

Preliminary First Draft
XIV International Economic History Congress, Helsinki 2006
Session 118

**THE POLITICAL ECONOMY OF FOREIGN INVESTMENT IN THE OIL INDUSTRY:
THE CASE OF VENEZUELA AND OTHER LATIN AMERICAN COUNTRIES¹**

Francisco Monaldi
IESA and UCAB²

August 2001

Abstract

Through the XX century, all across Latin America, sectors with significant sunken assets, such as oil, mining and infrastructure, were primary targets of government expropriation of revenues and assets. Nevertheless, sometimes even after previous expropriation, there were periods of significant growth in investment and stability in state-investor relations. When and why do governments expropriate? High sunk-cost sectors are particularly vulnerable to revenue expropriation. Once investment has been deployed, authorities can opportunistically renege on the original bargain extracting additional revenues. Therefore, investment flourishes systematically only when there are effective external enforcement mechanisms or domestic institutions that limit governmental opportunism. The empirical case of the oil industry in Venezuela shows that in the absence of enforcement mechanisms both private investors and state-owned enterprises are likely to be expropriated by the government. In particular, in the case of oil and mineral exports, a significant increase in the international price of these commodities provides governments with incentives to increase taxation, which may constitute revenue expropriation under some circumstances.

Prepared for delivery at the 2006 XIV International Economic History Congress,
21-25 August 2006, Helsinki, Finland

¹ The author acknowledges the excellent research assistance of Moises d'Orey, Maria Eugenia Miquilena, and Sandra Rodriguez. Previous versions of this research project have benefited from comments and advise from Mercedes Briceño, Ramón Espinasa, Stephen Haber, Osmel Manzano, Douglass North, and Barry Weingast. Financial support of the Andean Development Corporation (CAF) on a related project is gratefully acknowledged.

² Academic Coordinator, International Center for Energy and Environmental Studies, Instituto de Estudios Superiores de Administración, IESA and Research Fellow, Universidad Católica Andrés Bello.

I. Introduction

All over Latin America, sectors with significant sunk assets, such as oil, electricity, telecommunications, water distribution, and mining, have been targets of state expropriation of revenues and on occasion assets (i.e. nationalization). In the twentieth century, the typical case developed in cyclical patterns 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 a 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 of financing the potential expansion of the sector and sometimes a significant decline in performance. In general, state-owned companies have been –as private investors- also the victims of revenue over-extraction. Eventually, in most countries nationalized high sunk-cost sectors have been re-opened to foreign investment and in many cases state-owned companies have been privatized. This pattern of expropriation contrasts sharply with its relative inexistence in other sectors of the economy, like manufacturing and services. In general, both under private and public ownership there has been a historical tendency 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 apparently potentially profitable.

Oil and mineral industries are a particular case of this phenomenon. In these sectors there are significant rents that can be captured by the state without affecting long-term production. The level of resource rents varies with the international price of these commodities. As a result, if the taxation framework is not well designed it could fail to capture the total rents at high price levels or expropriate the sunken investments at low price levels. If the taxation scheme is not progressive (i.e. does not capture rents at high prices) governments have significant incentives to change it when prices go up. Taxation changes could constitute revenue expropriation if they capture revenues in excess of the rents, in particular once the price of the commodity declines.

In spite of a historical record of systematic expropriation, in some periods, investors have been willing to invest significant resources in high sunk cost and mineral sectors (even after having been themselves expropriated in previous periods). For example, in the 1990s foreign capitalists invested in developing countries more than \$300 billion (the largest share in Latin America) on

infrastructure projects in industries that had been typically the victims of expropriation in the past (Moran, 1999). It could seem puzzling that investors commit such significant resources after a history of cyclical renegeing by many developing-country governments. In fact some of these investments have already been the object of episodes of regulatory expropriation in the last five years.

The history of the Venezuelan oil industry is very illustrative of the dynamic of high sunk cost sectors. Foreign investment in oil started 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 the World War II, until 1958. In contrast, in the period 1958-76, a systematic increase in rent-extraction by the state 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.

This paper's definition of expropriation includes the classic cases: outright confiscation (seizing of assets without compensation) or nationalization (seizing of assets with some form of compensation, typically less than the ex-ante opportunity cost). But more generally the definition includes any significant change in the property rights of investors (e.g. 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). The latter type is referred to as *revenue expropriation*. Expropriation 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).

Why has there been this generalized tendency to government expropriation in high sunk cost sectors, both with private and public ownership? Under what conditions is expropriation likely to occur? When do governments commit not to expropriate? This paper aims to answer these questions by developing a theoretical framework to analyze expropriation in high sunk costs industries and contrast it with the empirical evidence provided by the history of the petroleum industry in Venezuela.

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). 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. The period of increasing expropriation (1958-1976) coincided with the rise to power of Acción

Democrática a party whose leading oil ideologues were advocates of these views. In this paper 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.

There is an extensive literature aiming to explain the period, in the 1970's, when the largest number of the nationalizations of foreign multinationals occurred all over the developing world. Far less has been written on the more general phenomena of revenue expropriation. Theories of international relations have naturally emphasized the explanatory power of the rise and decline of the sovereignty of states to understand the timing of nationalizations (Krasner, 1985 and 1999; Lipson, 1985). Some degree of sovereign authority (in particular control over the property rights of producers) seems to be a necessary condition for the general existence of expropriation. Nevertheless, there is evidence of significant variation in the level of revenue extraction across different industries in the same country and across the same industry in different "equally" sovereign states (Levy and Spiller, 1996; Moran, 1998; Henisz and Zelner, 1999). Moreover, the sovereignty variable does not explain the fact that state-owned companies with high sunk costs have also been typically targets of revenue expropriation (Noll, 1999; Savedoff and Spiller, 1998).

Alternatively, a literature has emphasized the role of social classes in the conflicts between states and foreign companies, failing to capture the pervasiveness of conflicts with both private and state-owned companies in countries with different social class configurations (Petras et al., 1977). Finally, there is a literature on the rise of the multinational enterprise, which is closer than the others to the general approach of this paper. It framed the analysis in terms of a state that maximizes revenues and confronts a foreign multinational that maximizes profits (Vernon, 1971). Nevertheless, this approach fails to explain important phenomena like the expropriation of state-owned enterprises, the apparently "myopic" state preference for short-term rents, or the use of expropriation strategies that do not generate fiscal revenues but transfer resources to political constituents (e.g. price regulation). The approach used in this paper is inspired on the recent literature on infrastructure investment and based on principles from the new institutional economics and positive political economy (Spiller, 1995; Williamson, 1996; Weingast, 1997; Noll, 1999; Henisz and Zelner, 1999).

High sunk-cost sectors are particularly vulnerable to expropriation by the state. Once assets have been deployed, political authorities can use their sovereign powers (e.g. taxation, regulation, etc) to renege on the original deal with investors and expropriate revenues and/or assets, not allowing investors to recover their sunken capital. Firms will continue producing as long as they

cover their proportionally small operational costs, so there would be a considerable lag between expropriation, disinvestment, and decline in performance. Therefore, political authorities can benefit from expropriation and face very low present costs. Knowing that, before committing significant sunk investments, investors require assurances that the government will not opportunistically expropriate their revenues and assets.

Oil investment in Venezuela started with foreign investment in the 1920's. In the first period (1920-1958), when 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) 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 investors, generated a situation of instability and an increased tendency to expropriation (1958-1976). At that point, the significant accumulation of sunken assets, 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, revenue expropriation induced a reduction in investment by the foreign multinationals. After twelve years of investment decline, production fell rapidly in 1971, increasing the need for new capital deployment. 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 (1976). It was made easier by the sudden abundance of resources generated by the oil boom of the 1970's. 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. Commitment was provided by a new institutional framework, which combined domestic institutions with external guarantees and enforcement.

This paper is organized in four additional sections. Section II, presents the theoretical framework. It analyzes the political costs and benefits of expropriation, the consequences of lack of commitment not to expropriate, the characteristics of expropriation in the oil sector, and the application of the framework to the case of state-owned enterprises. Section III, the core of the paper, presents the empirical case of the development of the oil sector in Venezuela. It discusses the institutional evolution of the sector and its effects over oil investment and production. It evaluates the costs and benefits of expropriation in different periods and the causes of

expropriation of foreign companies in 1958-1976. Section IV, briefly presents evidence of revenue expropriation to the state-owned oil company after nationalization (1976-1993). Section V, concludes.

II. A Theory of Expropriation

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. 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 and/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 and/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.

Sunken investments are a source of what the economics literature has labeled as *appropriable quasi-rents* (AQR). Quasi-rents arise because the *sunken* asset's value, once deployed, is highly *specific* to the particular investment project in question. If investors decided not to continue operating the project and proceeded to move the sunken asset to an alternative 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*. Any actor with control-rights over the revenues generated by the project can potentially appropriate the quasi-rents without inducing a decline in production. 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)¹.

The key elements in the political authority'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 additional (*institutional*) costs.

Political Benefits of Expropriation

Expropriation of revenues and/or assets could bring significant political benefits to the authorities, especially in the short-run. Authorities might benefit directly by obtaining additional fiscal resources for the budget (Henisz, 1999; Noll, 1999). These resources can then be spent in politically profitable ways (or privately profitable, e.g. corruption). The larger the amount of appropriable quasi-rents (i.e. stock of assets already sunk) in relation to the budget the more attractive is expropriation for fiscal purposes.

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 pricing of public utilities or domestic oil products below the long-run-opportunity-cost represents an implicit transfer to political constituents. This form of expropriation has been recurrent in Latin American countries, especially in inflationary contexts (see Noll, 2000; Philip, 1982; Rigobon, 1992)².

Political Costs of Expropriation

Political authorities could face *direct costs* when they decide to expropriate revenues or assets. Expropriation could induce a significant decline (or even halt) in production, if production ceases to be profitable for the investor. Such disruption in production could have a large negative impact on the amount of fiscal revenues collected by the government. Additionally, if production is affected, political authorities could face *other direct costs*, those arising from the pressure from *interest groups* that are being hurt by a decline in production (Zelner and Henisz, 2000a)³. *Direct costs*, associated with immediate industry contraction, are very low in high sunk-cost industries. Investors would be better off continuing production as long as operating revenues cover operating costs (which are small). Thus, the short-term effects of expropriation, over the development of the industry, are typically small. This reason alone makes sunken assets highly vulnerable to expropriation⁴.

Another type of cost, the *reputational cost*, arises from the loss of *new* investment in sunken assets due to investors' increased perception of risk. In particular, investors involved in the project being expropriated could decide not to make any additional investments that might have been planned. Additionally, the loss of government reputation among other potential investors may reduce future investment in the sector and in other high sunk-cost 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 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 oil reserves to be profitably exploited or a large proportion of the middle class without telecommunication services. In contrast, when there are not major opportunities for new investments, the reputation costs are less significant⁵. The loss in reputation in one sector or project may or may not translate to other sectors or projects depending on their similar nature (proportion of sunk cost, interest groups involved) and on the differential institutional 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 because the institutional environment of the two sectors is very different.

Additionally, as authors like Weingast (1997) and Greif, Milgrom and Weingast (1994) have pointed out, for the case of sovereign debt and foreign traders respectively, the existence of *reputational costs* alone might not provide an effective deterrent to governmental opportunism. The government's declining marginal benefits from investment implies that the investor of the last additional unit of investment cannot 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 renegeing. 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. 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. Sometimes alternative investors are even willing to take-over the operation of the assets expropriated to the original investor (Philip, 1982; Wells, 1999)⁶.

In contrast, if a cartel of investors can be successfully organized to boycott renegeing 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 of players and repeated interaction increases the likelihood of cooperation (Milgrom and Roberts, 1992). As it will be argued later in this paper, in the international oil industry, the cartel of the “seven sisters” appears to have provided for such a mechanism while it effectively worked.

Direct costs are generally low in high-sunk cost sectors. 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.

The Discount Rate of Political Authorities

Since the short-run benefits of expropriation in high-sunk cost industries are very significant whereas short-run costs are typically low, a key ingredient in the political decision to expropriate is the value that politicians place on the future. 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, 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 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. The higher the discount rate of politicians the more likely they will be tempted to expropriate since present benefits will tend to outweigh highly discounted future costs (Spiller and Savedoff, 1998; Olson, 2000).

Domestic Enforcement Mechanisms

If the *direct 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 (institutional costs) for the relevant political authority to renege on the terms of the original deal offered to investors.

Levy and Spiller (1996), in a review of case studies of telecommunication investment in Latin America, argue that three conditions are required for credible institutional commitment in high-sunk cost industries: 1) The existence of *substantive* (legal) restraints on renegeing (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 condition 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 sector in the “rent-seeking hyper-presidential systems” of Argentina and the Philippines.

Henisz and Zelner (1999) and Heller and McCubbins (1996) 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 Argentina, 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 (Heller and McCubbins, 1996). 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.

Institutional costs are the indirect political costs to the authorities of trying to change the policy status quo to expropriate the sector. They are 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.⁷

Generally in Latin America and particularly in Venezuela, institutional costs have historically been low, although it has varied through time and between countries. Authoritarian regimes, with few checks and balances, have ruled in many countries for a significant part of the twentieth century. Even 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 the legislation has regularly given the executive broad discretion over the regulation of domestic prices and in setting some taxes (Spiller and Savedoff, 1998; Philip, 1982). Under such conditions: How have sunken investments been protected from expropriation? The answer, for a significant part of the twentieth century, lies in the existence of a variety of forms of external enforcement.

External Enforcement Mechanisms

If rulers had absolute sovereignty inside their territory, third party enforcement of foreign investment deals would be unavailable. Nevertheless, historically there have been significant differences in the limits to state sovereignty (Krasner, 1999). Changes in the nature and availability of external enforcement mechanisms have -throughout history- significantly impacted the *costs* of expropriation and the ways in which political authorities are (or are not) able to commit.

Since independence at the beginning of the nineteenth century and until well entered the twentieth century, most Latin American states were weak and underdeveloped. Their “sovereignty” was significantly limited by the principles of international law “enforced” by foreign powers with hegemony over the region (first Britain and then the U.S). Lipson (1985) persuasively shows that, in the first half of the twentieth 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 foreign investors were usually well compensated (Mexican oil in 1938 being the most important case). Lipson presents evidence showing that most of the time US enforcement played a crucial deterrence role. It was based on the threat of coercion (diplomatic and military action) and more importantly on the threat of withdrawal of other benefits of the bilateral relationship (mainly credit and aid). Nonetheless, it was also the case (increasingly since World War II) that in some occasions the US government did not use its enforcement power, because it decided to further other geopolitical objectives (e.g. threat of Soviet alignment) (Philip, 1982; Lipson, 1985; Krasner, 1985)⁸.

At the same time, Latin American rulers became increasingly more sovereign, consolidating the monopoly of coercion (centralizing power and securing fiscal revenues). Additionally, the international regime that emerged after World War II (e.g. de-colonization, the

creation of the United Nations) made “formal” external enforcement of property rights by foreign powers increasingly difficult and less legitimate (Krasner, 1985; Lipson, 1985). More importantly, Lipson (1985) shows that finance from a variety of sources became increasingly available in the late 1960’s and 1970’s. Thus, the need for foreign private investment declined, and as result, foreign powers lost a powerful source of enforcement (the access to credit).

These 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 190% in comparison to the average for the previous decade⁹. Before the 1960’s the number of nationalizations in Latin America was negligible. Nevertheless, it is important to emphasize that nationalization is only one extreme mode of expropriation and other less visible modes of revenue expropriation appear to have been (and continue to be) much more pervasive, with a less dramatic evolution over time (Philip, 1982; Lipson, 1985; Moran 1998). After the 1970’s peak, outright nationalization decreased significantly as a mode of expropriation and other modes of revenue expropriation (e.g. through regulation and taxation) became relatively more prevalent (Moran, 1998; Wells, 1999).¹⁰

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 “hostages” or 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; Monaldi, 2001). 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. A related paper, Monaldi (2001), explores the complex governance structure that has given credibility to the recent re-opening to foreign investment of the Venezuelan oil sector.

Commitment Problem, Consequences and Mitigation

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 renegeed 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, mitigate or obtain compensation (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 potential¹¹. 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 costs very quickly¹². 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 renegeing (due to increased public pressure, higher legitimacy of the expropriation rationale, etc)¹³. 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 investment¹⁴.

Providing credible commitment can be costly not only for politicians but for social welfare. There exist a tradeoff between the advantages and costs of flexibility and discretionary policy change (adaptation to unforeseeable changes, democratic accountability) versus the advantages and costs of commitment¹⁵.

State Ownership and Expropriation

Historically, nationalization many times has occurred after a period of increasing revenue expropriation and confrontation with private investors (Spiller and Savedoff, 1998; Noll, 1999). A decline in private investment, as a consequence of the increased perception of risk, after some time produces 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 financial difficulties, inefficiency and deterioration (Noll, 1999).

Does state ownership eliminate the expropriation problem? Generally the answer seems to be negative, although, as with private investment, the degree of expropriation significantly depends on the institutional details¹⁶. The institutional framework described before applies, with minor modifications, to the case of state owned enterprises (SOE).

The political benefits of expropriation remain intact. Politicians can use the revenues of the SOE for politically more beneficial uses. Investing in the SOE competes with all other -potentially more “urgent”- uses of the government budget. SOE with high-sunk assets become the “cash cows” of the government (Noll, 1999:11). 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 foreign credit. Still, assets and future revenues in foreign countries can be potentially used as a guarantee to obtain loans (Monaldi, 2001).

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 autonomy¹⁷.

Expropriation in the Oil Industry

The oil industry has a high proportion of sunk-costs. Crude oil production can be separated in three faces: exploration, development, and extraction. The first two require mostly sunk investments. Extraction has a high proportion of operating costs. Adelman (p. 60-63, 1993) estimates that operating costs represent around 10% to 15% of total production costs. Of the non-operating costs most are sunk. Overall, approximately 2/3 to 3/4 of total costs are sunk. 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). In comparison, operating costs in infrastructure industries are around: 50% for electric utilities, 35% for telecommunications, 30% for gas utilities and less than 10% for water companies (p. 5, Savedoff and Spiller, 1998; Noll, 1999). 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. The downstream sectors of the oil industry (refining and distribution) also have some significant sunk costs (e.g. oil refineries and oil pipelines) (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: the existence of very high economies of scale (natural monopoly component) and widely consumed (Svedoff and Spiller, 1999; Basañes et al. 1998). The first characteristic provides a policy rationale for regulating the industry and the second gives the industry political salience (large base of political constituents benefits from low prices). Both elements, combined with the quasi-rents generated by sunken-assets induce price regulation below opportunity cost, not allowing for the recuperation of sunk costs.

Economies of scale are less significant in the oil industry. 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). Even though gasoline is widely consumed, in many countries the production and refining faces of the oil industry have separate ownership and institutional frameworks. More importantly, in Venezuela, Ecuador, Mexico, and Colombia, and in minor proportion in other Latin American countries, a large proportion of oil production is exported, thus final consumers are not political constituents. Nevertheless, regulation of domestic gasoline prices below opportunity cost has been a typical strategy of revenue expropriation in Latin America (Philip, 1982; Rigobon, 1992).

Even if the characteristics of the oil industry do not closely match those of infrastructure sectors, it is highly regulated and politically salient for analogous reasons. 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. 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.¹⁸

In Latin American oil exporting countries such as Venezuela, Ecuador, Mexico and Colombia, 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 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) for expropriation rises. As a result the oil industry can be squeezed between lower oil profits and higher revenue expropriation¹⁹.

In addition, when tax systems are not progressive, i.e. the government take increases when oil profits increase; there exist powerful incentives to increase tax rates when the price of oil goes up. This phenomenon can explain tax increases in the seventies and in the last three years (2003-2006). However, this only would constitute revenue expropriation in case the tax changes does not allow the oil producers to recover ex-ante opportunity costs.

Vernon (1971) suggested an additional source of expropriation risk in mineral resource industries. The "obsolescing bargain" argument proposes that the high risks intrinsic to the initial exploration for mineral resources makes the government willing to offer initially very good deals to foreign investors. But once the mineral is discovered and geological risks largely disappear, the government has clear incentives to renege (the original bargain becomes "obsolete"). With the updated information, other investors are willing to offer a better deal. The fact that assets are already sunk reduces the costs of renegeing.

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 or domestic enforcement to the investment deal, expropriation is likely to occur.
- 2) Ceteris paribus, expropriation is likelier: a) the higher the stock of assets already sunk (i.e. the higher the benefits), b) the lower the potential of profitable future investments in the sector (i.e. 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.

III. Foreign Multinationals, Oil Investment, and Expropriation: 1920-1975.

This empirical section describes the evolution of oil foreign investment in Venezuela since its early beginnings in the 1920's until nationalization in January 1976. It discusses the basic elements of the development of the institutional framework regulating the oil industry and the evolution of the government appropriation of revenues (taxes and other state takings). In particular

it focuses on the period 1958-1976, when the increase in revenue expropriation induced a significant decline in foreign investment. The radical contraction in investment on exploration and development that began in 1959 eventually caused a sharp decline in production capacity in the early 1970's. This dead-end situation, prompted by the policy of increasing revenue expropriation, concluded with outright nationalization (next section will briefly discuss the evolution of rent-extraction after nationalization). The evidence from this period tends to support the basic theoretical propositions presented in the previous section. A decline in the availability of external enforcement mechanisms without a compensating increase in domestic institutional restrictions, in the context of very significant assets already sunk, induced revenue expropriation and nationalization.

High Risks, 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 (until 1971). Production in 1929 reached 373,000 barrels-per-day (BPD) (e.g. 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 began a decade earlier under very high geological uncertainty and very significant investments were made before profitable oil began to be extracted (Philip, 1982). Figure 1 shows the rapid increase in production in 1920-1929, 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 graph 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 Gomez, autocratically ruled Venezuela. Gomez came into power, backed by U.S. support, after ousting his nationalistic predecessor (General Castro) who had systematically confronted the U.S. and European powers. Gomez was, therefore, particularly careful not to hurt any significant U.S. interest. Although, Gomez systematically aimed to increase the state's income from oil, he always backed down from renegeing on the contracts made with foreign investors. Contract "sanctity" had also been the tenet, drawing from the prevailing doctrine of international law, defended by the U.S. diplomacy at the time (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). Gomez 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. 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 15% of operating profits. In fact, the fiscal take per-barrel declined in the 1920's given that the basis for tax calculations was mainly based on the area of concession rather than profits or production (Tugwell, 1975; Mc Beth, 1983). Nevertheless, according to Philip (1982) large profits were not being made in Venezuela until around 1928 (after companies were able to recover the initial investments).

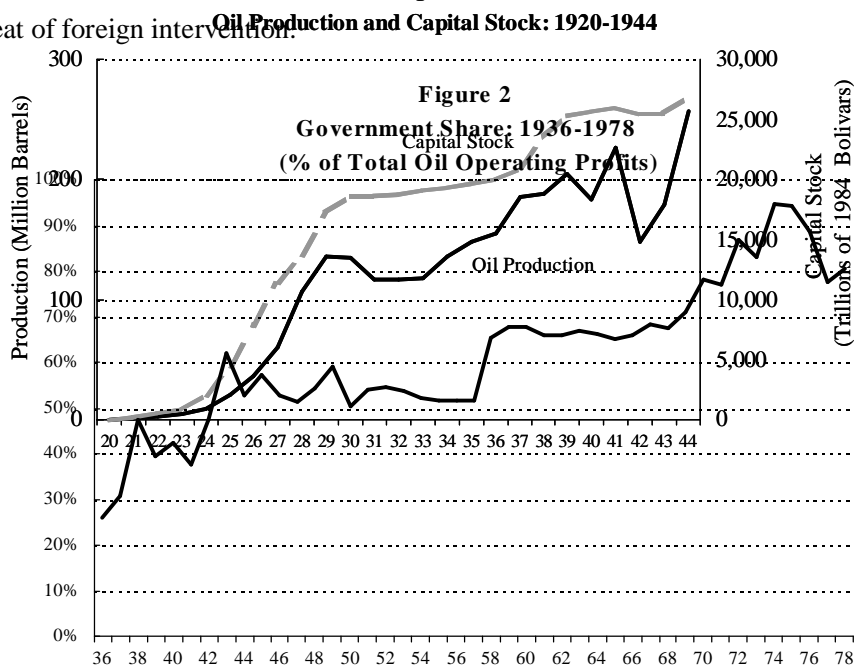
Between 1922 and 1943 the government systematically changed the law to increase oil taxes (royalties and other specific oil taxes). In Espinasa's words (1995, p.10), "as the state got conscience of the "rentist" potential of oil, there was an increasing tension between the nation, requesting a higher 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). Nevertheless, in the 1930's the fiscal share (taking all taxes into account) over total operating profits of the oil industry tended to increase, as more production from latter signed contracts increased. 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 2).²⁰ In 1936, the total after-tax operating profits for foreign companies represented roughly US\$ 150 million (at 2001 prices)²¹.

Philip (1982) and McBeth (1983) emphasize that, in the first two decades of production, foreign companies were able to enforce the oil contracts even without the help of their home governments. The economic costs of renegeing were more important than the threat of military or political intervention. Using the theoretical perspective advanced in this paper such claim seems highly plausible. The reputational costs of renegeing at this point appear to be high and the benefits relatively low. Oil investment was just beginning (relatively low level of sunk assets/ low benefit of expropriation), the high risks involved in exploration (in a relatively unexplored region) required high returns in compensation, and the potential of profitable expansion of the sector was expected to be a significant source of future fiscal revenues. Contractually taxes were mainly based 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 give new 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 it was eventually known) were 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. 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) 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 renegeing potentially very costly²². The companies successfully defended the principle that the state could only charge the taxes that were established in the concession contract.

The period, 1920-1943, was characterized by relatively low domestic institutional costs of expropriation, since the dictator controlled all centers of government (including the legislature and the courts). Nevertheless, respect for the international principle of the “sanctity” of contracts provided a clear “bright-line” to identify government renegeing (Weingast, 1997b). This was a *substantive* legal restraint against expropriation although sustained by *external* enforcement and reputational costs rather than by domestic judicial independence²³. Changes on the law did not apply to previously signed concession contracts. The Law of 1943 would change this principle opening the door for future expropriation. In this the period 1920-1943, commitment against revenue expropriation was guaranteed by the prospect of high reputational costs and secondarily by the threat of foreign intervention.



The Hydrocarbons Law of 1943: Growth (with the Seeds of Expropriation): 1943-1958.

After Gomez death in 1935, his successors General López Contreras (1936-1941) and General Medina Angarita (1941-1945) slowly opened the political system, making it more inclusive. The opposition to Gómez, led by the left (the Communist Party and the social democratic Acción Democrática) began to play a significant role. Oil was a key element in their political discourse. They argued for the need to review all oil concessions signed under Gómez many of which -they claimed- were illegally established. Also they pushed for the collection of back taxes that the companies had not appropriately paid and to increase the future state share in oil revenues.

The Hydrocarbons Law of 1943 is a landmark in the history of Venezuela's oil institutional framework. In the middle of World War II the Venezuelan government took advantage of the Allies' need for oil (and the shadow of the Mexican expropriation), to negotiate the passing of a law that, taking into account all taxes, increased the state's share in oil operating profits from about 40% to about 50% (see Figure 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; 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: 4).

The 1943 Law unified under a common legal framework all the particular contractual concession-deals that were made in the past. It established -for the first time- the requirement that oil companies would be subject to a special rate of the General 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 companies were accepting the sovereign right of the state to charge taxes over the companies' profits and to change the income tax rate at any time in the future (Espinasa, 1995: 12). 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 fact the U.S. government influence was decisive in making the companies accept the new Law. In this case U.S. diplomatic enforcement of property rights was unavailable due to the prevalence of other more pressing political interests (the War).

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 given the drive of politicians in government and the opposition to act retroactively against the companies whose concessions were legally tainted²⁴. 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 operating profits stayed on average just above the 50-50 split benchmark accorded in 1943 (see Figure 2). Both the companies and the Venezuelan state benefited from an increase in the international price of oil in the early fifties. The price hike was sustained over the 1950's, generating an increase in the companies' profits across the decade (before and after taxes given a stable distribution), see Figure 3: After-Tax Operating Profits per-barrel. For the same reason oil fiscal revenues increased dramatically, 190% in real terms between 1950 and 1958 (see Figure 6).

Except for a brief three-year democratic interregnum (1945-1948), the oil companies confronted a military regime led by General Perez Jimenez (1948-1958). Perez Jimenez was clearly aligned with U.S. interests and benefited from a hemispheric preference given to the Venezuelan oil exported to the U.S.²⁵. In 1956 and 1957 the government auctioned significant new oil concessions from which his government received an advance of \$675 million (Tugwell, 1975; Mommer, 1998). "Independent" oil companies, with no ties to the "seven sisters" obtained a 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 significant expansion of the oil sector as can be seen in Figure 4. Between 1944 and 1958 the annual growth rate of the net capital stock of the oil industry was on average 14.3 %.²⁶ Production grew at a 19.5 % annual rate in the same period. Espinasa (1995: 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 by what follows, the 1943 Law represented only a truce between the companies and the Venezuelan state. This Law eliminated the most important 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 only 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 fifteen years of decline.

Revenue Expropriation, Disinvestment, and Nationalization: 1958-1976.

In 1958, after the failed three-year experience in 1945 and after ten years of dictatorship, Venezuela’s democracy was finally established. Acción Democrática, the social democratic party led by Rómulo Betancourt, became the leading party and won the first elections. The precarious democracy 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 regime²⁷. Unfortunately, in 1957, the price of oil started to decline and it continued to do so (in real terms) for the following decade. This price decline in a period of oil demand growth is widely attributed to the cartel’s (“seven sisters”) loss of control over the oil market, partly as a result of the rise of the independent oil companies (Adelman, 1972; Espinasa, 1995). 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.

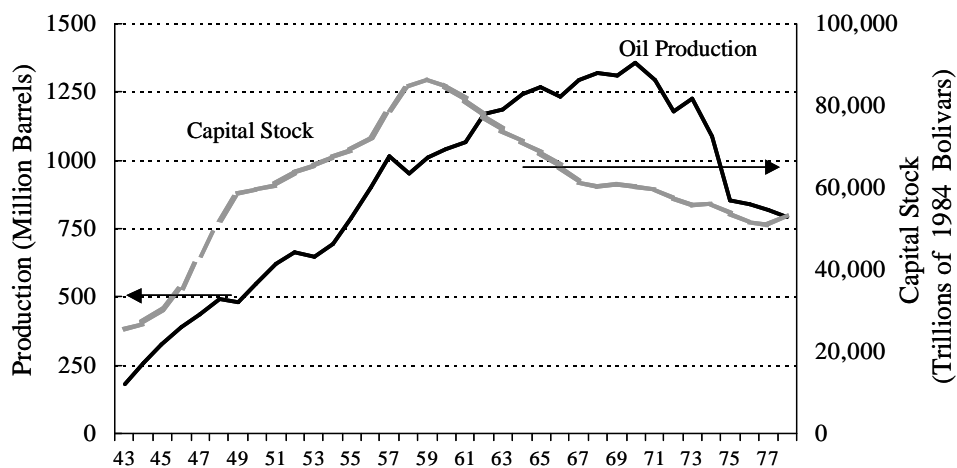
In fact, the most dramatic early episode of confrontation occurred just before Betancourt took office. The civil-military junta, that governed the country after Perez Jimenez was overthrown, *unilaterally* decreed an increase in oil income taxes. The government’s share of operating profits rose from 51% to 65% (see Figure 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 reacted strongly and was forced to leave the country after publicly denouncing the implementation of the policy²⁸. 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. 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 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.

Figure 3
After-Tax Operating Profits per Barrel: 1946-1978
 (\$1998)



Figure 4
Oil Production and Capital Stock: 1943-1978



Both Betancourt and his successors promoted a policy of “no more oil concessions.” It was aimed at strengthening state control over the oil sector in the future. 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. In particular new arrangements had to be devised after most concessions lapsed in 1983. It is important to emphasize that nationalization was *not* the ultimate goal of the regime’s ideology. Higher state control and higher participation in oil profits *with* participation of private capital were always the objectives of the mainstream discourse (Tugwell, 1975; Urbaneja, 1992).

In the context of a price decline, the tax hike implied a sharp decrease in after-tax profits as can be seen in Figure 3. For the first time the companies faced the prospect that at the prevalent tax rate investing in exploration and development of new reserves would not cover the opportunity costs of capital in the foreseeable future (in particular if compared with investing in other regions) (Adelman, 1972 and 1993). Venezuela had higher extraction costs than the Middle East, but due to transportation costs it still had a pre-tax advantage in cost per barrel delivered to the US market (Adelman, 1972; Tugwell, 1975). Therefore, it was the increase in taxes what made the prospect of development and exploration unprofitable.

The higher tax rate and the expectation of further tax increases in the future finally 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). As can be seen in Figures 4 and 5, after 1958 there was a very significant decline in oil investment. Not only the capital stock did not continue to grow, it significantly dropped. After its peak in 1959 the capital stock declined systematically for almost twenty years until the downward tendency was finally reverted in 1977-78, after nationalization. In the period, 1959-1976 the capital stock declined 68% in real terms. The average annual growth rate in that period was -2.7% and it 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. 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”²⁹ (Rodriguez, 1974; Tugwell, 1975; Espinasa, 1995).

In contrast, as can also be seen in Figure 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 camps. As it is typical in high-sunk costs 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 President Betancourt (1959-1964), the companies in a situation of increased market competition started giving discounts below the market oil price. Since that policy of discounts implied smaller profits (and oil fiscal revenues), the government imposed monetary sanctions to its use. This issue continued being a source of conflict until in 1966, under President's Leoni administration (1964-1969, also from Acción Democrática), the Venezuelan government negotiated a deal with the companies according to which oil taxes were to be calculated not using effective 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 represented a small additional excise tax (a tax on the price, similar to the royalty).

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. As part of the package, the government wanted to collect reparations for the taxes not collected in the past as a result of the price discounts given by the oil companies. The project 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 and negotiated separately with the 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 700 million bolivars (around \$175 million at the time) in reparations to settle the "discount" controversy (much less than was 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 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.

The first administration of the center-right opposition party, COPEI, began in 1969 under the leadership of President Caldera. In the beginning, Caldera’s approach was to provide a combination of incentives for the oil companies to increase investment and production. But this strategy did not provide the short-term fiscal resources that his government needed. An innovative attempt at creating joint ventures between the small state-owned company, CVP, and some foreign multinationals was not very successful.³⁰ 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 new joint ventures with the oil companies. But once it was approved into law, the executive used it immediately to increase the government share in operating profits from 71% to 78.1% (see Figure 2). In a very short time, the government received around \$200 million in additional fiscal revenues.

In 1971 production began to decline and the companies started openly to contemplate the different alternatives to opt out of Venezuela in the near future. Most 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. To limit the oil companies’ policy of taking 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 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 4) with an increase in the government’s share, 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 Betancourt and Perez Alfonzo, that emphasized 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. 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.”³¹.

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. The government received a windfall of more than \$500 million. 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 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.³² 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 6) 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 highest prices in history.

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 into. 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. 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 owned by domestic capital.

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 conducted to nationalization.” With nationalization the conflicts between the state and the oil industry were supposed to be finally solved. But as the next section will briefly argue that was not the case. The tendency to expropriate sunken assets continued “inside” the state.

The Costs and Benefits of Expropriation: 1958-1976

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

1) The low short term direct costs of expropriation, reflected in the significant delay of thirteen years between the time at which investment started its sharp decline (1958) and the time when production started to fall (1971). There were some indirect political costs in the short term, such as a decline in total employment in the oil industry. However, 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, thus they do not explain the timing of expropriation, but help to understand why the oil industry was the target of expropriation.

2) The high potential benefits of expropriation in 1958. These benefits are equivalent 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. 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 and of constitutional or legal restraints to rent-extraction made expropriation a relatively costless strategy.

4) The fall in reputational costs, 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 new investments. 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 (Lipson, 1985).

5) The decline in external enforcement mechanisms and the rise of the sovereign autonomy of the 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).³³.

IV. State Monopoly Ownership and Commitment (1976-1992)

This section briefly discusses the relationship between the state and the oil industry after nationalization. Elsewhere, Monaldi (2001), the evolution of the oil sector in the last 25 years is analyzed with more detail. It is important to emphasize that PDVSA’s history has not been one of “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 (Philip, 1994). The reasons for this relative autonomy are beyond the scope of this paper. The purpose of this section is merely to illustrate that the tendency to revenue expropriation did not cease with nationalization.

In 1976 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 were 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 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.

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. Since then a 1996 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 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 U.S. dollars (El Universal, 8/1/97).

Nationalization coincided with the period of price 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 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 oil production in appendix table), so large investments were not required.

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 in the middle of a capital flight crisis. But 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 politicians³⁴.

By 1990, after the decline of OPEC, 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) 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 re-opening oil extraction to foreign 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).

It was clear that the government would not leave PDVSA a sufficiently large cash flow to pursue all highly profitable investments on its own. Nevertheless, two questions should be answered. Why did PDVSA give away 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. As a result credit financing is an expensive alternative, because financial markets perceive the potential risk of revenue expropriation. PDVSA's bond emissions in 1993 were given relatively bad ratings. For example, Standard and Poors gave them a rating below investment grade, a surprisingly bad rating considering the relatively small debt that PDVSA had. 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 (Villalba, 1996: 20). Only recently new bond emissions with solid international guarantees (a foreign hostage) have received a significantly better rating (Monaldi, 2001). Financial analysts know that when oil prices fall, 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 solve the resulting fiscal crisis. In that case PDVSA has a double negative impact of a decline in profits and an increase in taxes (similar to what happened to the multinationals in the 1960's).

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. 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 (Monaldi, 2001).

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. But, why did the foreign companies accept to enter into a new bargain after a history of expropriation? How did the state manage to attract them back? These questions are beyond the scope of this paper and are extensively analyzed in the related paper, Monaldi (2001). Here suffices to say that a complex new institutional arrangement, which includes international guarantees and external enforcement, was devised in order to provide commitment against expropriation. With such commitment mechanisms significant new investments have been attracted in the last 7 years.

V. Concluding Comments

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

In the first 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 an investment 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. Institutional changes only reinforced the tendency to expropriation 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 twelve years for costs to surface in the form of a decline in production capacity. In developing countries with recurrent political instability it is unlikely that political costs deferred for more than a decade are going to have a significant impact in current policies.

The rise of sovereignty, for all its advantages, has the potential cost of making it more difficult for developing countries to attract new investment in favorable conditions for the recipient state. Increased political risks require higher risk premiums, in the form of short-term rents to investors. Nevertheless, developing credible domestic institutions that limit opportunistic renegeing, if feasible, can offer the advantages of commitment without many of its costs. In the meantime, Latin American countries have tried –successfully in many cases- to provide credible commitment

by combining domestic institutions with external guarantees and enforcement. The recent re-opening of the oil sector to foreign investment in Venezuela provides evidence that it is possible to generate some degree of commitment even after a history of expropriation and with relatively weak domestic institutions (see Monaldi, 2001).

Nationalization does not necessarily provide a solution to the problem of revenue expropriation in high sunk-cost industries. Once there are significant sunken assets in place, it becomes extremely tempting for politicians to use the state enterprise as a cash cow or to transfer resources to constituents in the form of subsidized prices. Even though Venezuelan politicians tried to minimize this tendency by giving *Petróleos de Venezuela* financial and operating autonomy (“lightly” tying their hands), the experience of Venezuela shows that at times of fiscal urgency revenue expropriation is very likely. This lack of commitment has been financially costly for the oil company and for the Venezuelan state.

The preliminary study of the evidence from other Latin American countries seems to support the arguments in this paper. In all other significant oil producers in the region, Argentina, Bolivia, Colombia, Ecuador, Mexico, and Peru, the oil industry was nationalized. In all, there were periods of revenue expropriation. In Argentina and Bolivia the complete cycle of foreign investment and expropriation 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.

References

- Adelman, M.A. (1972) The World Petroleum Market. Baltimore: Johns Hopkins U. Press.
- Adelman, M.A. (1993) The Economics of Petroleum Supply. Cambridge: MIT Press.
- Adelman, M.A. (1995) The Genie out of the Bottle: World Oil since 1970. Cambridge: MIT Press.
- Ames, Barry (1987) Political Survival: Politicians and Public Policy in Latin America. Berkeley: University of California Press.
- Bailey, Norman (1995) "Venezuela and the U.S.: Putting Energy in the Enterprise" in Goodman et al. Lessons of the Venezuelan Experience. Baltimore: Johns Hopkins University Press.
- Baptista, Asdrúbal and Bernard Mommer (1992) El Petróleo en el Pensamiento Económico Venezolano. Caracas, Ediciones IESA.
- Baptista, Asdrúbal (1997) Bases Cuantitativas de la Economía Venezolana: 1830-1995. Caracas: Fundación Polar.
- Basañes, Federico; Evamaria Uribe; Robert Willig (1999) Can Privatization Deliver? Infrastructure for Latin America. Washington, D.C.: IADB.
- El Universal, newspaper articles. 6/4/97, 8/2/97, 3/11/98, 4/24/98.
- España, Luis Pedro (1989) Democracia y Renta Petrolera. Caracas, Ediciones UCAB.
- Espinasa, Ramón.(1995) "Ideología, Marco Institucional y Desarrollo del Sector Petrolero". Manuscript, PDVSA.
- Espinasa, Ramón (1997) "Política Petrolera y Desarrollo Económico". Manuscript, PDVSA.
- Greif, Avner; Paul Milgrom, and Barry Weingast (1994) "Coordination, Commitment, and Enforcement: The Case of the Merchant Guild," Journal of Political Economy, 102.
- Grisanti, Alejandro (1996) "Shocks Externos y Mecanismos de Estabilización para Venezuela" Manuscript, Banco Interamericano de Desarrollo.
- Haber, Stephen; Armando Razo; and Noel Maurer (2000) "Credible Commitments Under Political Instability: Institutional Theory and Historical Evidence," Manuscript, Stanford University.
- Heller, William and Mathew McCubbins (1996) "Politics, Institutions, and Outcomes: Electricity Regulation in Argentina and Chile" Journal of Policy Reform, 1, 357-388.
- Hellinger, Daniel (2000) "Nationalism, Oil Policy and the Party System in Venezuela," Manuscript, Webster University.
- Henisz, Witold (1999) "The Institutional Environment for Multinational Investment," Manuscript, The Wharton School.
- Henisz, Witold (2000) "The Institutional Environment for Infrastructure Investment" Manuscript, The Wharton School.

- Henisz, Witold and Oliver Williamson (1999) "Comparative Economic Organization –Within and Between Countries" Business and Politics. Vol. 1, No. 3.
- Henisz, Witold and Bennet Zelner (1999) "Political Risk and Infrastructure Investment" Manuscript, World Bank.
- Karl, Terry (1986). "Petroleum and Political Pacts: The Transition to Democracy in Venezuela" in Guillermo O'Donnell, Philippe Schmitter, and Laurence Whithead. Transitions from Authoritarian Rule: Latin America. Baltimore: Johns Hopkins University Press.
- Karl, Terry (1997). The Paradox of Plenty: Oil Booms and Petro-States. Berkeley: University of California Press.
- Khelil, Chakib (1995) "Fiscal Systems for Oil," Public Policy for the Private Sector, World Bank, Note # 46.
- Klein, Benjamin; Robert Crawford; and Armen Alchian. (1978) "Vertical Integration, Appropriable Quasi Rents and the Competitive Contracting Process" in The Journal of Law and Economics. pp. 297-326.
- Kornblith, Miriam (1998) Las Crisis de la Democracia. Caracas: Ediciones IESA
- Krasner, Stephen (1985) Structural Conflict: The Third World Against Global Liberalism. Berkeley: University of California Press.
- Krasner, Stephen (1999) Sovereignty: Organized Hypocrisy. Princeton, N.J.: Princeton University Press.
- Levy, Brian and Pablo Spiller (1996) Regulations, Institutions and Commitment: Comparative Studies on Telecommunications. Cambridge: Cambridge University Press.
- Lipson, Charles (1985) Standing Guard: Protecting Foreign Capital in the Nineteenth and Twentieth Centuries. Berkeley: University of California Press.
- McBeth, Brian (1983) Juan Vicente Gomez and the Oil Companies in Venezuela, 1908-1935. Cambridge: Cambridge University Press.
- Milgrom, Paul and John Roberts (1992) Economics, Organizations and Management. New Jersey: Prentice Hall.
- Mommer, Bernard (1989) La Cuestion Petrolera. Caracas, Ediciones Tropykos.
- Mommer, Bernard (1998) The New Governance of Venezuelan Oil. Oxford Institute for Energy Studies, WPM #23, April.
- Mommer, Bernard (1999) "Venezuela, Política y Petroleos," Proyecto Pobreza. Caracas: UCAB.
- Monaldi, Francisco (1997) "La Reforma Institucional del Sector Petrolero: ¿Conviene Privatizar a PDVSA?," Veneconomía Mensual.
- Monaldi, Francisco (2000) "La Economía Política del Petróleo: Los Incentivos Políticos y el Desarrollo Petrolero," Petroleo YV. #7, December.
- Monaldi, Francisco (2001) "Rent-seeking, Institutions, and Commitment: Foreign Investment in the Venezuelan Oil Industry (1992-2000)," Manuscript. Stanford University.
- Moran, Theodore, ed. (1998) Managing International Political Risk. Oxford: Blackwell.

- Moran, Theodore (1999) "Political and Regulatory Risk in Infrastructure Investment in Developing Countries" Manuscript, World Bank.
- Morse, Edward (1999) "A New Political Economy of Oil?" Journal of International Affairs, Vol. 53, #1, Fall.
- Noll, Roger (1999) "Telecommunications Reform in Developing Countries," Manuscript Stanford University.
- North, Douglass and Barry Weingast (1989) "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth Century England" Journal of Economic History, #69, pp. 803-32.
- Office of the Chief Economist. PDVSA (1998). "Marco Legal, Institucional y Fiscal del Sector Petrolero en Venezuela. PDVSA y sus Filiales," Manuscript.
- Olson, Mancur (2000) Power and Prosperity. New York: Basic Books.
- Palma, Pedro (1985) Diez Años de la Industria Petrolera Nacional: Aspectos Económicos y Financieros. Caracas, PDVSA.
- Petras, James; M. Morris; and S. Smith (1977) The Nationalization of Venezuelan Oil. New York: Praeger.
- Philip, George (1982) Oil and Politics in Latin America: Nationalist Movements and State Companies. Cambridge: Cambridge U. Press.
- Philip, George (1994) The Political Economy of International Oil. Edinburgh: Edinburgh University Press.
- Quiros Corradi, Alberto (1997) "Las Finanzas del Petróleo," Manuscript.
- Rigobon, Roberto (1992) "Subsidio Indirecto a la Gasolina" in Hausmann, R. and Rigobon, R. Gasto Publico y Distribucion del Ingreso en America Latina. Caracas, IESA-BID.
- Rodríguez, Policarpo (1974) Características y Evolución de la Inversión Petrolera en Venezuela. Caracas: UCV.
- Savedoff, William and Pablo Spiller (1999) Spilled Water: Institutional Commitment in the Provision of Water Services. Washington, DC: IADB.
- Shleifer, Andrei and Robert Vishny (1994) "Politicians and Firms." Quarterly Journal of Economics. Vol. 109, #4, November.
- Spiller, Pablo (1995) "Regulatory Commitment and Utilities Privatization: Implications for Future Comparative Research" in Jeffrey Banks and Eric Hanushek Modern Political Economy, Cambridge: Cambridge University Press.
- Spiller, Pablo and William Savedoff (1998) "Governmental Opportunism and the Performance of Public Enterprises". Manuscript, IADB.
- Summerhill, William (1998) "Market Intervention in a Backward Economy: Railway Subsidy in Brazil, 1854-1913" Economic History Review, v51, n3 (August): 542-68.
- Tugwell, Franklin (1975) The Politics of Oil in Venezuela. Stanford, CA: Stanford University Press.
- Urbaneja, Diego (1992) Pueblo y Petróleo en la Política Venezolana del Siglo XX. Caracas: CEPET.
- Van der Walt, A.J. (1999) "Reducing Regulatory Risk in Infrastructure" Manuscript, World Bank.

Vernon, Raymond (1971) Sovereignty at Bay: The Multinational Spread of U.S. Enterprises. New York: Basic Books.

Vernon, Raymond (1977) Storm over Multinationals. Cambridge: Harvard U. Press.

Villalba, Julian. (1996). "Las Finanzas de PDVSA". in Debates IESA: El Negocio Petrolero. Caracas: Ediciones IESA.

Waelde, Thomas (1999) "International Treaties and Regulatory Risk," Manuscript, World Bank.

Wells, Louis (1999) "Private Foreign Investment in Infrastructure," Manuscript, World Bank.

Weingast, Barry (1997) "The Political Foundations of Limited Government: Parliament and Sovereign Debt in 17th and 18th Century England," in The Frontiers of the New Institutional Economics. Academic Press.

Weingast, Barry (1997b) "The Political Foundations on Democracy and the Rule of Law" American Political Science Review, v91, n2 (June): 245-63.

Williamson, Oliver (1996). The Mechanisms of Governance. Oxford: Oxford University Press.

Yergin, Daniel (1992) The Prize: The Epic Quest for Oil, Money and Power. Touchstone.

Zelner, Bennet and Witold Henisz (2000a) "Political Constraints, Interest Group Competition and Infrastructure Investment in the Electric Utility Industry," Manuscript, Wharton School.

Zelner, Bennet and Witold Henisz (2000b) "Politics and Infrastructure Investment," Manuscript, The Wharton School.

Zelner, Bennet and Witold Henisz (2000c) "The Institutional Environment for Telecommunications Investment," Manuscript, The Wharton School.

Appendix. Venezuelan Oil Industry Figures 1938-1990

	Oil Production (Million Barrels)	Capital Stock (Millions of 1984 Bolivars)	Rate of Growth of Capital Stock	Oil Fiscal Revenue (Billion of US\$98)
1938	188.04	23,513.65	12.02%	0.084
1939	204.53	25,380.69	7.94%	0.088
1940	183.83	25,685.56	1.20%	0.088
1941	226.78	26,010.81	1.27%	0.107
1942	148.15	25,442.47	-2.18%	0.089
1943	179.38	25,506.54	0.25%	0.074
1944	257.037	26,934.65	5.60%	0.512
1945	323.4	30,251.48	12.31%	0.724
1946	388.47	35,503.77	17.36%	0.925
1947	434.9	43,332.36	22.05%	1.258
1948	490	52,065.36	20.15%	1.613
1949	482	58,768.80	12.88%	1.577
1950	546	59,596.17	1.41%	1.142
1951	622	60,708.67	1.87%	1.795
1952	660	63,630.21	4.81%	1.894
1953	644	65,662.33	3.19%	2.020
1954	691	67,688.08	3.09%	1.712
1955	787	69,183.82	2.21%	2.186
1956	899	72,380.12	4.62%	3.237
1957	1014	79,001.93	9.15%	3.924
1958	951	84,972.58	7.56%	3.147
1959	1011	86,666.87	1.99%	3.745
1960	1041	84,751.71	-2.21%	3.426
1961	1065	81,493.06	-3.84%	3.668
1962	1167	77,718.67	-4.63%	3.598
1963	1185	74,029.65	-4.75%	3.985
1964	1241	71,357.11	-3.61%	4.021
1965	1267	68,675.57	-3.76%	3.987
1966	1230	65,082.09	-5.23%	4.022
1967	1292	61,490.51	-5.52%	4.552
1968	1319	60,402.59	-1.77%	4.544
1969	1311	61,016.51	1.02%	4.125
1970	1353	60,303.12	-1.17%	4.104
1971	1295	59,495.88	-1.34%	5.286
1972	1178	57,557.43	-3.26%	5.346
1973	1228	55,895.56	-2.89%	6.879
1974	1086	56,325.04	0.77%	18.833
1975	856	53,934.71	-4.24%	14.737
1976	839	51,687.51	-4.17%	12.550
1977	816	51,075.86	-1.18%	12.637
1978	790	53,420.34	4.59%	10.142
1979	860	57,946.76	8.47%	12.032
1980	793	65,368.02	12.81%	14.806
1981	769	75,780.46	15.93%	21.348
1982	691	89,051.65	17.51%	14.504
1983	657	96,332.34	8.18%	9.921
1984	659	99,294.62	3.08%	11.303
1985	613	100,990.01	1.71%	10.507
1986	653	104,341.00	3.32%	6.333
1987	664	104,825.73	0.46%	6.344
1988	696	106,524.76	1.62%	5.901
1989	696	112,368.98	5.49%	7.735
1990	779.8	124,488.69	10.79%	10.352

¹ It is important to differentiate the appropriable quasi-rents from the monopolistic and differential rents that are significant in oil extraction. Monopolistic rents arise when a monopoly or cartel restricts output below the competitive level. Differential rents arise from the difference between the low extraction costs in some producer areas (e.g. Saudi Arabia) and the higher costs in the marginal producer areas (e.g. Texas). The government can extract both types of rents without expropriating sunk-assets or deterring investment (see discussion about oil industry at the end of this section).

² Another example is the transference of quasi-rents to the workers of the expropriated industry by forcing increases in wages significantly above their long run opportunity cost.

³ For example, a decline in output could hurt key constituents in the upstream and downstream sectors tied to the project. It could also negatively impact a significant number of consumers if the good or service is widely consumed or hurt workers if there is a loss in employment.

⁴ Authorities can also face *indirect cost* if the investors that are being expropriated are politically significant. There is some evidence that authorities tend to expropriate more often foreign investors than well-connected domestic investors (Summerhill, 1998; Noll, 1999; Moran, 1999). Additionally, this type of cost may be higher if ownership of the investment is widely distributed among political constituents. In fact, privatization with wide distribution of shares has been used as a commitment device (Monaldi, 1997; Moran, 1999; Savedoff and Spiller, 1999).

⁵ 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.

⁶ The recent case of Enron's forced renegotiation in India is one example (Moran, 1998; Wells, 1999).

⁷ As explained in a previous note, *indirect costs* might arise from hurting powerful political constituencies when extracting quasi-rents. Such costs are low when the sector's investors and management are not powerful political constituents. For example, if the Executive appoints the industry's management, as in some state owned enterprises, this type of cost tends to be low. Also this type of cost tends to be low, if investors do not represent a large number of constituents, or if investors are foreign and have no access to the domestic political authorities.

⁸ Lipson also argues that in many industries the existence of international oligopolies helped to complement or even sometimes substitute hegemonic enforcement

⁹ Own calculations based on data from Krasner, 1985, p. 184.

¹⁰ In the last two decades, despite the signature of a significant number of bilateral and multilateral investment treaties, international law has not proven to be a very effective mechanism of deterrence against revenue expropriation (Waelde, 1999; Moran, 1998). 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 hardly enforceable (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.

¹¹ 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).

¹² 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").

¹³ 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).

¹⁴ Investors can try to mitigate political risks using insurance and other risk mitigation strategies. Insurance against the most open forms of expropriation 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 described previously in this paper). In any case, risk mitigation can be costly. Its benefits in terms of risk reduction have to be weighted by its costs.

¹⁵ 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).

¹⁶ In the institutional economics literature the classic solution to the problem of quasi-rent extraction due to asset specificity is vertical integration (Williamson, 1996). High sunken costs are a case of the more general problem 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). 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. Nevertheless, on closer scrutiny, the analogy to 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).

¹⁷ 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, 1999; Shleifer and Vishny, 1994).

¹⁸ Legal ownership of oil reservoirs is not a necessary condition for revenue extraction, tax and regulatory sovereignty suffices.

¹⁹ 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 risk). Theoretically, oil exporters can create stabilization funds and diversify, but in reality that has not been the case for reasons that are beyond the scope of this paper. Therefore, oil income volatility can increase the discount rate of politicians and therefore the incentives for expropriation.

²⁰ In 1936 it was 26% in 1939 it reached 39% (Source: Office of the Chief Economist, PDVSA and own calculations).

²¹ Source: Office of the Chief Economist, PDVSA and own calculations

²² The alternative of state ownership appears to have been very difficult at this time. The Mexican Nationalization of 1938 showed the difficulties for sustaining investment with state ownership. Lack of human capital and technology were barriers to nationalization although not insurmountable (Philip, 1982).

²³ 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 (Espinasa, 1995). Nevertheless, this was probably more an elegant way of government retraction than a symptom of judicial independence.

²⁴ After Gomez 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).

²⁵ 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). Perez Jimenez maintained the application of this surcharge tax.

²⁶ 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).

²⁷ 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.

²⁸ Partly in retaliation against the decree the US government eliminated the preferences given to Venezuelan oil, putting Canada at a relative advantage (Hellinger, 2000).

²⁹ Quoted by Tugwell, 1975: p. 106. Venezuelan edition. Monte Avila Editores, 1975.

³⁰ Caldera's oil policy contemplated a new institutional arrangement to attract new investments to the oil sector. The "operational service contracts" 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 and at that point did not guarantee any rights to investors. The idea was to establish joint ventures between the state-owned oil company, CVP, and foreign investors. The foreign oil company would operate as a "service contractor" signing a private contract with CVP. Risks were shared and the state participation was contractually enforceable (in Venezuelan courts). The opposition in Congress was reluctant to approved 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 be credible. In the end after many negotiations a few contracts were signed in 1971 and the signing bonuses totaled \$21 million. The contracts were not very successful and ended with nationalization 4 years later (Tugwell, 1975; Mommer, 1998).

³¹ Adelman (1995) analysis of Middle East oil exporters concludes that all their actions in this period pointed towards maximizing short-term oil revenues.

³² By 1985 Venezuelan oil production was less than half what it had been in 1970. When the oil price collapsed in the 1980's

³³ The rise of sovereignty is not a sufficient condition for expropriation. There has been a significant variation in the level of expropriation across sectors (e.g. textile and high technology sectors were rarely the subject of expropriation in Latin America, the domestically owned electric industry in Venezuela was not expropriated) and across sovereign countries (e.g. in many developed countries the oil industry was never nationalized). Moreover, in many countries, the nationalized oil companies were revenue-expropriated in different periods (e.g. Mexico, Argentina, Peru).

³⁴ According to Mommer (1998), as a result of this episode PDVSA's management started "hiding" profits from the government pushing the "internationalization" strategy. In the 80's and early 90's PDVSA made very large investments in refineries and distribution channels in the US and Europe. These investments were typically done in exchange for oil, rather than cash, which permitted the diversion of profits before they had to be handed to the government. PDVSA wholly owns CITGO, one of the largest gasoline distributors in the U.S., and six U.S. refineries. It also has refineries and distribution in Germany, in association with Veba Oel, and in the Scandinavian countries.