. However, for actions taken against the profits generated above a price of $25 a barrel, no compensation has to be paid (Mommer, 1998).

Similarly in the Cerro Negro agreement the excess profits are also contractually defined. The baseline price here is $27 (1996 dollars). Excess profits here occur: if the

[31] Using the implicit price deflator for the US GDP (Mommer, 1998).

inflation-adjusted baseline price has been exceeded uninterruptedly for six months, and thereafter the average price is still higher than this baseline price for the full fiscal year. Only this excess profits can be the subject of sovereign changes in taxation. Additionally, the AA contracts include a clause that extends them for ten years in case of production curtailments for which the investor is not responsible.

It is important to notice that providing some flexibility for increasing taxes in case there is a significant oil prices rise, provides more stability to the contracts. If the contracts were completely inflexible to price increases the likelihood that the whole contract structure could fall apart would increase. The reason is that the additional benefits for the government of breaching the contracts would increase so much that they would outweigh the costs.[32]

International arbitration in the city of New York using the ICC rules is the method for settlement of disputes in AA (as in OSA). Again, any competent tribunal can execute the arbitrage's decision, without reviewing its substance. If for any reason the courts declare the arbitrage invalid, the dispute can be taken to ultimate arbitrage at the International Center for Settlement of Investment Disputes (a World Bank sponsored institution). As in OSAs, the *force majeure* clauses include acts of the state as an acceptable excuse for non-compliance by the investor.

The AA projects are constitutionally (art. 9) exonerated from local or regional taxes, since they (as opposed to OSA) are considered *oil* projects. They are also exonerated from the Value Added Tax in the pre-operational stage. If for any reason this situation changes, PDVSA would have to compensate foreign investors.

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[32] A more effective tax structure that itself adjusted when there is a higher profitability as a result of exogenous events could have provided the same result. I fact this alternative was studied but required a significant change in the tax and oil laws that the government did not want make, due to the high political costs involved.

Along the same lines as Heavy Oil AA, other AA contracts have been signed: one in Gas-liquefying and the other in Bitumen production (Orimulsion). Since both are relatively less profitable and require high-sunk costs and long-term capital recuperation, they have even stronger guarantees. The Gas Project draft contract included very strong contractual clauses against expropriation[33]. The Orimulsion AA contracts also include a renegotiation clause to compensate the private partners for any adverse change in the fiscal regime or in any other way "deemed unjust and discriminatory" (Mommer, 1998).

Revenue Sharing Risk Exploration Agreements (RE)

Revenue Sharing Risk Exploration Agreements (RE) are the third type of arrangement used in the oil opening. Under RE some areas are auctioned for exploration by the foreign investor. In case exploration is successful, extraction of oil would be done in association with PDVSA. In 1996, ten exploration areas were auctioned, of which eight were allocated to 14 companies (some in association).[34] Here the bidding parameter was not a present cash payment but the share of state participation in profits (PEG) offered by investors –in excess of the regular oil-taxes.[35] The auction process was very successful. Analysts were surprised by the fact that all the winners of the auctioned areas offered the highest possible state-share on oil profits (Mommer, 1998). In order to untie some tied bids, a bonus cash payment was offered. The bonuses added to a total of US$

[33] "PDVSA shall compensate the foreign shareholders for losses in patrimony...caused by decisions taken by national, provincial, or local administrative authorities, or by changes in the legislation implying unjust discriminatory treatment of the Company or of those shareholders" Official Gazette, Sep. 9, 1993. The Gas project contract also established international arbitration.

[34] Twenty-nine offers from 44 investors associated in twenty-three consortia were received (OCE-PDVSA, 1998a).

[35] PEG. Participacion del Estado en las Ganancias (PEG).

245 million. As in the case of AA, RE contracts had to be approved by Congress under the conditions for private investment given by article 5 of the Oil Nationalization Law. According to some preliminary estimates this type of arrangement could produce up to 500,000 barrels/day by 2007 (Mommer, 1998).[36]

This type of contract offers some similar guarantees to foreign investors (to AA and OSA agreements).[37] 1) The companies are exempted from local and regional taxes. 2) The *force majeure* clause provides for compensatory damages in case there is a discriminatory act by the government (not of general applicability), which impedes production. 3) The contracts provide final and binding international arbitration in the city of New York, using ICC rules (p. 61, RE contract, PDVSA 1996)[38]. Again, PDVSA irrevocably agrees not to invoke "immunity from jurisdiction of any court or from attachment in aid of execution of any other legal process...with respect to itself or its assets." 4) The duration of contracts is 39 years, and they provide for an extension in case there is a curtailment in production due to a government decision (RE contracts, 1996; OCE-PDVSA, 1998).

[36] Exploration through RE agreements has been relatively unsuccessful in finding significant new oil reserves. As off the end of 2001 only two of the RE contracts appeared to have a promising future (according to a PDVSA source).

[37] These contracts are written in English as oppose to the others that were written in Spanish (PDVSA, RE contracts, 1996).

[38] "Judgement for execution of any award rendered by the arbitrage tribunal may be entered by any court of competent jurisdiction, without review of the merits of such award" (RE contracts, 1996).

V. Some Additional Evidence of The Success of the New Institutional Framework

As has been argued throughout this chapter the institutional framework for reopening the oil sector has been very successful in attracting foreign investment. Table 4.2 and Figure 4.1 show the level of investment per-year in the Venezuelan oil industry (in real US$ of 1998). Table 4.2, presents the total gross investment per-year for the period 1950-2001 in the Venezuelan oil industry. For the period 1950-1992, before the oil reopening, the average (mean) investment per-year for three different periods is shown. The period 1950-1958 was one of very significant foreign investment and the period of 1959-1976 was a period of expropriation and investment decline (net disinvestment accounting for depreciation and obsolescence), as described in Chapter 3. The period 1976-1992 is the period of state monopoly; as a result all investment was made by PDVSA. After 1993, when the oil reopening foreign investment began, the annual figure is discriminated by source, i.e. each of the three types of foreign investment (OSA, RE, and AA) and PDVSA. In Figure 2, the lighter bar represents total gross investment in the oil industry and the shorter darker bars represent foreign oil investment. The difference between the two is mostly public investment. Investment by domestic private investors has always been insignificant.

As can be seen, foreign investment has increased rapidly since the sector was re-opened in 1992. In 1999, total foreign investment ($4.5 billion) significantly surpassed investment made by PDVSA ($2.7 billion), even though PDVSA itself had increased investment significantly in the 1990's. During the last decade, investment has been

significantly higher in real terms than the historical averages. In 1997-2001, average annual oil foreign investment ($7.1 billion) was more than 4 times higher in real terms than the annual average of 1950-59 (a period of high investment growth) and 9 times higher than the annual average in 1960-75 during the period of revenue expropriation. Oil investment in 1997-2001 represented an average of around 8% of GDP per year and close to half the total gross investment in Venezuela.[39] Figure 4.3, shows how the rate of growth of the oil capital stock has been sustained since the opening at very high levels by historical standards. In particular, contrasting with the negative growth rates during the expropriation period in 1958-76.

Until 1997 OSAs were the primary recipient of foreign investment, as shown in Table 4.2. Nevertheless, AAs have been since 1998 the largest source of foreign investment. RE agreements have not been recipients of very significant investments, primarily because they involve exploring and finding oil before any production can be developed and according to recent information only two of the RE agreements appear to have been geologically successful in finding profitable reserves.

Investors have not been offered large short-term rents or "sweet" fiscal deals. Khelil (1995) reports that a World Bank study, which analyzed 226 fiscal systems applied in 144 countries to oil production, concluded that Venezuela offered among the toughest fiscal conditions in the world to foreign investors in terms of government take. Similarly, Van Meurs and Associates (1997), in a worldwide comparative study of fiscal systems for oil, concluded that Venezuela had one of the highest government takes in proportion to prospectivity (i.e. compared to expected profitability). *Petroleum Economist* argued,

[39] Source: Central Bank of Venezuela

before the third round action, that fiscal conditions offered in the OSA contracts were "too tough" and that if the profitability was not improved investors might lose interest.[40]

Table 4.2

Investment in the Venezuelan Oil Industry by Origin:

1950-2001

Millions of 1998 $

	PDVSA	OSA	RE	AA	Foreign	Total
1950-59*	-	-	-	-	1,261	1,261
1960-75*	-	-	-	-	758	758
1976-82*	2,599	-	-	-	0	2,599
1993	3,601	13	0	0	13	3,614
1994	3,465	204	0	0	204	3,668
1995	4,239	619	0	0	619	4,858
1996	4,430	841	98	0	939	5,369
1997	4,682	1,030	301	972	2,304	6,986
1998	3,902	1,218	418	1,542	3,178	7,080
1999	2,744	1,464	137	2,860	4,460	7,203
2000	3,067	1,144	70	2,780	3,994	7,061
2001	3,632	1,413	98	2,252	3,763	7,395
1993-2001*	3,751	883	125	1,158	2,164	5,915
1999-2001*	3,148	1,340	102	2,637	4,072	7,220

* Annual averages (mean value). All the figures represent gross investment (i.e. depreciation and obsolescence have not been deducted)

Source: Office of the Chief Economist, PDVSA, and own calculations.

[40] Scrutton, Michael "Spoilt for choice as bidding opportunities proliferate" *Petroleum Economist.* February, 1995. Similarly *Oil and Gas Investor* (see next footnote) cites the opinion of oil consultants arguing that fiscal conditions are comparatively tough.

The state was successful in attracting very significant investments, under such relatively tough fiscal conditions. In fact, investors willingly offered a very favorable take on profits to the Venezuelan state, when biding in the auctions of OSA (a total $2.2 billion in advance payments) and RE (untying bonuses for $250 million and the highest level of future government take in the bidding parameter). *Oil and Gas Investor* heralded the third round action as a complete success: "The oil world has never seen anything like Venezuela's third sale of operating contracts this June. After the week long fervor had subsided, international oil companies had pledged more than $2 billion for the right to work 18 fields, twice what optimistic observers were predicting prior to the bid."[41]

Chávez' "Bolivarian Revolution" as a Test

History has provided an additional *acid* test to evaluate the effectiveness of the hostage mechanism. In 1999, after the 1996-1999 boom in foreign oil investment under the "apertura" led by PDVSA's CEO Luis Giusti under the administration of President Caldera (1994-1999), Hugo Chávez won the elections with a leftist platform of radical change.[42] Among the most significant policy changes proposed was a radical change in oil policy. Chávez oil platform included the following points: 1) Need for tighter state control over PDVSA, which according to him had become "a state within the state." 2) A higher proportion of oil revenues should be handed to the government. 3) Reverse the policy of rapidly increasing oil production (cutback on capital investment), in favor of a

[41] "Round three: a knockout," *Oil and Gas Investor*. July 1997. *South America Report* (July 1997) also refers to the third round as a "extraordinary success."

[42] Chávez a lieutenant-colonel of the Venezuelan army had launched an unsuccessful military coup attempt against President Perez in 1992. Chávez was pardoned by President Caldera and launched a surprisingly successful presidential campaign in 1998 beating all established political parties.

policy of coordinated cutbacks with OPEC. Main policy objective has to be to maximize oil price instead of the quantities produced. 4) Most of PDVSA's overseas investments (including CITGO) were not strategically sound and therefore had to be review and probably divested. 4) Existing contracts with foreign investors had to be reviewed and possibly repudiated, because they were against the state's interest and unconstitutional (Moody's, March 1999, El Universal, El Nacional, Petroleo YV).

After taking charge, Chávez has appointed two of the fiercest critics of the reopening ("apertura") process as his Oil Ministers, Alí Rodríguez (1999-2001) and Alvaro Silva Calderón (2001-2001). Rodríguez and Silva, before becoming ministers, had been among the leaders of a group that went before the Supreme Court to ask for a repeal of the contracts (the Court eventually ruled against).

Predictably, under Chávez, oil policy has significantly turned around. Production has been systematically cut back in coordination with OPEC. PDVSA's autonomy has been radically curtailed. Luis Giusti resigned from PDVSA shortly after Chávez victory and thereafter Chávez has appointed 5 different presidents of the company in the last 3 years. Interference with the financial and operational autonomy of the company has dramatically increased and a large proportion of the highest executives have resigned. Investments plans have been dramatically curtailed. The government has openly expropriated additional revenues from PDVSA by -among other strategies- taking dividends significantly above what would be financially sound and increasing the company's debt to finance the government. It is difficult to overstate how radical the change in oil policy has been, along the lines that Chávez had proposed in the campaign.

In contrast, even though the Chávez' administration stopped giving new opportunities to foreign investors in oil production, it has until now respected the existing

contracts with foreign investors and pledged to continue doing so.[43] Very pragmatically, after studying the potential costs of contract abrogation, the government decided to back off from its campaign pledge. Even more surprising has been the government's decision not to divest from PDVSA's offshore investments (after months of contradictory statements).

In January 2002, the government approved a new Oil Law by presidential law-decree using the special powers granted to the president by the government-controlled legislature. The Law is very nationalistic. It increases oil royalties significantly (from 16.6% to 30%) and requires state control of more than 51% of the capital in any association with private investors. Nevertheless, the new law would be applied only to contracts signed after January 1, 2002.[44] Still the government apparently has made some attempts to ask foreign investors to "voluntarily" renegotiate the contracts, in particular attempting to increase the contractually established royalty in the AA. Until now those attempts have not materialized. In fact, at the time this was being written in June 2002, the National Assembly was discussing changing the just approved law to make terms more favorable to foreign investment.

Foreign investment hasincreased during Chávez presidency (1999-2002), as can be seen in Table 4.2. This fact suggests that even in the midst of political turmoil, changes in the future property rights, and a less attractive prospect for the Venezuelan oil industry, foreign investors believed that their fundamental property rights were relatively well protected. For example, the AA project Hamaca has been fully deployed under

[43] Foreign investors have been offered opportunities in natural gas.
[44] Chávez administration had signed a contract in December 2001 with China's state-owned oil company to produce a special tar emulsion called Orimulsion. Other contracts with foreign investors have been signed in the mostly underdeveloped natural gas sector.

Chávez administration. That is, foreign investors decided to start sinking large new investments in the circumstances just described.

Still it is too early to tell if Chávez' administration is not going to use the many powers it holds to try to extract additional revenues from oil investors in "creative" ways. In such case, foreign investors would have to decide if they want to claim the hostage. Claiming the hostage would probably be an exit strategy, since it would mean open confrontation with the Venezuela government.

Alternative Explanations for Investment and Commitment

Was the hostage mechanism necessary for creating credible commitment and attracting substantial sunk investments? There are alternative explanations that could justify the existence of credible commitment even without the presence of the hostage mechanism. Here five alternative explanations will be briefly discussed. Three explanations are endogenous to the theoretical framework developed in this project and two explanations are exogenous to it. The first two alternative hypotheses are those provided by the institutional literature.

The first explanation for the presence of large sunken investments could be that extraordinary short-terms rents were given in compensation for the high expropriation risks. As discussed above that appears not to be a relevant explanation in this case. Fiscal conditions are relatively though in RE and OAS contracts and in the case of the AA projects capital recovery would only happen in the long run.

The second alternative hypothesis, arising from the recent institutional literature, would be that domestic institutions, such as an independent judiciary, provided for

credible commitment (Levy and Spiller, 1996; Haggard and McCubbins, 2001). Rejecting this alternative hypothesis merits serious analysis since is the leading claim in the literature.

The literature on Venezuelan politics and the evidence available demonstrate that investors and analysts have very little confidence on the capacity of Venezuela's domestic institutions for enforcing property rights (Kornblith, 1998; Vial et al., 2002). Moreover, there are not significant substantive legal restraints to oil industry expropriation, i.e. limits to the executive discretion over oil taxation and regulation.

In particular it is important to emphasize that the crucial element emphasized by the recent institutional literature, the independence of the judiciary, is very limited in Venezuela. Throughout this work -in particular in the previous chapter- historical evidence of the weakness of domestic institutions has been provided. There had not been any significant advances in increasing the commitment provided by domestic institutions in the 1990's. The only element in that direction was the elimination of the fiscal reference price in 1996.

Investor confidence in domestic institutions is very low. The surveys of business people conducted by the World Economic Forum and the Harvard Center for International Development for the World Competitiveness Report in 2001; are specially revealing. Venezuela got the lowest rating on independence of the judiciary among the 75 countries studied. On scale from 1 to 7, in which a higher value represents higher independence of the judiciary, Venezuela obtained a score of 1.7. The highest scores in Latin America were obtained by Uruguay, Costa Rica and Chile (5.3, 5.1 and 4.3

respectively) and the lowest by Ecuador (2.1), Peru (2.0) and Venezuela (Vial et al., 2002).[45]

More generally, the World Competitiveness Report surveys shows that in Venezuela there is very little confidence in the impartiality of public institutions or in the enforcement and respect of property rights by the state. Venezuela ranked 65th (among the 75 countries studied) in the Public Institutions Index designed to reflect such confidence. In particular Venezuela ranked 61st in the answer to the question "are government officials neutral when deciding upon policies and contracts."

As has been described, the national executive has significant discretion over key components of oil taxation, in particular the oil royalties. In addition, regional and municipal governments have increased discretion over taxation since the decentralization process began in the early 1990's. Moreover, the radical political changes introduced by president Chávez after winning the presidency in 1999 gave his government unprecedented discretion in shaping the economic and political institutions that design and implement oil taxation and regulation.

As explained above, the "Bolivarian Revolution" launched by President Chávez involved reshaping all the political order. In 1999 Chávez convoked a Constitutional Assembly via referendum. The government's party obtained a 95% majority in the Assembly.[46] Chávez had clear control over the decisions taken by the Assembly. Under such circumstances it was very difficult for the President to commit using domestic institutions as a guarantee. The new Constitution gave constitutional rank to the state

[45] The question answered by business people was "the judiciary in your country is independent and not subject of interference by the government and/or the parties in dispute." (7 maximum independence, 1 minimum). The scores for Latin America were Uruguay (5.3), Costa Rica (5.1), Chile (4.3), Brazil (4.1), Mexico (3.5), Colombia (3.3), Argentina (2.7, Ecuador (2.1), Peru (2.0) and Venezuela (1.7). Source: Vial et al. (2002).

[46] The electoral system managed to translate a 60% vote into a 95% member majority.

ownership over oil in the subsoil and over the national oil company PDVSA (i.e. made the privatization of PDVSA unconstitutional). Nevertheless, even though there were proposals suggesting the state repudiation of the contracts with foreign companies those proposals were rejected by Chávez (Monaldi, 2002). The Constitutional Assembly also gave the future National Assembly a mandate to write a new oil law (the 2002 Law described above). As was mentioned above the new Law does not apply to the previously signed oil contracts.

A third hypothesis comes from the dynamic of the variables in the theory. The theoretical framework predicts that the reputational costs of expropriation would be high if the level of foreign investment already sunk is small compared to the potential for future investment. Therefore, it could be argued that, at least for a few years, the government would have little incentives to expropriate, fearing the loss in future foreign investment. After all, in the 1990's the government had plans to significantly develop a largely unexploited oil production potential, which would require large levels of foreign investment for a long period of time. Nevertheless, as it was explained in Chapter 2 there are reasons to think that reputational costs alone would typically not be sufficient for deterrence, unless there exists a cartel of foreign investors. During the 1990's it would be very difficult to argue that such a cartel existed.

Moreover, as became painfully obvious to foreign investors with the start of President Chávez administration, the potential for investment in the oil industry depends on the overall oil strategy adopted by the government. If the government adopts a strategy based on production cuts and enforcing OPEC quotas, it does not have much need for foreign investment in the medium-run.

Finally, the largest proportion of planned foreign investment was to be deployed in the extra-heavy oil Association Agreements (AA), which require a horizon of 30-35 years. With such long-term investment recovery horizons, reputational costs would not necessarily provide credible commitment during the whole life of the project given that most of the investment is sunk in the first few years.

The first argument outside the model is that ideology has changed. In the sixties a leftist ideology provided a rationale for expropriation that is missing today. Therefore the government's commitment against expropriation is more credible. This argument has many problems. As it has been argued, the evidence shows that revenue expropriation has not been ideological driven, but motivated by rational political cost-benefit analysis. Ideology has played a significant role on the feasible set of strategies but has not been the key determinant in the decision to expropriate or not. Besides, some significant degree of revenue expropriation has continued under state-ownership, showing that it is not necessarily ideology what causes it. Furthermore, although Chávez radical-left-wing victory might not have been predicted by foreign investors in 1995-97, when they decided to overtake many of these investments, a radical change was not out of the horizon in a country were a previous president have been overthrown partly for implementing a neo-liberal program and in which market oriented policies were not favored by the majority of the population. Moreover, a significant amount of investment has been made after Chávez rise to power, proving that the credibility of commitment is not based on ideological arguments.

The second possible explanation for credible commitment -that is outside the model but uses its basic logic- is that the increased integration of Venezuela to international markets (the globalization effect) increased other indirect costs of

expropriation, making revenue expropriation unlikely. Analyzing this alternative would require studying the specific channels that may generate the new political costs of expropriation. For example, the hostage mechanism imposes costs to the government in terms of its ability to obtain fresh foreign debt, but it requires an institutional structure for it to be possible. In that sense the fact that the Venezuelan government has become a systematic user of the international credit markets in the last three decades does provide the potential for imposing additional costs to reneging. Creditors (and credit markets) have better developed enforcement mechanisms than direct investors, therefore if expropriation of direct investors increases credit risk perception for the sovereign, expropriation may imply additional costs.

The recent historical experience of Venezuela also shows the limitations with the general argument suggesting that globalization has always induced a lower risk of anti-foreign investor policies. President Chávez' new oil law (2002), which significantly increases oil taxes and limits private investment in the oil industry for future foreign investors shows that globalization is not necessarily a deterrent for anti-market policies.

VI. CONCLUDING COMMENTS

State sovereignty, for all its advantages, can have negative consequences over development if governments cannot commit to respect the property rights of investors. Commitment is particularly important in the case of high sunk-cost industries. Lack of commitment would cause a sub-optimal level of foreign investment or the need to offer high short-term rents to investors. Both consequences are potentially negative for economic development.

If increased state sovereignty is not accompanied by the development of domestic institutions that can put limits to governmental opportunism, credible commitment will be difficult to achieve. Under such circumstances, institutional arrangements that complement or substitute domestic constraints with the use of external enforcement, can be effective tools for attracting foreign investment. Limiting the government's sovereignty could have negative effects on -normatively desirable- democratic accountability. Thus, the tradeoff between commitment and accountability has to be seriously considered.

The mechanism analyzed in this chapter has generalizable elements that can be used to evaluate other cases of investment in high sunken-cost industries and that complement the current literature on the subject:

1) Third party enforcement of contracts involving a sovereign state can be "outsourced" to private arbitration and ultimately to another country's legal system to make up for the lack of a credible domestic judiciary.

2) State owned assets and revenues located offshore in a jurisdiction in which the government has not sovereign authority could be used as a hostage to guarantee foreign investment. In fact, it is the very existence of a suitable hostage what makes the outsourcing of judicial services enforceable and therefore credible. The hostage mechanism works best when maintaining assets or generating revenue in foreign countries is a profitable decision. To create a hostage only for commitment purposes can prove too costly.

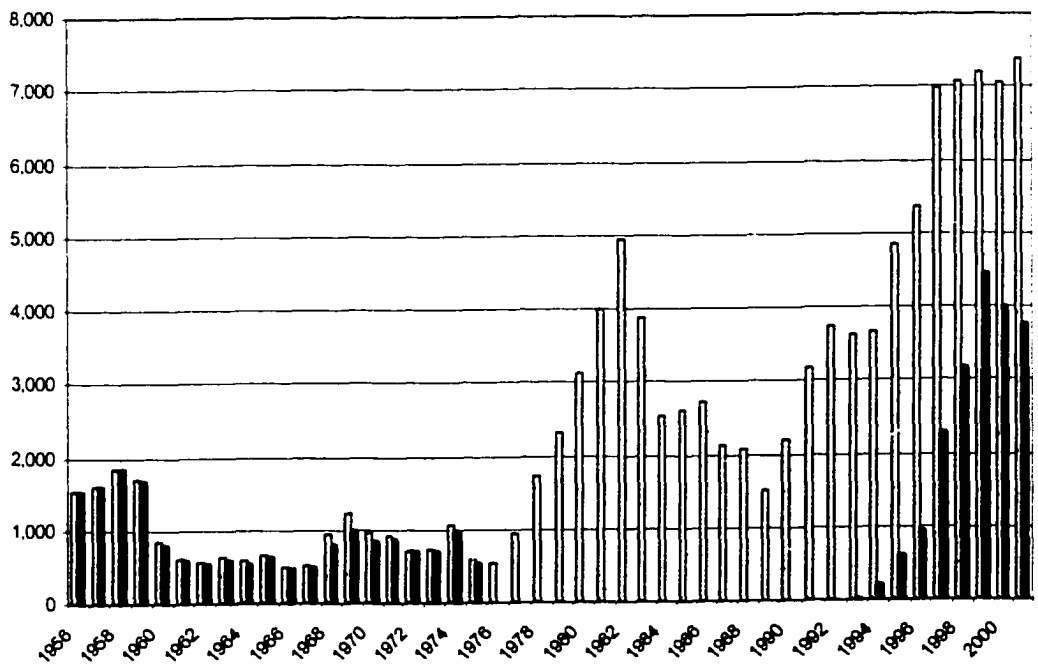
3) The mechanism not only protects against the lack of credible judicial enforcement, but it ties the hands of future administrations, making it costly for them to change regulatory policy or to re-nationalize the industry. Thus, it can serve the purpose of locking-in a specific policy strategy (oil opening to foreign investors in this instance). The case of Venezuela provides evidence that even in situations of high political instability and with the existence of the threat of radical nationalism, mechanisms such as the one analyzed here can provide a significant degree of commitment to protect investors' rights.

Figure 4.1

Total Investment and Foreign Investment in the Venezuelan Oil Sector:

1956-2001

Millions of 1998 US$

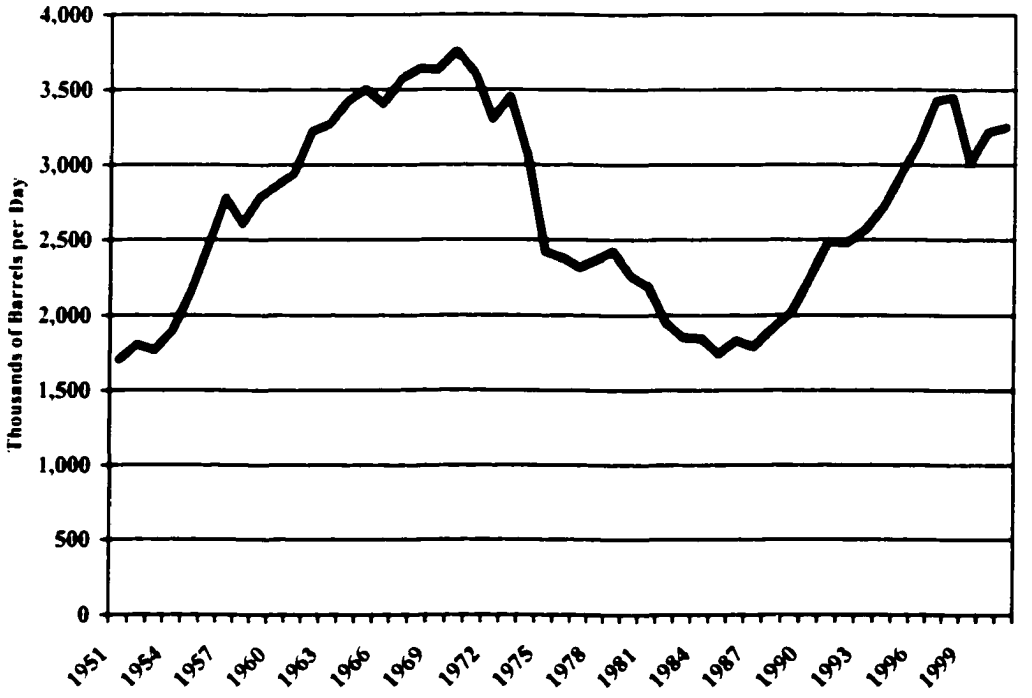


Source: PDVSA and own calculations (foreign investment represented by dark bars).

Figure 4.2

Oil Production:

1950-2001

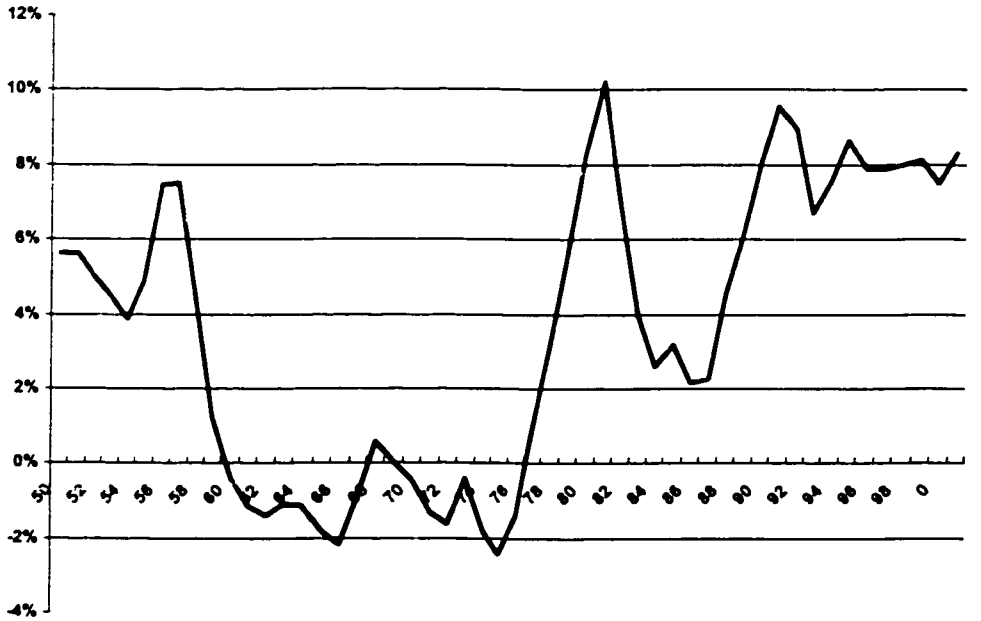


Source: PDVSA

Figure 4.3

Rate of Change of Capital Stock (%):

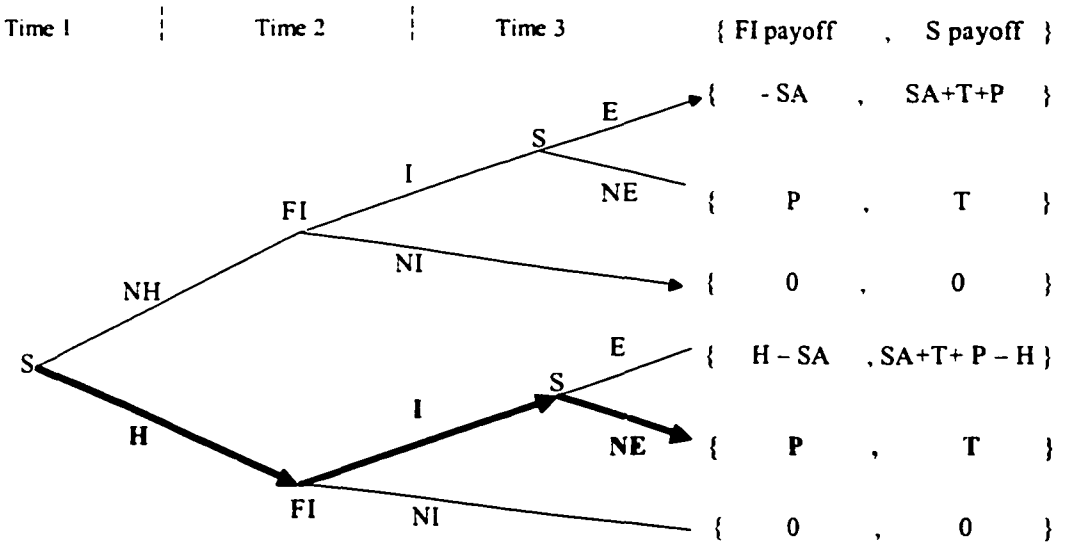
1950-2001



Source: PDVSA and own calculations using data of net capital stock in constant bolivars of 1998.

APPENDIX: A SIMPLE HOSTAGE GAME

Figure 4.4



Players: State(S), Foreign Investor (FI). Player S in period 1 can create a hostage (H) or not (NH). Player FI in period 2 can either invest (I) or not (NI). Player S in period 3 can either expropriate (E) or not (NE) By definition: $P > 0$, $T > 0$. Payoffs: SA= value of sunken assets including opportunity costs, H= hostage, P= profits above opportunity costs of factors, T= ex-ante agreed government tax bill.

This is a simple three period dynamic game with perfect information with two players: the state (S) and the foreign investor (FI). In period one S has two options creating the hostage mechanism (H) or not (NH). In period two, FI decides if he invests (I) or not (NI). If FI plays NI, the game ends with a payoff of zero for both players. In period three, S decides if she expropriates sunken assets (E) or not (NE).

This game can be easily solved through backwards-induction. In the last period S expropriates if there is no hostage (upper part of the game tree). The payoff of

expropriating, SA + P + T, is by definition higher than the payoff of not expropriating (T). Knowing that, in period two, FI plays NI because he gets a higher payoff by not investing (zero), than by investing and being expropriated (–SA). In case there is a hostage (H), in period three S would not expropriate if (H > SA + P), that is if the costs of executing the hostage are significant enough to offset the net benefits of expropriating the sunken costs. In such a case the FI would invest in period two, since (after-tax) profits are higher than the opportunity cost (P > 0).

In the sub-game with no hostage mechanism (upper part), in equilibrium, there would be no investment. In period one, S knows that if she creates a hostage (H) her payoff would be the taxes it collects from the investment (T), and if not it will be zero (0) because there would be no investment. The unique sub-game perfect equilibrium is then {H, I, NE} where the state creates a hostage mechanism, the investor deploys his assets, and the state respects the deal. The state benefits from disabling her sovereign capacity to extract quasi-rents, obtaining investment and taxes that it otherwise would not get.

CHAPTER 5

THE USE OF FUTURE OFFSHORE REVENUES AS A HOSTAGE: OBTAINING CREDIT UNDER EXPROPRIATION RISK

I. INTRODUCTION

This chapter analyzes a separate application of the hostage-type governance structure: the issuance of debt instruments backed by offshore receivables. In the context of the empirical case of the oil reopening in Venezuela, the structure analyzed in this chapter complements the general hostage framework discussed before. However, analytically it can be evaluated as a separate stand-alone application of the hostage concept. Moreover, the use of this mechanism has become relatively standard for financing high sunk cost sectors, as it will be shown bellow, in the last decade the use of this type of debt structure has been rapidly spreading all over the developing world.

In order to obtain funds to finance the Extra-Heavy Oil Upgrade Association Agreements (AA) projects, the future oil export revenues (offshore receivables) generated by these projects have been given as a debt repayment guarantee (hostage/collateral). Between 25%-45% of the capital for each of the four AA projects has been obtained through *project finance* of debt guaranteed by offshore receivables.[1] The term *project finance* refers to the practice of obtaining funding for an investment before it enters into operation by issuing debt that is backed only by the project's own future revenues and *not* by the project sponsors/operators. This is in contrast to debt backed by an established corporation such as Exxon or PDVSA.

The financial and legal structures utilized to frame these debt deals have transformed the future export receivables into a high quality *hostage*, providing protection against expropriation of the investments. Taken as a whole, the structure

[1] Additionally some sponsors obtained directly additional credit to finance their capital share.

mitigates the expropriation risk for the foreign sponsors/operators involved in developing the projects and at the same time it mitigates the risk of default for creditors.

The mechanism is structured as to allow creditors to automatically *capture* the export receivables in case of potential (or actual) debt default. In particular, it protects against a default caused by a government attempt to expropriate the cash flow of the project. Again, as with the hostage mechanism analyzed before, the crucial element making the offshore receivables an effective hostage is that it imposes large short-term costs on government reneging.

The typical structure of a debt issue backed by future offshore receivables requires the borrower (in this case each AA project consortium) to create an offshore debt-issuing vehicle (ODV) under the legal jurisdiction of a credible foreign judiciary. The borrower cedes all rights to export receivables to the ODV. The ODV issues the debt instrument (e.g. bond). The designated U.S. customers with long-term contracts for the future exports of oil are directed to pay for the exports directly to a collecting agent/trustee who makes interest and principal payments to bondholders, sending the residual to the exporter (the AA project) (a more detailed description is given in Section III bellow) (Jordan, 1998; DCR and S & P various reports on AA projects).

The protection against expropriation given by the AA offshore receivables reinforces the one provided by using PDVSA as a hostage. As argued in the previous chapter, PDVSA and in particular its foreign assets (a $7-8 billion stock) and export revenues ($10-16 billion per year) are a potential hostage against contract reneging by the government. In addition, the export receivables generated by the AA valued at around $2

billion per year, constitute a less valuable but more tightly structured hostage protecting creditors against debt default.

This chapter is structured as follows. Section II, presents an analysis of the general development in the use of debt backed by offshore receivables in the last decade. Section III, presents the stylized structure of the offshore receivables hostage structure used to obtain project finance credit for the AA projects. Section IV, evaluates the quality of oil future offshore receivables from the AA projects as a hostage. In particular it discusses the risks of payment diversion and product diversion. Section V, presents some evidence of the success of the mechanism in reducing expropriation risk, complementing the evidence presented on the previous chapter of the success of the whole structure in increasing foreign investment. Section VI, concludes with some comments and extensions.

II. THE DEVELOPMENT OF DEBT BACKED BY FUTURE RECEIVABLES: AN INSTRUMENT TO REDUCE SOVEREIGN RISK

The use of offshore receivables as a guarantee or collateral to back debt is not unique to the AA projects. This type of mechanism has been increasingly used to finance investments with similar characteristics in the developing world. In fact, since its inception in 1987 and until 1999, close to $36 billion of this type of debt had been issued in 148 separate transactions (see Table 5.1).[2] Oil project funding has largely dominated the use of the mechanism, but other high-sunk sectors have been also significant issuers of this type of debt (e.g. copper, telecommunications). As mentioned in the previous chapter, it has been used by PDVSA starting in 1996 to fund its expansion plans through PDVSA Finance (Moody's Report, 1999). Similarly, PEMEX, the Mexican state oil monopoly, has become the world's largest issuer of this type of debt.

The use of future offshore receivables to back debt emissions allows projects to obtain better credit ratings, reducing the costs of finance and allowing for longer maturity debt issues. This risk reduction is particularly beneficial to financially sound and profitable companies or projects that have their international debt rating severely limited by the low sovereign rating "ceiling" of their home country. Rating agencies are generally unwilling to give ratings higher than the sovereign's unless borrowers provide additional guarantees -that would be costly for the government to interfere with. The government's credit rating sets the sovereign ceiling (see Section V). The reasoning is that if the sovereign enters into a debt default situation all domestic debt issuers could be

[2] Ketkar and Ratha (2001).

the victims of sovereign obstruction of their foreign debt payments (Fitch, 1999; S & P, 1999).

The debt backed by offshore receivables has been able to obtain ratings above the sovereign ceilings and above the equivalent unsecured debt emissions made by the same issuers. It has been used mostly in developing countries with low sovereign credit ratings were the benefits of credit risk reduction are larger. Companies or projects that are tempting targets for revenue or asset expropriation have been the typical users of this type of debt. Sunken investments with offshore receivables are then the perfect candidates for the utilization of this mechanism (Jordan, 1998).

The first debt secured by offshore receivables was structured in 1987 by TELMEX, the Mexican state-owned telephone monopoly (later privatized). In that case the receivables from the net international calls between Mexico and the U.S. were used as *collateral*. In the last decade the mechanism's use expanded. In the period 1987-1999, around 200 transactions of debt secured by assets and receivables, totaling $47.3 billion, where evaluated by the major credit rating agencies. 77% of that amount (equivalent to $36.4 billion) was backed by future flow receivables, the remaining (23%) being backed by existing assets ($10.9 billion) (Ketkar and Ratha, 2001).

Latin America issuers have significantly led in the use of this mechanism. Argentina, Colombia, Brazil, Mexico and Venezuela represent more than 80% of the total amount in U.S. dollars, the rest being mostly developing countries from other regions.[3] By 1999 Venezuela's represented 16.4% of the all the receivables' backed debt (the second country surpassed only by Mexico). In the case of Venezuela all the debt was directed to the oil industry (a relatively minor proportion to a petrochemical project,

[3]Prominently Turkey, Pakistan, Indonesia and Nigeria (Ketkar and Ratha, 2001).

FERTINITRO, the rest to oil production as described in this chapter). In 1999, debt securitized by receivables represented 18% of Venezuela's total external debt (Moody's, 1999).

Oil projects are the leading users of this instrument. Forty Five percent (45%) of the future flow transactions involve securitization of oil and gas exports ($16.4 billion). Other exports, such as iron, copper, coffee, and orange juice, represent 20.7% (minerals are the most significant). Credit card and telephone receivables guarantee 18.7% ($6.83 billion) (See Table 5.1 bellow) (Ketkar and Ratha, 2001; Jordan, 1998; Moody's, S & P, DCR credit ratings). Notice that more than 70% of the debt-backed by receivables has been issued in high-sunk costs sectors.

Table 5.1

Debt Backed by Future Receivables by Type:

1987-1999

Source: Ketkar and Ratha (2001), data from Fitch, Moody's and S &P.

The AA projects are among a handful of those transactions of debt backed by future receivables, which fall under the separate category of *project finance* (only 6 transactions out of a total of 148, see table above).[4] *Project finance* credit only represented 6.8% (or $ 2.5 billion) of the total debt backed by offshore receivables until 1999.[5] The Venezuelan AA debt represents the largest proportion of project finance backed by future receivables (at the end of 2001) (Ketkar and Ratha, 2001; Fitch; Moody's).

[4] *Project Finance* refers to the practice of funding an investment before it enters into operation by issuing debt that is backed only by the project's own future revenues and not by the project sponsors/operators. This is in contrast to debt backed by an established corporation such as PEMEX or PDVSA.
[5] Some of the debt for AA projects was floated after 1999.

III. PROJECT FINANCE FOR THE EXTRA-HEAVY OIL UPGRADE ASSOCIATION AGREEMENTS: THE STYLIZED STRUCTURE

The Extra-Heavy Oil Upgrade Association Agreements have been partially funded through *project finance* (i.e. debt repayment is not backed by the partners sponsoring the project but only by the project's own future cash flow). The capital obtained through this source represents around one third (1/3) of the total capital invested (or about $4 billion of the approximately $12 billion to be invested). In each particular project the proportion of debt backed by receivables varied from 25% to 45%.[6]

The AA debt issues backed by future receivables that have been allocated are:[7]

1) Cerro Negro Finance. Total of $600 million in bonds. $200 million due in 2009; $350 million due in 2020; and $50 million due in 2028.

2) Sincor Finance. Total of $1.2 billion in senior bank loans.

3) Petrozuata Finance. Total $1 billion in bonds. $ 300 million due in 2009; $ 625 million due in 2017; and $75 million due in 2022.

4) Hamaca. Total $1.1 billion in senior bank loans.

[6] Total leverage was higher reaching 60% in some cases, but the remaining debt was assumed and guaranteed by the project sponsors.
[7] As off June, 2002.

Under *project finance* arrangements, debt-holders face a higher risk than if they received a guarantee from the project's *foreign* sponsors (i.e. creditworthy multinational oil companies such as the leading sponsors of these projects, Exxon Mobil, Chevron Texaco, Philips Conoco, and Total Elf Fina). Therefore, the mechanism is costlier for the foreign sponsors (which have excellent credit ratings) than using regular finance. However, the crucial element of project finance is that it allows them to shift a large part of the risk (in particular expropriation risk) to debt-holders.

If the debt is backed by offshore receivables, debt-holders in turn face less expropriation risk than the risk being shifted to them by the sponsors. As will be explained in detail bellow, the legal and economic structure of the debt emission significantly mitigates expropriation risk for bondholders by providing them an offshore hostage. As a result, the mechanism as a whole significantly reduces expropriation risk for investors and investors generating a high degree of credible commitment.

Figure 5.1, shows the stylized structure of the debt emission mechanism for the AA projects (which is typical of debt backed by offshore receivables). The key elements are:

1) The AA project (e.g. Sincor or Petrozuata) consortium creates a foreign subsidiary specially designed to be an offshore debt-issuing vehicle (ODV), e.g. Sincor Finance Ltd., in a country with a credible judiciary (e.g. Cayman Islands, with British judiciary).[8] This ODV becomes the legal owner of any future oil exported by the AA project and therefore has the rights to the future

[8] Generally the US is not the preferred place of creation of the ODV, because the US Bankruptcy Law could interfere with the mechanism. The Cayman Islands Law does not interfere (Moody's, 1999).

receivables. The ODV issues bonds or other debt instruments in the financial markets, the proceeds from which are given to the AA to finance the completion of the project.

2) The designated customers of future upgraded oil supplies (e.g. Exxon Mobil, Conoco) sign a legally binding *notice of acknowledgement* with irrevocable instructions to send any payment for oil purchased from the AA to the collection account managed by the Collecting Agent / Trustee.

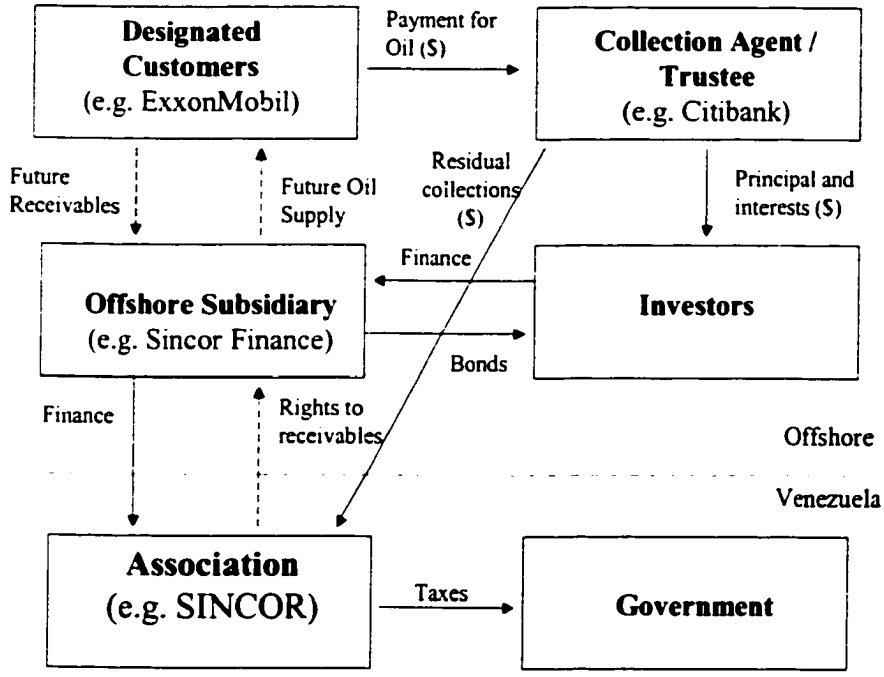
3) The Trustee (e.g. Citibank, Chase), which vows for the fulfillment of the agreement, collects the money from the customers in a collection account that maintains a one to six month debt-service reserve and makes payments of principal and interest to debt-holders, the residual is then sent back to the AA. Certain conditions of increased default risk (default events), including adverse conditions generated by the sovereign and agency rating bellow investment grade, *trigger* the retention of additional resources in the collection account until the situation is normalized.

4) The amount of offshore receivables included in the mechanism would, under most oil market scenarios, cover a significant multiple of the debt service averaging around six to eight (8) times and under the most stressing market scenarios not falling under two (2). In other words in general only a fraction

of 10% to15% of the offshore revenues would be used for debt service, the residual 85% to 90% would be returned to the AA project.[9]

Figure 5.1

Stylized Structure of Finance Backed by Future Offshore Receivables



[9] See credit reports. DCR Sincor, August, 1998; Moody's Cerro Negro, June and July 1998; Fitch all AA, February, 2002.

IV. ARE FUTURE OIL EXPORT RECEIVABLES A GOOD HOSTAGE?

One key point to evaluate is if the future offshore receivables constitute an effective hostage. Compared to physical or financial assets, future flows or revenues might appear to be a much less secure hostage. After all future flows are uncertain and can potentially be stopped or diverted by the sovereign, eliminating all the protection provided by a hostage. In the case of the future offshore revenues generated by the AA projects, this section will show that these receivables constitute a high quality hostage that would transform government expropriation and/or default a very costly strategy, making commitment highly credible and the risk of default low. Moreover, if default or expropriation occurred the hostage would provide some degree of compensation to creditors. The receivables from these exports constitute such a good hostage due to: 1) the nature and characteristics of the product and transaction, and 2) the legal structure that supports it.

The AA projects' output is an "upgraded" crude, a result of upgrading very low gravity/high sulfur extra-heavy oil (of around 8 grade API gravity) from the Orinoco Belt into the equivalent of heavy oil (around 16 grades API in three of the projects) and synthetic medium-gravity-oil in the case of Sincor (26 grades API). Almost all (about 99%) of the output produced will be exported to the U.S., typically under long term purchasing contracts with leading oil companies.[10]

[10] Typically including the US partners of the projects.

The nature of the product and the transaction indicate a very high probability that the flow of exports and receivables will occur as expected. Some key elements that support that assertion:

A) Oil is a commodity with well-established and liquid markets that are expected to continue that way in the foreseeable future (Ketkar and Ratha, 2001; Jordan, 1998).

B) The reserves of oil in the AA projects are known with some degree of certainty and are well above the level required to fulfill the projects' expected future exports in the 30-35 year contracts.[11]

C) Venezuela is a large net-exporter of oil, thus the output of AA projects has to be exported. There is no domestic market in Venezuela capable of absorbing such output, nor there are domestic refineries capable of refining it.

D) Oil exports represent the leading source of foreign currency and fiscal income for the Venezuelan government; thus it is unlikely that exports would be stopped for a significant period of time without the government incurring in extremely high economic costs.

[11]According to technical studies cited by DCR and Moody's, in all cases reserves assigned significantly exceed those planned for the duration of the projects (DCR and Moody's credit reports on AA, 1998 and 2001).

These characteristics suggest a high probability that export revenues from AA will continue to be generated in the future. As expressed by the Vice-President of the DCR rating agency, Rohinton Dadida: "We believe that under every imaginable scenario, oil will continue to be exported from Venezuela and the major market for this oil will continue to be U.S. refineries." (DCR, October 1999). Nevertheless, debt-holders could still face two important risks: 1) Payment Diversion Risk; and 2) Product Diversion Risk.[12]

1) *Payment Diversion Risk*: The sovereign government (directly or through the state-owned company) may try to force the exporter to surrender all foreign currency earnings to the Central Bank or direct the offshore purchasers of oil to remit the payments back to an account under the control of the sovereign. In the case of AA projects that instruction could refer in particular to the share of exports that corresponds to PDVSA, the sovereign shareholder in the project.

The legal structure of the transaction offers strong deterrents against *payment diversion*. All customers with future long term purchasing contracts with the AA have signed an irrevocable *notice of acknowledgement* with instructions to send the payment for any oil purchased to the AA, to a collection account managed by the Trustee. Those customers are legally liable if they do not follow those instructions (under New York law). Among the leading signing customers are the U.S. parent companies of the sponsors

[12] These risks, as well as other commercial and sovereign risks, are explicitly assessed by credit rating agencies such as Moody's, Standard & Poor's, and Fitch, when analyzing debt backed by future receivables.

of the AA projects (e.g. Conoco, ExxonMobil) and other creditworthy companies. For example, CONOCO (which has a very good investment grade rating) has signed a 35-year contract to purchase the largest share of oil from the Petrozuata AA project.[13] These *designated customers* include most of the largest importers of heavy oil in the U.S. and all have investment grade ratings.

Moreover, any significant *decrease* in the proportion of oil exported by the AA that is sold to the *designated customers* would *trigger* contractual orders to the Trustee requiring it to retain any additional revenues received on the collection account (above the one to six month debt service that is normally retained). This retention would continue until the situation normalizes. Other sovereign actions that imply revenue expropriation or interference (considered "default events") would also trigger retention of funds. One such event of default is the repudiation (or major contractual breach) of the AA agreements by PDVSA. In fact, if the rating of the debt emission falls bellow investment grade, the retention of receivables is automatically triggered. According to the legal counsel and the risk analysts of the leading rating agencies -Moody's, S & P, and Fitch- the risk of payment diversion is minimized by the legal structure and the creditworthiness of the designated customers.[14]

Interfering with the payment structure of the receivables mechanism could be extremely costly for the sovereign government, even in the short run. In the very short term it could imply losing revenues retained in the collection account and the potential loss of additional retentions, which are a multiple of what would be saved by not

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[13] Conoco was given at the time of debt emission (1997) an excellent investment grade AA- rating by DCR (formerly Duff and Phelps which later merged with Fitch Ibca). Conoco later merged with Philips Petroleum.

[14] See AA credit reports. Moody's August 1998; DCR August 1998; S & P November, 2001; and Fitch February, 2002.

honoring debt service.[15] Moreover, it could significantly hinder the sovereign's access to credit markets, not only by potentially increasing the sovereign debt risk of the Venezuelan Republic, but more importantly by destroying the credibility of the very similar mechanism of debt backed by receivables used by PDVSA's offshore debt-issuing vehicle (PDVSA Finance) to issue most of its debt. Only under very extreme circumstances of fiscal crisis (with sovereign default) it would be imaginable that the government would contemplate incurring in all the costs associated with significantly interfering with the receivables structure. Even then, it is very likely that the government would try to guard the credibility of a mechanism that could potentially be the only source of foreign financing. Especially since, as will be shown next, it would also be very costly for the government to try to redirect exports to non-designated customers.

2) *Product Diversion Risk:* The sovereign may try to force rerouting the oil exports to other markets or to non-designated customers, which have not signed a notice of acknowledgement (e.g. requiring them to deposit purchase payments in the collection account).

One of the easiest ways in which the sovereign government could try to interfere with the receivables mechanism is by forcing the exporter to sell its product domestically. However, as explained before, that is not possible in the case of AA because of a lack of domestic market for the crude. As argued before, this is one of the crucial characteristics that make oil receivables a good hostage in the case of oil exporting countries with relatively small domestic markets. In fact, according to Ketkar and Ratha (2001), the

[15] As was explained before debt service only represents a small fraction (1/6-1/8) of the receivables.

existence of a domestic market has been one of the key difficulties in developing this type of mechanism with some agricultural product exports.

Heavy oil is a particularly good hostage because it is generally very difficult to divert to other markets or customers. Refining heavy oil requires specific investments that are tailored for the specific type of oil. There are only a limited number of potential customers for Venezuelan heavy oil, most of which are designated customers in the offshore receivables debt agreements. Most customers are U.S. Gulf Coast refineries. Trying to divert oil exports to other markets or customers would be very costly. According to the DCR credit rating agency, a technical study by expert firm Purvin and Gertz (made in 1996) concluded that a significant fraction of Venezuela's heavy oil exports (0.7 million barrels per day) were technically non-divertable in the short run, irrespective of the price discount that could be offered.[16] In the long term it would be very impractical to divert these exports since heavy and extra-heavy oil represents most of Venezuelan oil reserves. In 1997 heavy oil represented 70% of Venezuelan exports to the U.S. and 39% of U.S. heavy crude imports came from Venezuela (DCR, April 1999). A significant penalty in terms of price discounts would be paid if oil were diverted to non-traditional customers. Additionally, if exports were diverted to non-U.S. markets (e.g. in Europe) additional transportation costs would be incurred. Moreover, major investments would be required in the medium run to adjust new refineries to be able to process Venezuelan heavy oil (Moody's report, March 1999). It is important to point out that since the output of SINCOR is a higher-quality/higher-value synthetic oil that has a wider market, the rating agencies have considered that this project has a higher diversion

[16] DCR PDVSA Finance Report, April 1999.

risk compared to the others. For that reason Moody's has sometimes given that project a lower rating.

The protection given by the structure of the deal was well summed up by a DCR analysis: "DCR believes that the sovereign has little incentive of interfering with this structure, since an effort to re-direct this flows or renegotiate the terms of the transaction would lead to severe financial and economic consequences for PDVSA and the Republic of Venezuela" (DCR, Press release October 1999).

It is interesting to notice that the AA project foreign sponsors *do* guarantee debt repayment before completion of the projects. However, after completion debt-holders have very little recourse against the sponsors. Ex-post, creditors only have security on the offshore revenues generated by the projects. Creditors do not have security on the physical assets of AA, which are largely in Venezuelan territory.[17] In other words, sponsors assume the pre-completion risks, but very little of the post-completion risk (with respect to creditors). As it was argued in the theoretical chapter, the revenue expropriation risk is minimal before the investments have been sunk and few revenues are being generated (there other significant technical and commercial pre-completion risks). The sovereign risks increases ex-post, precisely when the sponsors shift the risk to debt-holders.

In the case of *asset* expropriation over the AA projects by the Venezuelan government, both debt-holders and sponsors have legal recourse on PDVSA's assets in

[17] Legally due to debt negative pledge covenants with the World Bank (IBDR), the Venezuelan state cannot contractually offer *directly* physical assets as security to back the emission of debt. Effectively lenders will have security on offshore accounts, the agreements, some real offshore property and some of the shares of AA, but no security over PDVSA's shares or any physical assets of the AA projects in Venezuela (DCR Press Release, August, 1998). Indirectly lenders do have recourse against PDVSA's assets in case of contract breach. Offshore assets can be useful for this purpose. However any assets in the sovereign jurisdiction of the Venezuelan state are a very poor quality collateral given the lack of judicial independence.

the U.S. (DCR, August, 1998). As argued before, given that PDVSA has about 20% of its consolidated assets outside of Venezuela, it would be very costly for the government trying to expropriate. Under this hostage mechanism PDVSA also waives any immunity it may have as a public company.[18]

[18] The express waiving of immunity is important since any business owned by the Venezuelan government is considered an agency of the Venezuelan state and entitled to immunity from US Courts according to the US Foreign Immunities Act, unless such immunity is expressly waived. That immunity would include attachment of their assets to enforce a judgment. (Moody's PDVSA report April, 1999).

V. THE EFFECTIVENESS OF THE DEBT BACKED BY RECEIVABLES: SOME EMPIRICAL EVIDENCE

The mechanism of project finance backed by future receivables appears to have been quite successful. In what have were difficult circumstances in the emerging markets, in the aftermath of the "Tequila" and Russian crises, the projects were able to attain investment-grade status and obtain a significant amount of capital. The debt issues of all AA projects were rated significantly above the sovereign ceiling of Venezuela by all leading rating agencies.

The *sovereign ceiling*, set by rating agencies, is the highest rating that can be obtained by debt denominated in foreign currency issued by a domestic entity. The ratings agencies have typically set the sovereign ceiling equal to the sovereign debt rating of the home government, arguing that in the event of sovereign default there is a very high probability of sovereign interference with foreign debt payment of domestic entities. Usually only debt that offers some additional guarantees, in particular offshore assets, is rated above the sovereign ceiling. Piercing the sovereign ceiling was a significant accomplishment, especially considering that there had been only a few experiences of project-finance operations backed by receivables before the AA.

According to a comparative study by the World Bank, Ketkar and Ratha (2001), the use of debt backed by future receivables has been an overall success. If well structured, it has allowed debt ratings to pierce the sovereign ceiling, significantly reducing the costs of finance. Furthermore, the lower risk has also allowed for longer

maturities. Their evidence shows that this type of debt has lower interest rate spreads than the equivalent unsecured debt. Moreover, this type of debt is less volatile (has lower variance) in price and interest rate spreads than unsecured debt of similar characteristics. In the period 1987-1999, there were no defaults on this type of security, even though there were sovereign defaults in some countries involved (e.g. Pakistan) (Fitch, 1999).

As can be seen bellow in Table 5.2, Moody's (one of the three leading rating agencies) gave the debt of each of the AA projects a rating well above the sovereign ceiling of Venezuela when they were issued. In June of 1998 when Petrozuata and Cerro Negro issued their debt, they both obtained a rating of Baa1, which is an investment-grade rating four notches above the sovereign ceiling (see table footnotes for explanation of the ratings scales). At that point in time the Republic of Venezuela and the sovereign ceiling were at Ba2, just in the limit of investment grade. Shortly thereafter, in July, the increasing certainty of Hugo Chávez electoral victory and the continued decline in the price of oil motivated a downgrading of Venezuela's rating two notches to B1. The rating of the AA was unaffected (6 notches above the sovereign ceiling) until in September an additional downgrade of Venezuela's rating to B2 provoked a downgrade of Cerro Negro's and Petrozuata's debt to Baa2, were it has remained during Chávez presidency, still six notches above the sovereign ceiling (January 1999-May 2002 02).[19]

In August 1998, when Sincor's debt issue was first rated it obtained a relatively less favorable rating than the other AA projects, but still 4 notches above the sovereign ceiling. The argument used by Moody's analysts was that since the output of this project, a higher quality syncrude, has a wider market than the heavy oil produced by the other is more easily divertible and therefore there exist a higher diversion risk in this project

[19] Up to the time of this chapter being written in May 2002.

(Moody's August, 1998). Given that in the original rating they had incorporated this additional risk factor, the analysts considered that Sincor's debt had already been significantly penalized and did not require any additional downgrade. It is important to mention that Sincor's debt was initially supposed to be floated when the Russian crisis exploded in late 1998. That attempt failed due to the ensuing crisis in the emerging bond market. A few moths later it was successfully floated.

Hamaca debt was first rated when issued in June 2001. Its rating has been slightly worse than Cerro Negro's and Petrozuata's and equal to Sincor's. Moody's analysts have reasoned that since it is the only project not yet completed -in part due to costly construction delays- pre-completion risks are higher.

Table 5.2 also shows the rating of Petroleos de Venezuela (PDVSA) which is generally equal to the sovereign ceiling. This bad rating mainly reflects the risk of government expropriation of PDVSA revenues in case of an extreme fiscal crisis. In fact, rating agencies generally recognize that the overall financial situation of PDVSA would merit an "A" rating, if sovereign risks were not considered. In October 2001, Moody's changed its methodology allowing PDVSA and a few other highly profitable emerging market companies (e.g. PEMEX, TELMEX) to have a higher rating than the sovereign ceiling. PDVSA's rating is therefore now slightly higher than Venezuela's. In contrast the other agencies maintain PDVSA's rating equal to the sovereign's.

The fact that AA projects, which are much less profitable and commercially riskier than PDVSA, still have a higher rating, shows how much the existence of high sovereign and expropriation risks weights on these ratings. Investors and analysts perceive a high risk of expropriation of the oil industry in Venezuela. Conversely, they

perceive that the hostage mechanism with offshore receivables reduces those risks significantly.

Table 5.2

Moody's Debt Ratings[20]

AA Projects, PDVSA Finance, PDVSA, and Venezuela's Sovereign Ceiling

Date	Sincor	Petrozuata	Cerro Negro	Hamaca	PDVSA Finance	PDVSA	Sovereign Ceiling (VE)	Notches above SC[21]
Jun.98	*	Baa1	Baa1	*	A2	Ba2	Ba2	4
Jul. 98	*	Baa1	Baa1	*	A2	B1 *(d)*	B1 *(d)*	6
Aug. 98	Baa3	Baa1	Baa1	*	A2	B1	B1	6
Sep. 98	Baa3	Baa2*(d)*	Baa2*(d)*	*	A3 *(d)*	B2 *(d)*	B2 *(d)*	6
Sep. 99	Baa3	Baa2	Baa2	*	A3	B2	B2	6
Jun. 01	Baa3	Baa2	Baa2	Baa3	A3	B2	B2	6
Apr. 02	Baa3	Baa2	Baa2	Baa3	Baa2*(d)*	Ba1[22]	B2	6

Source: Moody's Press releases (on dates referred). (d) downgraded. Investment-grade is Ba or higher.

[20] Moody's Ratings are based on a letter scale category: Aaa, Aa, A, Baa, Ba, B, Caa, Ca, C; each category is subcategorized by the modifiers 1,2, and 3. "1" is the highest level in the category. According to Moody's definition **Baa:** "Bonds and preferred stock which are rated Baa are considered as medium-grade obligations (i.e., they are neither highly protected nor poorly secured). Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well". **B:** "Bonds and preferred stock which are rated B generally lack characteristics of the desirable investment. Assurance of interest and principal payments or of maintenance of other terms of the contract over any long period of time may be small". Baa instruments are considered "investment grade." B instruments are bellow investment-grade. In terms of issuers: **Baa**: "Issuers rated Baa offer adequate financial security. However, certain protective elements may be lacking or may be unreliable over any great period of time. **Ba:** "Issuers rated Ba offer questionable financial security. Often the ability of these entities to meet obligations may be moderate and not well safeguarded in the future." **B:** "Issuers rated B offer poor financial security. Assurance of payment of obligations over any long period of time is small." www.moodys.com

[21] Refers to the number of "notches" of Cerro Negro rating above the sovereign ceiling rating. "Notches" are the subcategories that define the ratings.

[22] On October 2001, Moody's Investor Services decided to change its methodology and allow for some exceptions to the rule of no piercing of the sovereign ceiling for domestic companies without external guarantees. PDVSA (which has maintained a high domestic rating of A3) was upgraded as a result.

PDVSA Finance, the offshore debt-issuing vehicle of PDVSA with very similar characteristics to the AA's, has also consistently obtained significantly higher ratings than the sovereign ceiling. Its recent downgrade reflects the attempts of President Chávez administration to reduce PDVSA's financial and commercial autonomy, as well as the use of debt funds from PDVSA Finance to transfer dividends to the government in a clear example of revenue expropriation.

Table 5.3 similarly presents the debt ratings assigned by Duff and Phelps Rating (DCR), which merged with Fitch in 2000. Again the debt of the AA projects is rated 4 or 5 notches above Venezuela's sovereign ceiling. DCR/Fitch rate the four AA projects equally.[23] Standard and Poor's, the other "big three" rating agency, gives a similar rating to the AA debt, 3 to 4 notches higher than the sovereign ceiling.

The fact that the debt ratings have been maintained significantly above the sovereign ceiling during the administration of Chávez despite his extreme rhetoric and significant interference with PDVSA's independence represents a compelling evidence of the hostage mechanism success.

The empirical evidence seems to show that the debt-backed by future offshore receivables is a very effective mechanism to reduce sovereign risk and generate credible commitment. The presence of a good quality hostage allowed the AA projects to be able to issue debt -not guaranteed by the project sponsors- that otherwise would have been impossible or extremely costly to issue. Partially funding the projects through project finance allowed the project sponsors to shift a significant portion of the expropriation risk (and other risks) to debt holders, but more importantly the debt-with-a-hostage

[23] In September 2000 DCR downgraded Petrozuata and not Sincor or Cerro Negro, due to what it considered "significant and costly delays" in its completion (DCR Petrozuata report September, 2000).

mechanism increased significantly the short run expropriation costs for the Venezuelan government, providing a powerful additional deterrent against expropriation.

Table 5.3

DCR/Fitch Debt Ratings[24]

AA Projects and Venezuela's Sovereign Ceiling

Date	Sincor	Petrozuata	Cerro Negro	Hamaca	Sovereign Ceiling (VE)	Notches above SC[25]
Aug. 98	BBB+	BBB+	BBB+	*	BB-	5
Dec 98	BBB *(d)*	BBB *(d)*	BBB *(d)*	*	B+ *(d)*	5
Mar. 99	BBB	BBB	BBB	*	B+	5
Sep. 00	BBB	BBB- *(d)*	BBB	*	BB- *(u)*	4
Feb. 02	BBB- *(d)*	BBB-	BBB- *(d)*	BBB-	B+ *(d)*	4

Source: DCR and Fitch Press Releases. (d) downgrade. (u) upgrade.

[24] Until 1999 the ratings in this table are those by Duff and Phelps Credit Rating (DCR). In 2000 DCR merged with FITCH-Ibca and became Fitch Ratings. Therefore, ratings for 2000 and 2002 come from Fitch Ratings. Both companies use the same rating scale. Their rating scale is based on a letter scale with + or – as modifiers. The categories are AAA, AA, A, BBB, BB, CCC, CC, C, and D (default). "**BBB:** Good credit quality. 'BBB' ratings indicate that there is currently a low expectation of credit risk. The capacity for timely payment of financial commitments is considered adequate, but adverse changes in circumstances and in economic conditions are more likely to impair this capacity. This is the lowest **investment-grade** category. **BB:** Speculative. 'BB' ratings indicate that there is a possibility of credit risk developing, particularly as the result of adverse economic change over time; however, business or financial alternatives may be available to allow financial commitments to be met. Securities rated in this category are not investment grade. **B:** Highly speculative. 'B' ratings indicate that significant credit risk is present, but a limited margin of safety remains. Financial commitments are currently being met; however, capacity for continued payment is contingent upon a sustained, favorable business and economic environment." www.fitchratings.com

[25] Refers to the number of "notches" of Cerro Negro rating above the sovereign ceiling rating. "Notches" are the subcategories that define the ratings.

VI. CONCLUDING COMMENTS

Using offshore receivables to guarantee debt represents and innovative and efficient way of engineering credible commitment with creditors in situations of high expropriation risk. The costs of setting up such as structure could be significant and existence of a reserve in collection account could have a high opportunity cost. As a result using this mechanism only makes in situations were there exist a combination of a good hostage available with a high risk of expropriation (including the risk convertibility).

High sunk costs export industries that generate significant offshore revenues, can represent a tempting target for revenue expropriation. However, the very existence of a significant cash flow generated outside of the sovereign jurisdiction opens the possibility for the creation of this type of hostage mechanisms that reduces the expropriation risk. In contrast, high sunk cost infrastructure sectors (e.g. electricity, water distribution, transportation infrastructure) that are generally domestically consumed have a higher difficulty in creating external enforcement mechanisms. An exception appears to be the telecommunications were net international call revenues can be used as a hostage.

The key generalizable ingredient in the creation of future flow hostages is finding external flows that are costly to divert and are susceptible of being legally seized by hostage takers. The mechanism should incorporate a quick and effective method of detection and punishment in the event of reneging. The structure of the debt backed by receivables is an excellent example of this characteristic. Most of the time the mechanism

could work instantaneously without the intervening step of recurring to a costly and time-consuming judicial process.

The mechanism is not only useful to obtain foreign credit. I could be used also to attract domestic creditors. In fact a significant portion of the bond emissions floated by the AA projects appear to be in the hands of Venezuelan domestic financial institutions. From the point of view of commercial risk diversification this seems to be an odd fact since the risk of oil projects is highly correlated with commercial risks in the Venezuelan economy. Nevertheless, it makes more sense if one considers that powerful domestic institutions can be in a position to prevent expropriation and therefore have a lower expropriation risk from owning AA debt.

If the foreign sponsors of high sunk cost projects are not protected from expropriation in any way, using loaned capital guaranteed by receivables can have some significant risks. If only the foreign creditors are protected and the sponsors are not, then sponsors/operators face the risk of being expropriated in a way that allows for debt repayment (and does not activate the receivables hostage mechanism), but does not allow them to recuperate their own capital. In the case of AA projects, as was shown in the preceding analysis, protection of creditors and sponsors through the two hostage mechanisms explored in chapters 4 and 5 seem to mutually reinforce.

An interesting complementary commitment devise that has been used in few of the operations of debt backed by receivables consists in obtaining the support of the World Bank as an *umbrella* guarantor. In case of government attempts to renege the World Bank can use its immense leverage of incentives and punishments to deter it.

There seems to be a significant potential of additional use of the mechanism of receivables as a hostage. For example, Ketkar and Ratha (2001) estimate that in Latin America's oil and gas sector there exist an unused securitization potential of more than $7.5 billion. Other regions of the world such as the Middle East, where the mechanism has been barely used, but which generate a very significant amount of securitizable offshore receivables offer an even more significant untapped potential.

CHAPTER 6

CONCLUSIONS

I. CREDIBLE COMMITMENT UNDER WEAK DOMESTIC INSTITUTIONS: THE ROLE OF EXTERNAL ENFORCEMENT

This dissertation has shown that foreign investment in high sunk cost sectors can be obtained in the absence of credible domestic institutions for enforcing property rights, and without giving away high short-term rents to investors. Sovereign governments with poor reputation for protecting investors' rights and with institutional discretion to expropriate can, nevertheless, credibly commit to new investors using *external mechanisms of enforcement*. The key feature of these external structures is that they impose high short-term costs to the government in case of reneging.

The dissertation supports the arguments made by the institutional economics literature on infrastructure investment. Some type of institutional enforcement mechanism is usually required to protect sunken investments from government expropriation. High sunk cost investment deals are rarely self-enforcing in the long run. The analysis in the dissertation, however, differs from the institutional literature in stressing that *domestic* institutions are not necessary for deal enforcement, nor they have been historically the leading enforcement mechanism in the developing world. External enforcement has played -and continues to play- the preeminent role in generating credible commitment with foreign investors, at least in the case of export sectors.

In Venezuela external enforcement sustained high levels of foreign investment for close to four decades (1920-1958). Probably, the perspective of rapid recovery of capital

with high profit played a significant role in the beginning. However, even after the government increased significantly the ex-ante fiscal take on profits, investment continued flowing in. The key was that the original bargain was generally enforced; only new deals were subject to the higher new taxes. The *international contract law* principle of the sanctity of contracts appears to have been enforced by the *hegemonic* intervention of the U.S. government and the threat of boycott by the international oil cartel. Once both of these external enforcement mechanisms declined, the government systematically diminished the property rights of the oil companies. The increased taxation, the perspective of further tax increases, and the shortening of the investment horizon of the oil companies led to sharp decline in foreign investment for the next two decades (1958-1976). Nationalization ensued in 1976 and a state-owned oil monopoly was created.

In 1992 when the Venezuelan government decided to reopen the oil industry to foreign investment a new mechanism of commitment had to be devised. The lack of credible domestic judicial institutions and the high discretion concentrated in the executive branch made very difficult relying on domestic sources of enforcement. Instead the governance structure that was developed transformed the state-owned oil company (PDVSA), with significant offshore assets holdings and large generation of offshore receivables from oil exports, into a *hostage* guaranteeing against government reneging. In addition, the joint ventures between PDVSA and the foreign oil companies were financed with debt that was guaranteed by the offshore receivables they will generate in the future. The use of hostages makes commitment credible by imposing stiff penalties on government reneging.

Reconstructing the International Enforcement Regime

The hostage mechanisms constitute one innovative and effective example of the use of external institutions to enforce foreign investment deals in the era of sovereign autonomy of developing countries that was launched after World War II. For all the positive and normative advantages of the rise in national sovereignty, if it is not accompanied by the development of credible domestic institutions for enforcing property rights it could end up having detrimental effects on the attraction of foreign investment. The regime of hegemonic enforcement that existed in the first half of the XX century, while limiting the self-determination of nations and not allowing developing countries to obtain the most favorable conditions, did contribute to breed significant flows of foreign investment to most Latin American countries.

The decline and final breakup of the international regime that enforced international contract law was followed -in the three decades after 1960- by a period of decline in foreign investment flows. Easy access to foreign credit during the first part of that period (to some extent as a result of the re-circulation of petrodollars) made up for the drought in foreign investment. However, after the international debt crisis of the 1980's, the need to attract new flows of foreign capital to high sunk cost sectors has demanded the reestablishment of some external mechanisms of enforcement. While countries with credible domestic institutions, such as Chile or Costa Rica, might not require them to attain credible commitment, the vast majority of countries in Latin America could potentially benefit from some form of external enforcement.

In the past tow decades, there has been a significant development of new institutions for external enforcement. For example, the multilateral and bilateral investment treaties signed in the last decade typically have a variety of provisions for the stability of investment deals. These treaties have more effectiveness the more economically interdependent the signatories are. Especially if they are part of a wider institutional framework, such as North American Free Trade Agreement (NAFTA), that governs the parties' commercial relationship and establishes credible punishment mechanisms. The key element for commitment is that treaty reneging has costly consequences for governments.

Likewise the involvement of multilateral agencies, such as the World Bank or the Inter American Development, which possess a variety of powerful *carrots and sticks* to induce compliance, can be an effective source of external enforcement. In addition, the use of international arbitration can facilitate the process of external enforcement.

In general, the development of well designed international governance structures with real enforcement powers could benefits both developing countries and foreign investors by reducing *political risk*. If commitment is credible, governments could potentially obtain more investment with favorable fiscal and regulatory conditions.

Export Sectors and External Enforcement

As this dissertation has shown, offshore revenues (e.g. export receivables, net international phone calls receivables) could be structured as a *hostage* to guarantee investment deals and/or debt. Since those revenues are outside of sovereign jurisdiction

they are difficult for the government to expropriate. If the revenue flows are costly for the government to divert, they could represent a very effective hostage to generate commitment. Similarly, assets owned by government owned commercial activities, which can waive their sovereign immunity, can be useful hostages. The application of these type hostage-like structures offers a variety of new opportunities to aid in the development of an international enforcement regime.

The generation of offshore receivables, gives high sunk cost export sectors (e.g. oil, copper) and advantage over domestically consumed infrastructure projects (e.g. transportation infrastructure, water distribution), which cannot devise external guarantees. For this reason, domestic institutions of enforcement are even more significant in the case of the latter.

II. Concluding Comments, Extensions, and Additional Implications

This last section offers a series of short comments with additional conclusions and implications. The influences over credible commitment of regime type, public and private ownership, and ideology are among the topics briefly covered.

Rational Cost-Benefit vs. Ideology in Expropriation and Commitment

Contrary to the prevailing Venezuelan literature, this dissertation has shown that the origins of expropriation and commitment -in the Venezuelan oil industry- can be attributed more to the rational cost-benefit calculations of politicians than to ideological motivations. In the period 1958-1976 all governments systematically maximized oil fiscal revenue extraction, rather than the nationalistic ideological goals promoted by Juan Pérez Alfonzo -Acción Democrática's leading oil ideologue and co-founder of OPEC. For example, all governments pushed the oil companies to increase production, in open contradiction with the dominant ideological premise of the time. Even the center-right administration of Rafael Caldera (COPEI), which began with a platform of promoting new oil foreign investment, ended up following the same policies of revenue expropriation.

In the 1990's the center-left nationalist coalition that brought again an aging President Caldera to power, re-opened the oil industry to foreign investment. There is plenty of evidence demonstrating that the President did not want to implement that policy

that he considered a anti-nationalist neo-liberal, but the lack of sufficient public resources to impulse the oil industry expansion and the perspective of obtaining some revenue advances from the oil auctioned made him eventually change his mind.

Finally, the radical nationalist "revolutionary" government of Hugo Chávez did not follow on his campaign promise of not recognizing the oil re-opening contracts and selling PDVSA's assets in the U.S. Even this ideologically driven president, made pragmatic cost-benefit calculations and decided that the costs of reneging -given the hostage mechanism in place- were too high.

Regime Type and Expropriation

The incentives for expropriating revenues from high sunk cost sectors exist both under democratic and authoritarian regimes. Both types of regime can benefit from obtaining additional revenues or for transferring them to political supporters (Ames, 1987). Although in the case of Venezuela most of the period of significant expropriation coincided with democratic administrations, authoritarian governments also reneged on the deals with oil companies. Besides, the more radical nationalist democratic experience of 1945-48 coincided with tax stability and high foreign investment.

Moreover, the tendency to expropriate the oil industry in the sixties and seventies was similarly prevalent in the oil exporting authoritarian regimes of North Africa and the Middle East. The institutional details and the support base of the regime are more significant determinants of the tendency to expropriation or commitment than the regime

type itself. This result is similar to the one obtained for the relation between economic growth and regime type.

Public vs. Private Ownership and Commitment

Sometimes the debate over the institutional framework (political, fiscal, regulatory) of the oil industry is centered on the dichotomous alternatives of privatization vs. state ownership. However, in the analysis of expropriation and commitment the ownership dimension is not necessarily the most important. As was shown, both under private and public ownership there is a tendency to government expropriation. The level of expropriation would depend on the expropriation costs and benefits induced by the details of the institutional framework.

For example, under public ownership, if the state-owned enterprise does not have financial autonomy (e.g. PetroEcuador) the political costs of expropriation are extremely low. Alternatively, if as in the case of Brazil's Petrobras, a minority participation in the state company is widely distributed among local shareholders, the political costs of expropriation are higher. PDVSA in fact represents a relatively successful case of low expropriation compared to other Latin American public enterprises. The institutionally designed managerial and financial autonomy of PDVSA significantly contributed to that result. The recent erosion of such autonomy under the Chávez administration represents a dangerous precedent.

Similarly, under private ownership the level of expropriation would be determined by details such as: the degree of independence of the regulatory authority, the

executive's legal discretion for raising taxes, the foreign vs. domestic shareholders, etc. In general, with private ownership there has to be some basic degree of commitment, otherwise very little investment would be attained. Moreover, private investors would always fight against expropriation whereas bureaucrats might not do it (since they are not risking their property). Some authors consider that for these reasons private ownership has an advantage in terms of long-term commitment (Noll, 2000). Nevertheless, as the Venezuelan experience shows, under some circumstances there can be higher levels of expropriation with private ownership (in this case foreign) than with state-ownership.

Simply privatizing PDVSA, therefore, might not produce the desired results unless other institutional changes are made to provide credible commitment. An interesting alternative to study would be distributing or selling a minority of the company's shares widely among the population. This alternative seems to have increased credible commitment in the Bolivian privatization (Monaldi, 1997; Smith, 1997).

Selective Enforcement vs. General Commitment to Respect Property Rights

One general conclusion of the analysis in the dissertation is that property rights can be selectively enforced. Governments can attain credible commitment with a subset of investors using a particular institutional framework (e.g. hostage), while expropriating others. This implication contradicts some of the literature on institutions and development, which assumes credible commitment as an economy-wide characteristic of governments. A general commitment to protect investors' rights might be better for

development, but acknowledging that governments have the alternative of selective enforcement is crucial to understand the economic impact of governmental institutions.

Some Problems of Credible Commitment Mechanisms

As was explained in Chapter 2, credible commitment is no *free lunch*. There are costs associated with obtaining it. First, there are the costs of loss in policy flexibility. By committing to a certain deal, the government might not be able to make reasonable adjustments to changing circumstances. Second, external commitment can imply a significant loss in democratic sovereignty. Since these commitment mechanisms can sometimes be set up without passing through a democratic approval process (e.g. legislative vote or referendum), it seems normatively undesirable that governments could lose sovereignty without the voters or legislators knowing it. Finally, credible commitment could generate short-term benefits for politicians at the expense of future contingent obligations (e.g. by guaranteeing debt). As a result, politicians might opportunistically assume undesirable commitments knowing they will not be around when the costs are borne. For all these reasons commitment mechanisms have to be carefully evaluated to see if they are socially optimal solutions.

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