# THE FUTURE OF OIL IN MEXICO

/ EL FUTURO DEL SECTOR PETROLERO EN MÉXICO

## Oil Policy Reform in Resource Nationalist States: Lessons for Mexico

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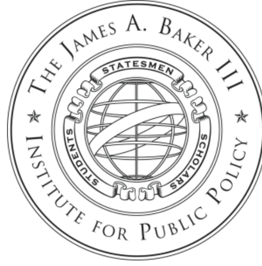


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The energy industry plays an important role in the Mexican economy, and energy trade is a major component to the U.S.-Mexico relationship. The Mexican government relies on the oil industry for 35 percent of total government revenues, including taxes and direct payments from Petróleos Mexicanos (Pemex), the state oil company. Mexico is the third-largest foreign crude oil supplier to the United States. However, with declining production and rising demand, Mexico could become a net oil importer in the coming decade. President Calderón pushed for energy sector reform in Mexico, but more reforms will be needed for Mexico to reverse its current path toward importer status. This study identifies the dynamics of the political trends in Mexico that will impact future energy policy. The aim of this study is to promote a better understanding of the challenges facing Mexico's oil sector and to enhance the debate among policymakers, the media and industry on these important issues.

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Much of the debate about energy reform in Mexico, both among foreign and national scholars, starts with the assumptions about the unique history of Mexico's oil industry. The Mexican government nationalized foreign oil companies in 1938 to regain control of the industry for the Mexican people and created a national oil company (NOC) with a monopoly over the industry to deliver that benefit. Because of this nationalist story and its identification with the Mexican Revolution embodied in the administration of President Lázaro Cárdenas (1934-1940), many argue that significant reform of the sector today is virtually impossible. Even the modest reforms of 2008 proved to be very controversial and limited.[1] Consequently, reformers and those who would like to participate in the Mexican oil sector—whether private companies or the NOCs of other nations—must live with these restrictions.

Fortunately, this interpretation is both incomplete and misleading, and this paper seeks to demonstrate that there are a number of viable options for reform in Mexico. None of these possibilities entails abandoning resource nationalism, which I view as a given in Mexico's near future. But, if we highlight the resource nationalism and energy security goals of a nationalist government—and recognize that neither goal is an absolute—a number of combinations of both issues become important considerations for discussions and debates about oil sector reform in resource nationalist states.

The first section of this paper clarifies two key concepts that dominate the debate on energy reform: resource nationalism and energy security. Some of the debate about reforming Mexico's oil sector is influenced by loose and ambiguous rhetoric about these important concepts (e.g., permitting Pemex to enter into joint ventures represents loss of national control, the Pemex monopoly benefits Mexico, etc.). Understanding the complexity of the concepts should help make alternative, though previously discarded, combinations of resource nationalism and energy security viable.

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[1] David R. Mares, "Energy Cooperation and Security in the Hemisphere: Mexican Challenges and Opportunities" Center for Hemispheric Policy, University of Miami, January 2009 http://www.miami.edu/index.php/chp/task_force_policy_papers/energy_cooperation_and_security_in_the_hemisphere_task_force_policy_papers/.

The second section is historical and broadly comparative. By examining the historical record, we discover that other hydrocarbon-producing countries in Latin America have, at times, been more nationalist in their hydrocarbon sectors than Mexico, even prior to Mexico's nationalization of oil companies in 1938. Yet these countries, at some point, were able to make the kinds of reforms that Mexico has avoided. In addition, we can see that Mexico's oil policy has not been as extremely nationalist in the past as the contemporary debate might suggest.

The third section of the paper focuses on two cases—Brazil and Venezuela—to examine the political economy of reform in resource nationalist countries. These two countries are particularly relevant to understanding the potential for reform of the oil sector in Mexico because both are natural resource-rich countries in which resource nationalism plays a fundamental role in energy policymaking. They are also countries in which concerns over energy security often compete with the goals of resource nationalism. Other Latin American countries offer some parallels but are ultimately less useful as a comparison to Mexico. For example, Bolivia and Ecuador are resource-rich countries with heavy doses of nationalism but, in these two countries, the process of creating a "plurinational" nation incorporating indigenous communities, where many of the natural resources are found, complicates energy policymaking in ways that are less relevant to Mexico. Colombia and Peru have important hydrocarbon reserves, but neither is as resource rich as Mexico, and resource nationalism has played a limited role in the past few decades.[2]

The final section offers some lessons for Mexican energy reformers based upon the country's own history, as well as the experiences of a current major oil exporter (Venezuela) and a future major exporter (Brazil).

[2] The resource nationalism and energy security debates lost influence among policymakers in both countries in the 1990s and increased private investment produced important oil and gas discoveries. While there are increasing pressures in both countries to change, they have yet to alter policy and thus, both because of their levels of reserves and the nature of their policies over the last 20 years, they are of less relevance to the discussion in Mexico today. I thank Jeremy Martin of the Institute for the Americas for raising the issue.

## I. Key Concepts

*Resource Nationalism*

The core idea behind a resource nationalism (RN) perspective is that the natural resources in the ground or under the sea are a "national patrimony" and, consequently, should be used for the benefit of the nation, rather than for private gain. This argument presumes that the natural resources have an intrinsic value, rather than one determined by the market, and this value belongs to the nation.[3] Resource nationalism is, thus, not simply a means by which government leaders might enrich themselves and their cronies by selling the resource, nor is it specific to the political left or right. The goal of RN is to maximize rent appropriation for the benefit of national development. This is accomplished by the central government setting the terms for the exploration, production, transportation, and distribution of energy. A separate question, though linked to the issue of rent distribution, is who should extract the resource—a public national firm, a firm not affiliated with the government (domestic private, foreign private, or foreign public), or both in some type of partnership.

In theory, rents can be completely appropriated by a government owning the natural resource without affecting production since rents are considered "super profits."[4] But in practice, the fiscal tools available (royalties, income, and other taxes) always leave rents with non-government owned producers when price volatility abounds.[5] It is worth noting, however, that resource nationalists have proven quite willing to accept the appropriation of natural resource rents for private gain in the case of labor unions, consumers, and national politicians rewarding their constituencies. When unions, consumer groups and politicians compel producers (even if they are NOCs) to pay above-labor market compensation, provide the natural resource at below-market prices (e.g., gasoline, heating oil, electricity), or fund development projects with little

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[3] cf. "Nota No. 3760. La izquierda mexicana está unida en la defensa del petróleo nacional: Sandoval," Fundar: Centro de Análisis e Investigación, http://www.fundar.org.mx/c_e/notas.htm.

[4] . Rents are calculated in one of two ways: returns above the level that would accrue in a perfectly competitive market (monopoly rents) or above those earned in the next most profitable use for that investment (quasi-rents); in the contemporary era rents in the oil and gas industry are produced both ways. Osmel Manzano and Francisco Monaldi, "The Political Economy of Oil Production in Latin America" *Economia* Fall 2008 p. 62; Benjamin Klein, Robert G. Crawford and Armen A. Alchian, "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process" *Journal of Law and Economics* 21:2 1978 pp. 297-326.

[5] Osmel Manzano and Francisco Monaldi, "The Political Economy of Oil Production in Latin America," *Economía,* Fall 2008.

public benefit, they, too are appropriating rents for private purpose. Some examples are the Mexican oil workers union, middle-class automobile drivers in Venezuela, and gas-generated heating of Argentine middle-class homes. It would be far more efficient to target subsidies and welfare benefits to provide public goods and to help the poor.[6]

The question of who should extract and market the resource has two variants.[7] The dominant variant is the public-private divide and the secondary is the foreign-national private investor issue. Because private companies must generate profits in order to survive in a competitive marketplace or to please their owners, only a state-owned enterprise (SOE) could be committed to exploiting the resources with national interests upmost in mind. Because SOEs are separate organizations from the government, and because government officials have private, as well as public interests, such a public goods focus is not guaranteed for SOEs.

Resource nationalists are concerned with the prices at which the commodities might be sold, as well as their rate of exploitation. Today resource nationalists seek to avoid depleting reserves too quickly for the benefit of foreign consumers, but in the middle of the 20th century, the concern was essentially the opposite: that the international oil companies (IOC) had failed to fully exploit many Latin American oilfields because Venezuelan and Middle Eastern production was cheaper. Governments and citizens viewed this as a lost opportunity to gain foreign exchange, as well as disadvantageous. The country had to import oil and petroleum products using scarce foreign exchange, thereby making it more costly to subsidize industrial development.

The issue of rent distribution also influences the public-private debate. Since rents can be appropriated through various forms of taxation of private enterprises, or more directly by having an SOE involved in the production and distribution of the resource, resource nationalists could

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[6] International Monetary Fund, "Fuel and Food Price Subsidies: Issues and Reform Options," September 8, 2008, http://www.imf.org/external/np/pp/eng/2008/090808a.pdf.

[7] A number of analysts have written about the economics and politics of resource nationalism; cf. Macartan Humphreys, Jeffrey D. Sachs, and Joseph E. Stiglitz, eds., *Escaping the Resource Curse* (New York: Columbia University Press, 2007); Osmel Manzano and Francisco Monaldi, "The Political Economy of Oil Production in Latin America," *Economía* Fall 2008; Thad Dunning, *Crude Democracy: Natural Resource Wealth and Political Regimes* (Cambridge: Cambridge University Press, 2008); and Pauline Jones Luong and Erika Weinthal, *Oil is Not a Curse* (New York: Cambridge University Press, 2010). My understanding of the politics differs from theirs in that I begin by evaluating the meaning of the concept of resource nationalism and energy security to citizens and policymakers and proceed from that point.

favor either. Each mechanism has its own advantages and disadvantages. Taxes on private enterprises could be set at levels that still provide incentives for efficient upstream and downstream operations, but private companies have information asymmetries that could result in the government appropriating less rent than expected. Businesses know more about the actual costs of a business than the government does because they run it; thus the government can be deceived into believing that the company is making less profit, thereby lowering the tax total. If the state sets up its own NOC, it can theoretically appropriate all the rents, but the reality is that NOCs are less efficient than private firms, so the state loses out via this route. Resource nationalists who prefer the NOC route to rent appropriation can be usefully characterized as "statists" because they prefer to err on the side of excessive government intervention, while those who promote more effective government regulation of private companies to capture those rents are best identified as "reformers." In Latin America, those who believe that markets should function with minimal government oversight are identified as "neo-Liberals." Among the region's nations with energy surpluses today, only Colombia and Peru fall into this category. Among Latin America resource nationalist countries today, only Mexico insists on a state monopoly, and that monopoly is enshrined in the Mexican Constitution and the legislation nationalizing the oil industry in 1938. The other major Latin American countries opened up their oil and gas sectors to private investment to varying degrees and at different points, even modifying their constitutions in the process. (See section "Some Historical Coordinates" on page 19.)

Since not all resource nationalists believe that the state should have a monopoly in the oil sector, it is possible to create a continuum along which the responsibility for creating value ranges from "Total Government" to "Total Private Sector." In between are the various types of contractual arrangements between governments and private investors in the areas of production, transportation (pipelines and even tanker trucks), distribution, secondary production (gasoline and other petroleum derivatives, petrochemicals, and power generation), and retail.

Once a country has decided to open its oil and gas sector to private investment, some resource nationalists seek to favor national investors, while others fear creating a powerful domestic interest group. Part of the reasoning for favoring domestic, or national, private oil companies

follows the preference for national capital in sectors deemed "strategic" under ISI development paradigms: through these restrictions the government is expected to help create a national industrial capitalist class. In recognition that few national capitalists have the capital, skills, or know-how to invest in these opportunities, governments might permit foreigners a limited role, restricted to partnerships with private national companies. Nevertheless, the limitations of this path for promoting a broad-based national development have been well documented[8] and contributed to the backlash against privatization after 2001.

Two efforts of note aimed at broadening private capital participating in SOEs so as to benefit the "average" or poor citizen were developed in Bolivia and Mexico. The government of Gonzalo Sánchez de Lozada, while not a proponent of traditional resource nationalism, recognized the difficulty of gaining popular approval for opening the oil and gas sector to private investment. Consequently, when the government sold 51% of the shares of its national oil company, Yacimientos Petrolíferos Fiscales Bolivianos (YPFB), as well as those of a number of other SOEs to the private sector, it distributed the remaining shares to private pension funds. This step created domestic beneficiaries (pensioners) and established the groundwork for a national capital market. The goal was to create market supporters and to convince average Bolivians that they would benefit directly from the new policy once they reached retirement age. In Mexico, the government of Felipe Calderón would have preferred to reject resource nationalism but could not, and therefore proposed a more politically expedient strategy to limit private participation in Pemex to Mexican citizens who purchase low-cost (100 peso) bonds. This policy might raise some capital if the Secretariat of Hacienda finds a way to implement it, but more importantly is a way to convince the average Mexican that he should be more concerned about Pemex's performance, rather than ownership. (As we will see on page 19, the idea of Mexicans buying into the NOC is not new, with shares having been unsuccessfully offered to the public in 1934.)

Table 1 indentifies the components that can be used to evaluate the degree of resource nationalism in a country's energy policy.

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[8] James M. Cypher, "The Slow Death of the Washington Consensus on Latin America" *Latin American Perspectives* 25, no. 6 (1998): 47-51; Peter Kingstone, "After the Washington Consensus: The Limits to Democratization and Development in Latin America" *Latin American Research Review* 41 no. 1 (2006): 153-164.

**Table 1. Coordinates of Resource Nationalism**

| Ownership of Resource | Exploration (Expense) | Production (Rent Distribution) | Transportation (Rent Distribution) | Distribution (Rent Distribution) | Identity of Actors (Public / Public non-national / Private) |
|---|---|---|---|---|---|

Resource nationalists pursue lofty goals and that is their attraction to people who feel exploited by markets. But the fundamental error made by resource nationalists is one of putting the cart before the horse. Their underlying concern is how to use rents to promote national development; in pursuing that agenda, they focus on the absolute level of money appropriated by the government. Unfortunately, a government that appropriates a greater percentage of natural resource rents and spends it inefficiently promotes national development far less than a government that appropriates a lower share but invests it wisely. The question that really should be driving resource nationalists is how to translate the rents appropriated into effective benefits for the nation.

*Energy Security*

"Energy security" (ES) embodies a claim for government action to protect national economic activity and citizens from shocks emanating from the international market or, in the case of nationally controlled domestic production, a decline in proven reserves or production activities. Adjustment to a price shock or reduced/erratic supply from the international market could be market-based: decreased use of this resource via increased efficiency or reduced activity and a search for alternative sources of energy. The time required, as well as the difficulty of increasing efficiency and developing alternatives, creates adjustment costs that are not simply economic, but also include social dislocation as jobs, consumption, and investment. In addition, political realignment, or even upheaval pursuant to a major social and economic adjustment process, is also a source of concern to governments and their constituencies. Therefore, the usual response to the external shock is not to let the market determine adjustment, but to adopt public policies to mitigate at least some of the costs while market adjustment unfolds.

The defense of the domestic economy can be pursued via government regulation of private companies or consumers in national energy markets or through direct state provision of energy at subsidized prices. In either case, the policy goal of energy security implies subordination of other policy goals (e.g., production of food, environmental protection, or increased competitiveness of the national economy in world trade) to a more aggressive pursuit of domestic supplies, price controls, and trade restrictions. In the U.S., for example, in the name of "energy security" we subsidize the domestic production of corn-based ethanol and have high tariffs on the import of more efficient sugar cane-based ethanol.

While the concept of energy security first came to the fore for the U.S. and Western Europe after the Arab oil embargo of 1973, it is an old concern in Latin America. Even in the 1920s, the major countries in the region were concerned about how markets and powerful countries could influence the supply and price of oil. As the international market began to shift into surplus in the late 1920s and the major oil companies colluded among themselves to protect market share, the IOCs' production in high-cost Latin America (Venezuela was the only low-cost producer) declined. These countries had to use scarce foreign exchange to meet domestic demand for crude or petroleum products at high, oligopolistic prices. In addition, the US and British governments used access to loans (e.g., Colombia in the 1920s), the potential to let rebels purchase arms (e.g., Mexico and Colombia in the 1920s), and diplomatic sanctions (e.g., the British against Mexico after the 1938 nationalizations) to pressure Latin American governments to accept their countries' role in the global business plans of the major oil companies.

The argument about the opportunity costs of producing, rather than importing, your own high-cost oil holds little sway with people concerned about energy security. Producing oil at home is seen as a means of generating employment, subsidizing industrial development, and diminishing the threat of the US or British governments and their companies using access to oil to influence the policies of all Latin American countries.[9] The expectation is that sovereignty and national development would more than justify the need to pay more for oil and petroleum products. In

[9] In addition to the historical examples in the prior paragraph, consider the U.S. embargo on Cuba, which includes oil and related technology. Jens Erik Gould, "Cuba Would Welcome U.S. Oil Companies if Embargo Ends (Update 2)," *Bloomberg*, April 3, 2009, accessed September 28, 2009, www.bloomberg.com/apps/news?pid=20601103&sid=aSIKErkORLLA&refer=us#.

this sense, the focus on energy security was one of the early harbingers of the import-substitution industrialization strategies that virtually all Latin American countries pursued to varying degrees from the 1930s to the 1980s.[10]

There are concerns today in a number of countries about whether national reserves of oil and gas will be available in the future, and about the negative environmental impact of hydrocarbon production. Both views give weight to the idea of conserving energy production in the name of national energy security. The conservation issue overlaps with concerns about whether resources should flow to foreign or domestic markets. A more radicalized perspective distinguishes between domestic markets for the elites and the "people."

The perception of the foreign versus domestic market as an energy security issue can be a particularly relevant issue in countries with many poor who cannot pay the price set by the international market. It is possible that a country could seek to export as much of its energy resources as possible in order to maximize rent appropriation and invest in public goods for the benefit of the nation. In reality, though, critics argue that exports generate rents that elites use to maintain a polarized social structure that permits them to accumulate political and economic power. Hence, these "pro-poor nationalists" want the resource distributed at home first to meet the needs of the people at the bottom of the social scale.

Despite the tendency of scholars, policymakers, and the media to focus on the tension between resource nationalism and energy security, the relationship is not inherently incompatible. Indeed, countries that are both importers and exporters of energy have simultaneously pursued resource nationalism and energy security. Some states that are primarily importers, but have limited domestic resources and production (e.g., Brazil 1938-2006 and Chile 1928-1975), might be very apprehensive about the distribution of rents associated with those resources, while at the same time being concerned about their ability to import a sufficient supply of oil and gas. Exporters of a resource might be focused on supplying the domestic market even while seeking to increase exports at international market rates, as in the case of Bolivia post-2003.

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[10] Sebastian Edwards, *Crisis and Reform in Latin America* (New York: Oxford University Press for the World Bank, 1995). The effort was an attempt to promote industrialization by raising import barriers for manufactured products, thereby creating a captive local market and high enough profits to attract investment into factories.

Nevertheless, under certain circumstances, a producing country pursuing ES via cheap domestic energy can undermine RN. By lowering the profitability of the industry to the point that i) reserves are depleted ii) no new exploration is undertaken by private firms and iii) the NOC is too inefficient and unskilled to pursue the requisite exploration and production, a country could find itself in the position of having to offer relatively high rents to private companies and other countries' NOCs to increase reserves and production. On the other hand, pursuing RN can undermine ES by diminishing private investment and giving more control to a less effective NOC, resulting in decreased productive capacity and ultimately supply shortages. At the international level, the pursuit of ES by importing countries can fuel short-term strategies by producing countries (RN) to capture more rents now before alternative sources of energy can be adopted on a large scale. And, of course, large doses of RN in exporting countries can fuel increased efforts at ES in importing countries. Yet moderate levels of RN and ES can work together by creating a stable level of political support in producing countries to export and convincing publics in importing countries that oil and gas are scarce resources with high values whose use should be more efficient.

The variation in energy policies across time can be appreciated with a few examples. Contemporary Mexico illustrates the case of an oil policy that maximizes resource nationalism with little energy security. Maintain a monopoly for Pemex, but i) do not provide the NOC with the autonomy and capital necessary for raising its overall efficiency nor its capacity for deep water exploration and production at rates that will help the country grow at levels that would generate the necessary jobs and opportunities for its population and ii) import gasoline at market prices while subsidizing its costs to consumers, thereby creating fiscal imbalances that then result in policy pressures to lower subsidies, which result in a shock at the pump to consumers.[11] In 1980, by contrast, the country's energy policy scored high on both fronts. Pemex had a monopoly and the ability to produce from the low-cost Cantarell field, and the government chose to limit oil exports to ensure a domestic supply and conserve its resources for the future. Chile in 1975 adopted an energy policy with moderately low RN and very low ES. The country's NOC, Empresa Nacional de Petroleo or ENAP, operates in a competitive market, and Chile imports all

[11] Andres R. Martinez and Jens Erik Gould, "Mexico to Raise Gasoline Price to Market Rate by 2010 (Update 2)," *Bloomberg,* September 9, 2008.

of its oil, which is sold at market prices. The same year, Brazil reduced its focus on RN that had dominated policy since the establishment of a monopoly for Petrobras in 1953, by permitting risk contracts with private firms as part of its drive for ES. In 1997, citing the same concerns about ES, Petrobras was partially privatized, joint ventures with other companies were permitted, and the NOC monopoly on imports was terminated, further diminishing RN. The combination of muted resource nationalism with energy security is illustrated by Argentina in 1991. Under the leadership of Carlos Menem (1989-1999), who favored complete market adjustment for exports and the domestic market, the government passed legislation to privatize Yacimientos Petrolíferos Fiscales (YPF), Argentina's NOC.

## II. Some Historical Coordinates

Nationalization refers to state control and can apply at the level of a firm, a field, or an entire industry. Mexico was not the first company to nationalize foreign oil companies following clashes over control of the production rates of national fields and distribution of rents. Bolivia nationalized Standard Oil of New Jersey in 1937 in a dispute that included charges that the oil company had provoked the bloody Chaco War (1932-1935) during which more than 50,000 Bolivians died. Despite the nationalizations of the major foreign oil companies, and contrary to popular perception, a few small independent producers remained in Mexico until at least 1950.[12] Pemex was also not the first national oil company created in the name of promoting the oil sector for the development of the nation. Argentina created YPF in 1922, and Bolivia had its own YPFB in 1936. Even Mexico created an NOC, Petromex, in 1934 to be subscribed 50-50 by government and Mexican private investors, but few national investors were attracted to the firm and the company was disbanded in 1937. NOC monopolies have come and gone in very nationalist countries and governments. Bolivia's revolutionary party (Movimiento Nacionalista Revolucionario or MNR) promulgated a new oil law in 1955 that opened the sector to private investment[13] a short three years after nationalization of tin, the country's other major natural

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[12] J. Richard Powell, *The Mexican Petroleum Industry 1938-1950* (Berkeley: University of California Press, 1956), 58.

[13] George Philip, *Oil and Politics in Latin America: Nationalist Movements and State Companies* (Cambridge: Cambridge University Press, 1982), 266, 454-460; Peter DeShazo, "Bolivia," in *Energy Cooperation in the Western Hemisphere: Benefits and Impediments*, ed. Sidney Weintraub (Washington, D.C.: Center for Strategic and International Studies, 2007), 341.

resource. Chile's NOC ENAP was created in1950 and given a complete monopoly on exploration, development, and refining. In the 1960s, the government spurned offers by Shell and Esso to buy shares in a refinery, though it was happy to permit private participation in the new petrochemical industry.[14]

Table 2 demonstrates the broad range of experience in Latin America with the nationalization of the oil sector in terms of five characteristics. The dates of nationalizations permit us to refer to four waves: the 1930s, 1950s to 1960s, 1970s, and 2000s. The process by which nationalization was carried out varies across expropriation, expiration of the original contract, forced contract renegotiations, and declaration that all unexplored areas are reserved for state control. Terms of the nationalizations vary from monopoly control to majority ownership and can be applied upstream and downstream. Democratic and authoritarian governments have both undertaken nationalizations. A final column examines when nationalizations were reversed.

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[14] Philip, *Oil and Politics in Latin America*, 190, 93, 98.

**Table 2. Oil Nationalizations in Latin America**

| Country | Timing | Process* | Terms**/*** | Political Regime | Reversed |
|---|---|---|---|---|---|
| | | | In Oil Sector | | |
| Argentina | 1935/1936 | U/FCR | P/A | Democratic/Democratic | 1940s, 1950s |
| Bolivia | 1937/1969<br>2005<br>2006 | X/X<br>X<br>FCR | P/E,PR & M/R,M<br>M (Wellhead)<br>P/E,PR | Authoritarian/<br>Authoritarian<br>Democratic<br>Democratic | 1955 |
| Brazil | 1953/1964<br>2010 | U/X<br>U | M(Exploration and Production)/R<br>P/E, PR Strategic Zones | Democratic/Democratic<br>Democratic | 1975/1964 |
| Chile | 1934/1950 | X/U | M/PR, R & P/E,M | Democratic/Democratic | 1975 |
| Colombia | 1979 | FCR | P/A | Democratic | 1983 |
| Ecuador | 1972<br>2008 | FCR<br>FCR | P/A<br>P/E, PR | Authoritarian<br>Democratic | 1978 |
| Mexico | 1938 | X | M/A<br>Except for a few small independent producers to 1950 | Authoritarian | (1995 Partial for gas only) |
| Peru | 1968<br>1971 | X<br>U | IPC Company Only<br>P/A | Authoritarian<br>Authoritarian | 1991-1993 |
| Venezuela | 1976<br><br>2006<br>2009 | X[a]<br><br>FCR<br>X | M/A<br><br>P/E,PR Orinoco<br>Service Companies | Democratic<br><br>Democratic<br>Democratic | 1990s for extra heavy oil only |

*(U)nexplored areas; (C)oncession expiration; e(X)propriation; FCR forced contract renegotiation

**(M)onopoly; (P)articipation

***(A)ll or (E)xploration, (PR)roduction, (R)efining, (M)arketing

[a]. Venezuelan concessions were set to expire in 1983.

Sources: Philip, p. 482 & *passim*; John D. Wirth, ed., *Latin American Oil Companies and the Politics of Energy,* Lincoln: University of Nebraska Press, 1985 *passim*; Powell, *Mexican Petroleum Industry* p. 58; newspapers

Looking more closely at Mexico, we find that the nationalization of the hydrocarbon sector in 1938 has been modified over time. Marketing was not initially part of Pemex' monopoly, and only passed to the NOC in 1940. The 1941 Mexican Petroleum Law gave the Ministry of the Economy authority to permit private companies in downstream operations and granted monopoly in basic petrochemicals—foreign investments in secondary petrochemicals were limited to 40% in any venture.[15] In 1947, the Mexican government offered service contracts for exploration and production, with an option to purchase discovered oil at below market prices.[16] In 1986 and 1992, major reforms in secondary and tertiary petrochemicals were carried out to increase private participation in these areas. In 1995, the natural gas sector was reformed to permit service contracts and private transportation, storage, and distribution. An important part of these reforms entailed distinguishing between what was fundamental to the nationalization of these resources—and what could be handled at arm's length without undermining resource nationalism's goal that the resources be used for the benefit of national development.

It is also useful to note that in Latin America, nationalization does not imply creating an NOC, nor does having an NOC imply nationalization. History once again illustrates significant variations over time within and across countries (Table 3).

[15] Esperanza Duran, "Pemex: The Trajectory of a National Oil Policy," in *Latin American Oil Companies*, ed. John D. Wirth, 178-179; Philip, *Oil and Politics in Latin America,* 330-331.
[16] Powell, *The Mexican Petroleum Industry*, 66, 194.

**Table 3**. **NOC and Nationalization**

| Country | NOC Created | Dates of Nationalizations | No Nationalization with NOC |
|---|---|---|---|
| | | | |
| Argentina YPF | (1907*) 1922 | 1910, 1935 | Multiple back & forth to 1993 |
| Argentina ENARSA | 2004 | --- | 2004-present |
| Bolivia | 1936 (2006***) | 1937, 1969, 2006 | 1955-1969; 1972-1997 |
| Brazil | 1953 | 1953 | 1953-1964 for existing contracts; 1997-present |
| Brazil | | 2010* | |
| Chile | 1950 | 1932 | 1975-present |
| Colombia | 1951 | 1979 | 1951-1979; 2003-present |
| Ecuador CEPE | 1972 | 1976 | 1972-1976 |
| Ecuador Petroecuador | 1989 | 2006 | 1993-2010 |
| Mexico Petromex | (1925**) 1934 | --- | 1934-1937 |
| Mexico Pemex | 1938 | 1938 | Not Yet |
| Peru EPF | (1934**) 1946 | | 1934-1968 |
| Peru PetroPeru | 1968 | 1969 | 1991-present |
| Venezuela CVP | 1960 | 1976 | 1960-1976 |
| Venezuela PDVSA | 1976 | 2007 | 1994-2007 |

*Brazil nationalized the strategic areas of the pre-salt reserves not yet auctioned out.

** A government agency, staffed by the public bureaucracy, was created to carry out certain functions in the oil sector. These agencies could compete with private companies, but they were not national oil companies themselves.

*** YPFB regained NOC functions that it had lost in the reforms of 1997.

Source: Philip, *Oil and Politics. passim;* Wirth, ed., *Latin American Oil Companies. passim*; newspapers

The timing for the creation of national oil companies varies. The 1970s were a particularly propitious time for the development of national oil companies and 78 were created worldwide,[17] including one in Latin America (Ecuador). But lest it appear that the high oil prices after 1973 explain NOC creation, consider the Latin American experience. Latin America experienced two periods of NOC creation when prices were low: the 1930s and the 1950s-1960s. Although Argentina created the first NOC in the world, YPF, in the boom year of 1922, Mexico (1936) and Bolivia (1937) made the move during the Depression. In the post-World War II period of softening prices, Colombia created Ecopetrol (1951), followed by Brazil (1953), Venezuela (1960), and Peru (1968).

Having an NOC and nationalizing various sectors of the industry have not been synonymous occurrences in the region. Mexico, Bolivia, Brazil, Ecuador, and Peru all nationalized the industry at the time they created their NOCs, or within one (Bolivia) or two (Mexico) years. Venezuela (1960-1976) and Colombia (1951-1969) nationalized the industry long after creating their NOCs. And most interestingly, Chile nationalized the importation, distribution, and sale of petroleum products in 1932, 18 years before the creation of ENAP, preferring to rely on general government agencies to implement the regulations. NOCs also exist today in non-nationalized oil and gas sectors: Argentina (ENARSA), Brazil (Petrobras), Chile (ENAP), Colombia (Ecopetrol), and Peru (PetroPeru). Bolivia's YPFB was converted from an NOC to a regulator in 1997 with no exploration, production, or marketing responsibilities and in the 2006, YPFB regained its NOC functions. In Venezuela, four fields in the heavy oil Orinoco basin were offered to private investors in the 1990s when this oil was not yet commercially viable. Even though the industry was nationalized as a monopoly in 1975 and that nationalization was re-iterated in the Constitution of 1999, these particular fields were not put under state control until 2007.

Nor does having an NOC imply shutting out private investors. Table 4 indicates that after the 1980s, six NOCs raised capital by selling some shares to investors.[18] The idea of a mixed private-state company, though, isn't new. Mexico's Petromex in 1934 was originally chartered to have a 50-50 split with private investors.

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[17] Merrie Gilbert Klapp, *The Sovereign Entrepreneur: Oil Policies in Advanced and Less Developed Capitalist Countries* (Ithaca: Cornell University Press, 1987), 20.
[18] Many countries sell shares in their NOCs, including China with its three NOCs: Sinopec, CNOOC, and CNPC.

**Table 4. Private Participation in NOCs**

| Country | NOC | % Public Shares | Nationals Only? |
|---|---|---|---|
| | | | |
| Argentina | YPF 1993-1999 | 41% | no |
| Argentina | ENARSA | 35% Class C | no |
| Bolivia | YPFB | 0 | NA |
| Brazil | Petrobras post-1997 to 2010<br>2010 | 60%*<br>49% | no |
| Chile | ENAP | 0 | NA |
| Colombia | Ecopetrol pos-2007 | 10.1% | no |
| Ecuador | Petroecuador | 0 | NA |
| Mexico | Petromex | 50% | yes |
| Mexico | Pemex | 0 | NA |
| Peru | PetroPeru | 20% expected 2011 | no |
| Venezuela | PDVSA | 0 | NA |

*In 2010, the government purchased sufficient shares to become majority owner. But even when the government only owned 40% of the shares, it retained management control. The new state-owned company, Petrosal, is not an NOC since it does not explore, produce, or make any investments.Tables 3 and 4 demonstrate that the combination of state ownership and the existence of an NOC does not automatically mean high levels of resource nationalism or energy security. Our comparative historical analysis demonstrates that in Latin America, NOCs are created for a variety of reasons. In pursuit of national development, governments have identified energy as a “strategic sector” that ought to be promoted by government action. Rather than focusing on the entire sector, at times specific phases (e.g., refining) have been reserved for the state in order to ensure employment, cheap fuel, etc. Governments have even used NOCs to make markets function more effectively when they have been dominated by a monopoly or an oligopoly. So NOCs can be market-enhancing, not just market-distorting. Perhaps most importantly, nationalizations and NOCs can provide a means by which private investment can support resource nationalism and energy security.

Mexico's challenges suggest a need to gain efficiency, attract capital, technology, and skill. The example of other Latin American countries demonstrates that the state can continue to own the resource and Pemex can continue to have a dominant role, even as reforms make the sector attractive to other NOCs and private oil companies. To understand how resource nationalists make this combination work we turn to the case studies.

## III. Political Economy of Reform in Resource Nationalist Countries: Two Case Studies

### *Brazil*

Brazil's turn to resource nationalism occurred in the second wave of Latin American nationalizations and evolved over time. In 1953, the government reserved unexplored deposits for the newly created NOC Petrobras, but existing contracts were permitted to continue; it was not until 1964 that foreign privates were expropriated and Petrobras given a monopoly over exploration and production. In 1963, the NOC was given a monopoly over distribution to the public sector, as well as over petroleum imports, and in 1964, just a few weeks before the military coup that would usher in a 20-year dictatorship, the private refineries were nationalized. Retail distribution, however was never nationalized.[19] The right wing military never overturned these nationalizations as they were advocates of resource nationalism themselves.

The fact that it took a decade for monopoly control to be established does not mean that Brazilians were indifferent to their NOC or that it lacked symbolic presence. The battle cry of the nationalists was "O Petróleo e Nosso —"The Petroleum is Ours." Brazil's democratic politics and the informal weight carried by the military meant that opposing forces could slow, but not stop, the move toward total state control of exploration and production. As Kingstone notes about the process that created Petrobras,

> "… in 1954, the military pushed for Vargas' resignation. Instead, Vargas committed suicide. His suicide note blamed the foreign interests and their domestic allies who had opposed him on the creation of Petrobras. His note ended by saying that he had fought for the greater good of Brazil

[19] "Petróleo Brasileiro S.A.—Company Profile, Information, Business Description, History, Background Information on Petróleo Brasileiro S.A.," Reference for Business, http://www.referenceforbusiness.com/history2/87/PETR-LEO-BRASILEIRO-S-A.html - ixzz1EMuLfKs3.

> against those who would sell it out to foreign interests and that he 'offered his life in the holocaust.' … The turmoil … burned Petrobras into the national consciousness in a way that no other firm has. In short, Petrobras became the most durable symbol of Brazilian sovereignty. No other SOE (state-owned enterprise) generated the same kind of mythic importance for the general public and for nationalists."[20]

For a time, resource nationalism and energy security priorities supported Petrobras' monopoly position. Brazil was heavily dependent on oil imports, but the expectation was that Petrobras could mitigate that dependence in a way that supported Brazilian national strategies for industrialization. The military that seized control of government in 1964 intended to promote a nationalist and capitalist revolution, with energy playing a key role in that process. In 1972, the military supported Petrobras' venture into overseas operations through its subsidiary Braspetro to supplement and potentially conserve the country's meager oil reserves.

With a dramatic increase in oil prices in 1973 and the first discovery of offshore oil in 1974 (Campos Basin), the government's perspective changed. The country's industrialization seemed to be at risk by the former event, while the latter suggested that domestic sources might be available to permit the country to continue pursuing a nationalist industrialization strategy. The military dictatorship decided that energy security required some modification of their resource nationalism. In the pursuit of energy security, resource nationalism was pushed back a significant notch: Risk contracts were offered to private companies in 1975, breaking Petrobras' monopoly over exploration and production. At the same time, the risky and expensive gamble on producing ethanol from sugar cane benefitted both resource nationalism and energy security concerns since Petrobras had a monopoly over ethanol production and sales.

Petrobras was developing its own capabilities and having success even with the oil reform. In fact, the NOC opposed the decision of the Constituent Assembly that drew up the 1988 Constitution after the return to democracy in 1985 to ban risk contracts.[21] Petrobras' control over energy and its wealth were used to turn it into a conglomerate, with operations outside the

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[20] Peter Kingstone, "The Long (and Uncertain) March to Energy Privatization in Brazil" (paper prepared for the study *Critical Issues in Brazil's Energy Sector,* James A. Baker III Institute for Public Policy, Rice University, Houston, TX, March 2004, 23-24.
[21] "Petróleo Brasileiro S.A.—Company Profile."

hydrocarbon sector, including exporting agricultural and industrial products, vehicles, and minerals.

Despite performance improvements, Petrobras suffered from the ills that beset NOCs that lack the means to protect their business activities from political interference, particularly after the return to democracy. In the name of energy security, Petrobras had to subsidize the ethanol project and, when oil prices were high, purchase it on the spot market and sell it domestically for half the world price. The NOC's debt increased substantially and it was losing some US$14 million daily in 1990. The democratic government also returned to extreme levels of resource nationalism when the Constitution banned risk contracts in 1988. The presidency of the company became politicized and a revolving chair, with five presidents from 1985-1989 and three alone in that last year.[22]

The country collapsed into economic crisis and hyperinflation in the mid-1980s. President Fernando Collor de Mello (1990-1992) intended to pursue an economic liberalization strategy that included privatizing many SOEs. In the oil sector, the intent was to peel away a number of Petrobras' subsidiaries, but Collor could not get the Constitutional reforms passed that were necessary to privatize the NOC.[23] Collor became embroiled in political and corruption scandals and was impeached. He resigned, but the trial proceeded.

Fernando Henrique Cardoso (1995-2002) came to the presidency of Brazil with credentials as both a leading nationalist intellectual and as the finance minister (1993-1994) who had designed economic reforms to tame the country's hyperinflation and put the country back on the road to growth. Cardoso had a personal commitment to growth with improved distribution. His national agenda articulated the need for market efficiencies, but also provided for social policies that would bring immediate benefits to people at the bottom of the social and economic strata, rather than depend on long-term trickle-down effects. Because his party was not dominant in Congress, Cardoso needed to make political bargains with the center and the right in order to get his policies through Congress. He was helped in this effort by Brazilians' fear of a return to the hyperinflation of the recent past.

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[22] "Petróleo Brasileiro S.A.—Company Profile."
[23] Kingstone, "The Long (and Uncertain) March," 21.

Cardoso's reforms in the oil and gas sector began with a confrontation, as oil workers went on strike for 31 days and the military was tasked with ensuring supplies. The shortages caused by the strike, and the subsequent court ruling declaring it illegal, played into Cardoso's hands, though he had to refrain from proposing complete privatization of the NOC.[24] Then, in 1995, a constitutional amendment was approved that permitted private investment in research, exploration and production, refining, import and export, and pipeline and ship transport of hydrocarbons. [25] Implementing legislation followed quickly in the "Concessions Law" (Law 8.987) in 1995 (the law was not specific to oil and gas, but targeted a number of state monopolies). Nevertheless, the fear that government could still intervene at will in the sector did not make Brazil an attractive site for foreign investors. As a consequence, a new reform was necessary.[26]

In 1997, Congress passed a "Petroleum Law" (Law 9.478) that further opened the door to non-state investment in the sector, set timetables for complete liberalization of prices and imports, and stipulated that Petrobras would remain under state control despite partial privatization of its stock. The law also called for increased use of natural gas and permitted private investment in power generation. The Cardoso administration complemented Congress' action six months later with Decree 2.455 establishing the Agencia Nacional do Petroleo (ANP) to oversee deregulation and restructuring of the oil sector, including supervision of auctions of oil blocks. Decree 2.457, issued the same day, created the National Council for Energy Policy (CNPE) in the President's Office to set energy industry policy and, in a nod to energy security, "ensure the supply of petroleum derivatives."[27]

The partial privatization of Petrobras through the selling of its shares introduced some discipline into the state's relationship with its NOC. Although the government retains control of the firm through its "golden shares," the value of the company is significantly affected by how shareholders view its performance, thus providing the state with an incentive to stay out of its management and permit it to operate as a profit-making firm. Competition provided a stimulus

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[24] Kingstone, "The Long (and Uncertain) March," 26-28.
[25] "The Regulatory Framework Of FDI In Brazil," http://www.fdi.net/documents/WorldBank/databases/brazil/fdilaw_brazil.pdf.
[26] Germano Mendes De Paula and Ana Paula Avellar, "Reforms and infrastructure regulation in Brazil: The experience of ANTT and ANTAQ," *The Quarterly Review of Economics and Finance* 48 (2008): 242, 238.
[27] Kingstone, "The Long (and Uncertain) March," 24-25.

for the NOC to use its resources more productively, which ANP promoted. Within 18 months (June 1999), ANP held its first auction and awarded a dozen blocks to 11 companies, including Petrobras, BP, Shell, and Texaco, representing six countries.[28]

President Luiz Inácio Lula da Silva (2002-2010), popularly known as "Lula," was from the Partido dos Trabalhadores (PT)—the Workers' Party—and there was a widely held expectation that he would take the country in a more nationalist direction with increased state presence in the economy. Indeed, Lula did have a personal commitment to distribution with growth and broadened and deepened social policy and poverty programs that had been begun under Cardoso (e.g., the School Fund which provided a family allowance if children were attending school became the Family Fund with added benefits for food and kitchen gas).

But Lula was also a pragmatist. He recognized that the 2001 drought and ensuing energy shortage caused by the diminished supply of hydroelectricity (over 80% of power is generated from hydro) limited his options in the energy sector. He was also aware that international financial markets needed to be reassured and made an appropriate declaration about his intent to be fiscally responsible during his electoral campaign. Lula's PT was also not in control of Congress, and thus he would need to make coalitions with the center and right in order to gain passage of legislation to promote his vision for the country.

Lula was able to initiate policy reform from 2002 to 2008 that did not increase state control for energy security or resource nationalism.[29] In 2004, for example, reforms in power sector regulations encouraged private investment in generation and transmission.[30] There were also no efforts to revise oil contracts, despite the success that Venezuela was having in forcing IOCs to renegotiate contracts.

The year 2008 represents a watershed for Brazilian energy policy. In that year, auctions of oil and gas blocks came to a halt when Petrobras discovered the giant Tupi field 5,000 meters below

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[28] Erjia Joy Guan, "Understanding Brazil's Oil Industry: Policy Dynamics and Self-Sufficiency," *Journal of Emerging Knowledge on Emerging Markets* 2 (2010): 83-84.
[29] Paulo Paiva, "Lula's Political Economy: Changes and Challenges," *Annals of the American Academy of Political and Social Science* 606 (2006): 196-215.
[30] U.S. Department of Energy, Energy Information Agency, "Brazil," January, 2011.

sea level. With the prospect of large oil and gas reserves, the Lula administration insisted on the need to rewrite oil legislation.[31] The intent from the beginning was not to move back to the extreme mode of resource nationalism. Petrobras was not to be given a monopoly. Instead, the contracting system for exploration and production in these deep waters shifted from a concession to a production-sharing model. This change created a dual contracting system in Brazil, since it was limited to the new deepwater blocks that fall under the "strategic reserves" designation. The old system is still active, with ANP resuming auctions in 2011 for blocks in the non-strategic reserves that had been suspended in 2008.

The Lula government submitted a four-part oil and gas reform to Congress in August 2009 that included: [32]

1. Creation of a new state energy company, Empresa Brasileira de Administração de Petróleo e Gás Natural S.A. - Pré-Sal Petróleo S.A. (PPSA), or "Petrosal." This company is wholly owned by the state and is in charge of allocating contracts in the "strategic" deepwater blocks. The company can hold public auctions, in which Petrobras can bid, or it can allocate a block to Petrobras directly. Petrosal passed the House with 250 votes in favor and 67 opposed.[33]

2. Establishment of production-sharing contracts (PSC) for the new pre-salt blocks, rather than the previous concessions contracts. The Senate approved this on a 38-31 vote. Petrobras is required to be the sole operator and hold at least a 30% stake in every project. Since the NOC can also participate in the bidding, it has the potential to wind up with a significantly greater presence in the winning consortia. Foreign companies must create a Brazilian corporation to participate, and local content requirements will be established in the contracts.

3. The "capitalization" of Petrobras was to be accomplished through the transfer of up to 5 billion barrels of oil from the offshore reserves and the sale of stock with a five-year investment

[31] The rise of resource nationalism was not limited to hydrocarbons, as discussion of the need to generate more value-added processing, rather than exporting raw materials, became a topic as well. "Brazil tightens mining legislation focused on local processing and jobs," *MercoPress*, February 11, 2011.

[32] Guan, "Understanding Brazil's Oil Industry," 86; "Pre-Salt Bills Complete Passage Through Brazil's Chamber of Deputies, Attention Turns to Senate," IHS Global Insight, accessed February 19, 2011, http://www.ihsglobalinsight.com/SDA/SDADetail18397.htm.

[33] "Lower house approves bill to create Petrosal," Business News Americas, November 19, 2009.

program of US$200-220 billion. This bill passed the Senate on a 44-5 vote with six abstentions, though earlier there had been a discussion of whether the transfer was constitutional since the private stockholders of Petrobras would essentially have partial ownership of these reserves.[34] As a result, any increased rent appropriation would not entirely be appropriated by the state. In September 2010, Petrobras had a record-breaking US$70 billion share offering, consisting of US$27 billion in cash and US$43 billion in oil that the government exchanged for its increase in shares.[35]

4. Creation of a social fund from revenues generated from production from the pre-salt layer. It is estimated that poverty, education, environment, and economic projects could receive up to US$88 billion over the lifetime of these deepwater fields.[36]

In the interest of maintaining its reputation for respecting contracts, the government did not seek retroactivity, even arguing that forced contract renegotiation would be against Article 5 of the constitution. Approximately 28% of the deepwater acreage has already been allocated under the prior concession system.[37] By doing so, the government has stimulated the market for existing concessions or stakes in firms that already have contracts in Brazil's deep waters. China's Sinopec, for example, paid US$7 billion in 2010 for a stake in the Brazilian assets of the Spanish oil company Repsol[38] in a move made possible by the new Brazilian regulations, but Brazil does not get a share of that increased value.

Figure 1 indicates existing projects in the pre-salt, along with the names of the companies participating in each of the exploration and production projects.

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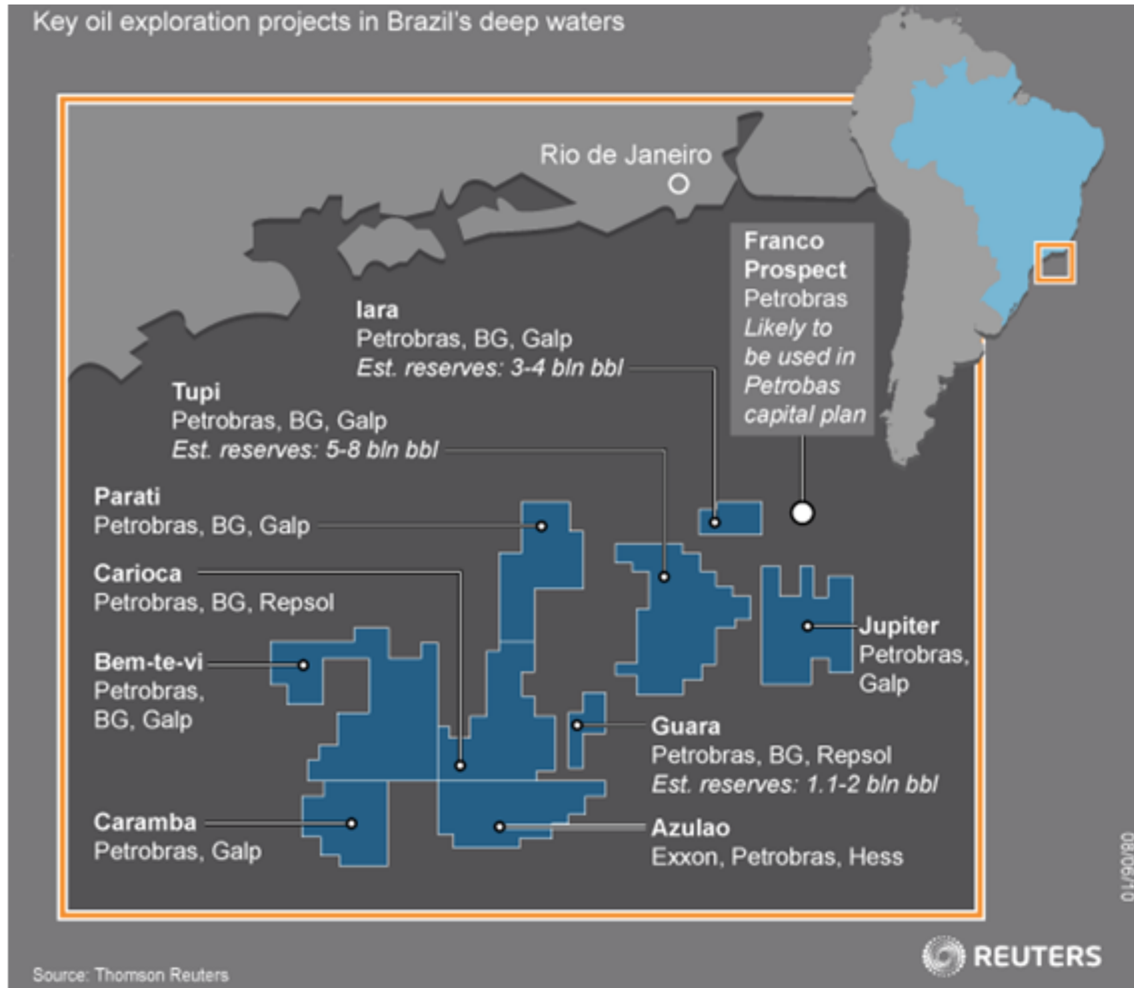
[34] Bruno Drago, "Brazil: Pre-Salt: A New Legal Framework for the Oil Industry in Brazil," *Mondaq*, http://www.mondaq.com/article.asp?articleid=120464, accessed February 18, 2011; Jaques, Carlos, Francisco Eduardo Carrilho Chaves, Paulo Roberto Alonso Viegas, and Paulo Springer de Freitas, "Availiação da Proposta para o Marco Regulatório do Pré-Sal," Centro de Estudos da Consultoria do Senado Federal, Textos para Discussão, 64, October 2009; "WRAPUP 1-Brazil Senate passes key points of Lula oil reform" *Reuters*, June 10, 2010.
[35] Guillermo Parra-Bernal and Denise Luna, "Petrobras sale hits record $70 bln," *Reuters* September 23, 2010.
[36] Guan, "Understanding Brazil's Oil Industry," 86.
[37] *Petrobras Pre-Salt*, *http://www.petrobras.com.br/minisite/presal/en/questions-answers/*.
[38] "China's Sinopec buys Repsol Brazil stake for $7.1 billion," *Reuters*, October 1, 2010.

**Figure 1. Brazil's Santos Basin Deep Water Oil Projects**




Source: http://link.reuters.com/gek88k

The only controversial issue in the new reform was the distribution of oil revenues among the Brazilian states. Under the revenue sharing system in place at the time, the federal government received 40%, states and municipalities in which production or offshore transportation occur divided 52.5%, and all states and municipalities benefited from the remaining 7.5% share, which went into a "participation" fund. In March, Brazil's Lower House voted 369-72, with two abstentions, for an amendment that destined the entire non-federal 60% to the "participation" fund and would subject existing contracts to the requirement to contribute to the social fund. The Lula administration opposed the changes in royalty distribution because of the political power of

Rio de Janeiro, the state where most offshore production occurs, and argued that retroactive application of the law to existing contracts is unconstitutional and violates Article 5. The reform got bogged down in the Senate. Although Lula could have used his executive powers to force a vote in 45 days, the opposition threatened to hold up all the reform bills if they were designated "urgent." The Senate approved the House amendments when they considered the bill months later, but Lula vetoed them. Reflecting widespread popular support at the end of the Legislative session in December 2010, Congress passed the bill.[39] Congress is continuing to look into the distribution issue.

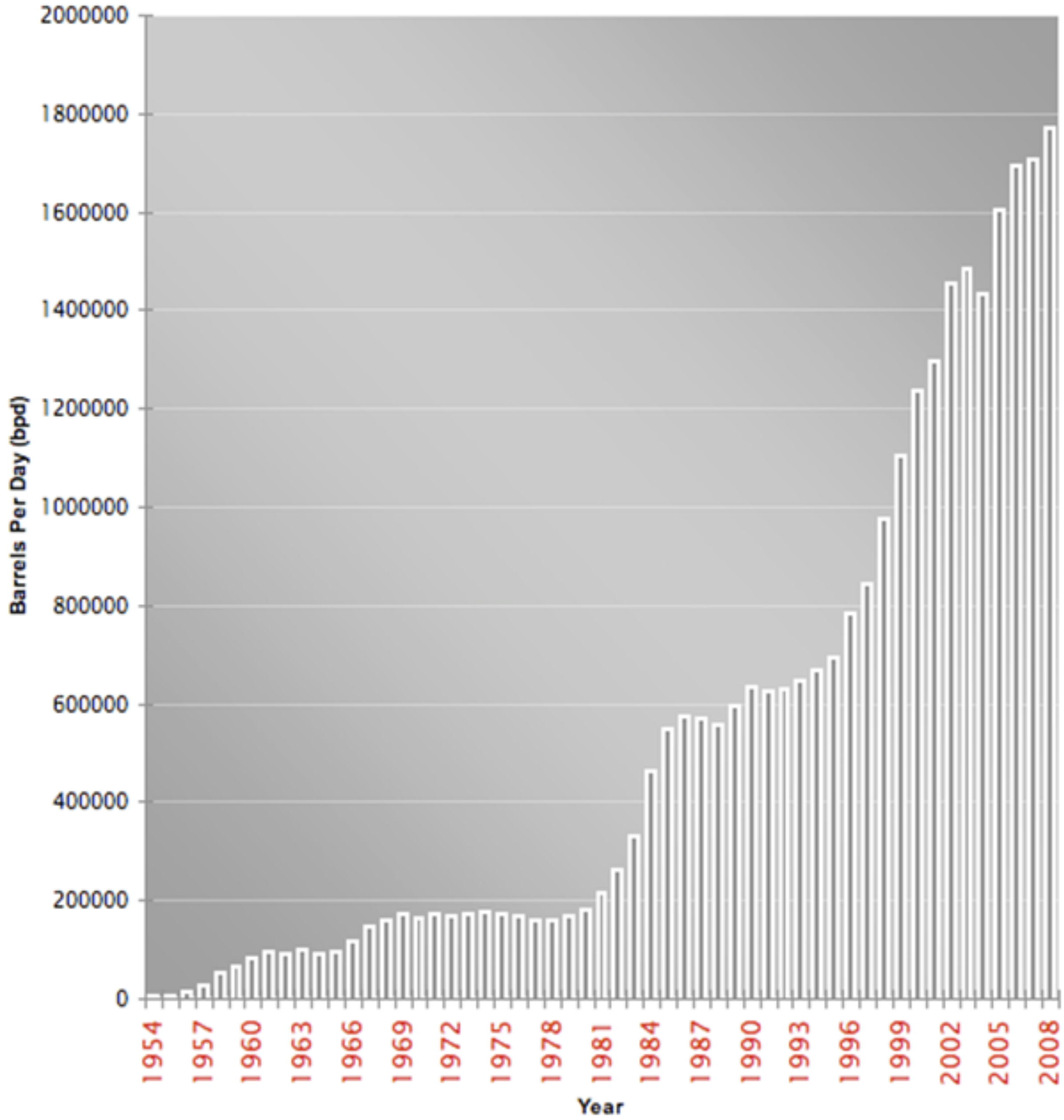
Figure 2 demonstrates that Petrobras was very successful under the oil reforms of 1975-1988 and 1995-2008 (the most recent years in the figure) that enabled the government to turn to other companies if the NOC could not meet the country's energy security needs. Though no longer a monopoly, Petrobras is still by far the major player in the Brazilian oil industry, controlling more than 95 percent of the country's production.[40] Petrobras is also successful internationally, operating in 27 countries,[41] though the demands of developing the strategic areas will likely result in a moderation of its international profile. This might explain why Petrobras pulled out of Ecuador in November 2010, when the country's government began requiring all contracts to be converted into service contracts. In 2003, Petrobras acquired Perez Companc Energía, Argentina's largest oil company, and its subsidiaries in Bolivia, Peru, and Paraguay. Petrobras' success has raised challenges for the NOC and the government. In terms of foreign investment, resource nationalism in host countries has begun to affect Petrobras. In 2006, Bolivia nationalized all gas fields; Petrobras had the concession for the largest one and was the company most affected since the government's share varied by size of the concession. Petrobras was unhappy with its forced renegotiated contract that required it to pay 82% of profits to Bolivia and

[39] "Pre-Salt Bills Complete Passage Through Brazil's Chamber of Deputies, Attention Turns to Senate," IHS Global Insight, accessed February 19, 2011, http://www.ihsglobalinsight.com/SDA/SDADetail18397.htm; "UPDATE 2-Brazil to auction subsalt oil in 2011 after reform," *Reuters*, January 3, 2011; Stuart Grudgings, "Oil wealth strains Brazil politics in poll year," *Reuters*, March 29, 2010; "Brazil's Congress passes oil industry overhaul" *Reuters,* December 1, 2010.
[40] Veronica Murillo, "Heavy Oil Contributes to Brazil's Energy Self-Sufficiency" Rigzone, accessed February 21, 2010, http://www.rigzone.com/training/heavyoil/insight.asp?i_id=192.
[41] "Where we are," Petrobras Worldwide, accessed April 18, 2011, http://www.petrobras.com/ptcm/appmanager/ptcm/dptcm?_nfpb=true&_pageLabel=petr_com_mundo.

lowered investment to simply maintain production.[42] The company was willing to leave the country, but the Brazilian government insisted the NOC remain because of its broader foreign policy interests.[43] But in Ecuador, Petrobras' decision in 2010 to leave, rather than accept the conversion of its production-sharing contracts into service contracts, appears to be supported by the Brazilian government.

[42] "LNG UPDATE: Nato Eyes LNG Security; Brazil Contracts for Algerian LNG Supply" *Natural Gas Week*, September 17, 2007.
[43] "Petrobras Eyes Deal for Nationalized Ecuador Assets," *Latin American Herald Tribune*, circa December 2010, http://laht.com/article.asp?ArticleId=380685&CategoryId=13280.

**Figure 2. Petrobras Annual Crude Oil Production, 1954-2008**




Source: Erjia Joy Guan, "Understanding Brazil's Oil Industry: Policy Dynamics and Self-Sufficiency" *Journal of Emerging Knowledge on Emerging Markets* Volume 2 November 2010, p. 97 using data from Petrobras, 2008a.

*Venezuela*

The evolution of Venezuelan oil policy since the beginnings of democratic politics in the 1940s has been characterized by a very pragmatic approach to resource nationalism.[44] The country did not nationalize the industry until the third Latin American wave in the 1970s. While Bolivia and Mexico were tossing out the IOCs, Venezuela opted for squeezing more profit from the private companies. In the 1940s, Venezuela was the first country to insist on a 50-50 split of profits and was an important player in the development of the Organization of the Petroleum Exporting Countries (OPEC) as a counterweight to the power of IOCs. By the early 1970s, Venezuelan energy politics were dominated by three issues: declining oil reserves, declining investment by IOCs attracted by lower-cost Middle Eastern oil, and the expiration in 1983 of the 40-year leases signed with the IOCs. During Rafael Caldera's first term (1969-1974), the government initially favored service contracts between IOCs and the young NOC Corporación Venezolana de Petroleo (CVP) as a means to increase investment, but Venezuela's extensive experience in the industry and rising oil prices convinced the government that they did not need the IOCs and they proceeded toward total nationalization.

This was the high point of Venezuela's resource nationalism. With strong support from the nation's political parties and citizens, the 1971 "Reversion Law" passed in Congress with only five dissenting voices. The law reserved future exploitation for a wholly owned state corporation. Concerned that the IOCs would decide not to invest in operations that would no longer be theirs in a few years, Congress subjected the existing contracts to immediate reversion if the leaseholders did not exploit them efficiently. It is worthwhile to note that, even at its resource nationalism highpoint, Venezuela would not simply break or alter contracts.

The first administration of Carlos Andrés Pérez (1974-1979) coincided with the dramatic increase in oil prices after the 1973 Arab oil embargo. The boom in revenues created a complex situation for Venezuela, given the country's underdevelopment and the expectations that the oil boom was here to stay despite declining oil reserves. Using powers granted in the 1961 Constitution and capitalizing on his popular approval rating of 75%, Pérez began his administration with a slew of decrees, resolutions, and draft laws to deal with the economic

[44] cf. Rómulo Betancourt, *Venezuela: Oil and Politics*. Boston: Houghton Mifflin, 1979.

dislocations and rising expectations generated by the oil boom. In addition, Congress granted him "extraordinary executive authority" to reform the tax laws, reorganize public financial institutions, and raise salaries and wages. Pérez formed a commission to examine how the petroleum sector could be nationalized.[45]

The nationalization of the energy sector was carried out in 1975. The government wanted a national monopoly, but worried that one company could not effectively run an industry that was diversified by the distinct operations of three major IOCs and some smaller independent companies. Instead of turning CVP into the national oil company, a holding company (Petroleos de Venezuela, S.A., or PDVSA) was created, with CVP becoming one of its four operating subsidiaries. Within two years, CVP was subsumed into the operating unit Corpoven.[46]

After the significant decline in oil prices and the deterioration of the country's international debt situation in the 1980s, the government was in severe financial straits and, as a state-owned enterprise, PDVSA's assets were enticing. Luís Herrera Campins' administration (1979-1984) forced PDVSA to convert US$5 billion in overseas accounts into bolivars at the Central Bank, but the currency devaluation that year significantly decreased the value of those accounts. PDVSA was later forced to pay taxes in advance and purchase government bonds; multiple exchange rates also permitted the government to manipulate PDVSA's balance sheets and maximize transfers to the national treasury. These various transfer mechanisms eliminated PDVSA's ability to self-finance projects.[47] OPEC quotas, shrinking in a futile effort to slow the fall in prices, were also limiting PDVSA's ability to offset declining revenues by pumping more oil.

In light of the difficult international and domestic situation, PDVSA management decided to promote an "internationalization" strategy in hopes of vertically integrating with overseas

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[45] Terry Lynn Karl, *The Paradox of Plenty: Oil Booms and Petro States* (Berkeley: University of California Press, 1997), 127-129; David R. Mares and Nelson Altamirano, "Venezuela's PDVSA and World Energy Markets" (James A. Baker III Institute for Public Policy, Rice University, 2007), 22-27.
[46] Mares and Altamirano, "Venezuela's PDVSA," 28-29.
[47] Bernard Mommer, "The Political Role of National Oil Companies in Exporting Countries: The Venezuelan Case," Oxford Institute for Energy Studies, *WPM* 18 (September 1994), 18; Juan Carlos Boué, *Venezuela: The Political Economy of Oil* (Oxford: Oxford University Press, 1993), 25, reports US$18 billion repatriated, but multiple sources agree on US$5 billion.

refineries that could handle their heavy crude. The main vehicle for this strategy was the joint venture with refiners in its major markets. The program was a success for the company in terms of increasing its refining capacity outside of the country (perceived as a means to ensure markets for Venezuela's heavy crude) and the acquisition of assets that were harder for the national government to seize or control. But such successes also raised the concern of nationalists, whose view of PDVSA has always been as a rent-generating mechanism to fuel economic growth and welfare at home, rather than as a company that should be increasing its value.

Carlos Andrés Pérez, elected for a second term (1989-1993), understood the structural weakness of Venezuela's petroleum-based development model and moved quickly to reform it. Although his reforms significantly improved economic performance over the next few years, the unequal distribution of its costs and the continued high levels of corruption generated strong opposition from the very beginning: riots in multiple cities in 1989, known as the Caracazo, killed hundreds and forced Pérez to declare a state of emergency.[48]

In the midst of the economic crisis and increasing social discontent (there were 900 major protests in a seven month period during 1991-2),[49] two military coups in 1992 failed (the first led by Colonel Hugo Chávez) and Pérez was impeached for corruption in 1993. These events revealed significant discontent among the populace, particularly the poor, not only with the economic reform package but also with the political system. In this context, PDVSA's importance as a symbol of the nation and its ability to generate revenue made it a prize for the competing visions of the country's future.

The second administration of Rafael Caldera (1994-1999) introduced the "Agenda Venezuela" program in 1996 to address the economic crisis. It depended heavily upon an increase in petroleum revenues and, as part of what was called "Plan Apertura," provided PDVSA with explicit support in its strategy to become a major, competitive, international oil company. PDVSA decided to export as much petroleum as possible rather than attempting to increase

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[48] Moisés Naím, *Paper Tigers & Minotaurs: The Politics of Venezuela's Economic Reforms* (New York: Carnegie Endowment, 1993); Juan Carlos Rey, "Corruption and Political Illegitimacy in Venezuelan Democracy" in *Reinventing Legitimacy: Democracy and Political Change in Venezuela*, eds. Damarys Canache and Michael R. Kulisheck (Westport, CT: Greenwood, 1998), 113-135; Karl, *Paradox of Plenty*, 179-183.
[49] Mares and Altamirano, "Venezuela's PDVSA," 30-31.

revenue by withholding supply. New policies to increase investment in the petroleum sector allowed foreign investment upstream through operating contracts to develop the heavy oil Orinoco region with capital and technology that PDVSA simply did not possess. Because the contracts negotiated in the 1990s were based upon very pessimistic expectations about how much oil was in the Orinoco Belt and producible, they offered excellent terms to the IOCs:[50] royalties of 1%, income tax of 34%, majority ownership, and arbitration clauses designating New York, not Caracas, as the locale for dispute resolution. Three types of contracts were offered, depending on the characteristics of the reserves—operating service agreements, profit sharing agreements and association agreements—with a number of IOCs, including Total, Statoil, Norsk Hydro, Conoco, and Chevron, investing more than US$16 billion in these fields.[51] In 1999, the Venezuelan Supreme Court found that the exploration agreements were "contracts of public interest" and thus legal, despite the Constitutional prohibition on foreign participation in exploration or production, even in partnership with PDVSA.[52] The Orinoco Belt would become an important contributor to the country's oil and gas reserves, thus this decision represents an important reduction in the level of resource nationalism in Venezuela's oil policy.

But as petroleum prices fell in 1998 and the Venezuelan crisis continued, the opposition to this supply strategy, and the partnerships with IOCs that it entailed, increased dramatically.[53] Chávez' campaign for the presidency that year explicitly targeted the Plan Apertura and he won with more votes than any other candidate in history.

The first two years of the Chávez government were largely spent developing the new institutional structure that would permit the implementation of his radical reforms, rather than on implementing new macroeconomic policies. A Constituent Assembly was elected, which wrote a new Constitution that increased executive power and was quickly ratified by more than 70% in a plebiscite. New legislation was adopted in 1999 to regulate the underdeveloped natural gas sector (Ley Orgánica de Hidrocarburos Gaseosos) but which permitted private companies to own up to

[50] Amy Myers Jaffe, personal communication.
[51] Emily A. Witten, "Arbitration Of Venezuelan Oil Contracts: A Losing Strategy?" *Texas Journal Of Oil, Gas, And Energy Law* 4 (2008), 56; Juan Forero, "Orinoco Belt in Venezuela holds the promise of great oil riches," *The New York Times*, May 31, 2006 http://www.iht.com/articles/2006/05/31/business/oil.php; Bernard Mommer, "The New Governance of Venezuelan Oil," Oxford Institute for Energy Studies, 1998.
[52] Witten, "Arbitration Of Venezuelan Oil Contracts," 74.
[53] García Larralde, 99.

100% of non-associated gas projects and pay significantly lower royalties and income taxes than in the oil sector.[54] This differential treatment for non-associated gas was probably due to PDVSA's lack of experience in the gas industry,[55] but nevertheless indicates low levels of resource nationalism in order to generate supply.

Chávez's plans to transform the political, economic, and social life of Venezuela with his "Bolivarian Revolution" required that he exert executive domination to run PDVSA as essentially a rent-generating tool, rather than as the profit-maximizing company that it had become in the 1990s. Company management pursued a plan to modify Chávez's petroleum policies, and the political opposition adopted the PDVSA opposition to Chávez's interference with the Company in order to strengthen its own attack on Chávez. The company's strategy was to cripple the government by limiting revenues through a strike commencing in April 2002. Not only is PDVSA the country's largest employer, but more than three quarters of export revenues, half of government revenues, and a third of gross domestic product (GDP) depends directly and indirectly on the oil sector. Their expectation was that Chávez would give in because he needed the petroleum revenues to maintain his popularity at home.[56]

Chávez fought the alliance of PDVSA officials and the old political elites. He withstood the challenge even as the economy collapsed. The first general strike produced the frustrated April 2002 coup, which ousted Chávez from power for two days. Upon returning to office, Chávez's support jumped 10 points in the polls.[57] In December 2002, after Chávez had 49 laws approved via fast-track mechanisms, the opposition began a 69-day strike that PDVSA joined. National oil production dropped from 3.3 million barrels per day in November 2002 to 700,000 in January 2003 and produced losses to the economy of up to US$7.5 billion.[58]

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[54] "Country Analysis Briefs: Venezuela," Energy Information Administration, U.S. Department of Energy, http://www.eia.doe.gov/cabs/Venezuela/NaturalGas.html.
[55] García Larralde, 97-98; 126-127. There are recent precedents for candidates who ran against neo-liberal policies to adopt them once they assumed the presidencies of their countries, e.g., Pérez's second term in Venezuela; Alberto Fujimori in Peru; Carlos Menem in Argentina.
[56] "Venezuela," U.S. Department of Energy.
[57] Mares and Altamirano, "Venezuela's PDVSA," 36.
[58] "Factiva," *Reuters AlertNet*, accessed February 16, 2006, http://www.alertnet.org/printable.htm?URL=/db/cp/venezuela.htm; U.S. Department of Energy, 3.

Feeling more in control after the failures of the April 2002 coup and the December 2002 - January 2003 strike, Chávez made increasing use of his authority under the petroleum legislation—the 1971 Reversion Law gave the government the authority to immediately revise contracts with the IOCs if it determined that they were not being exploited 'efficiently'—and his new Constitution to alter the terms with foreign investors in all sectors of the economy.

With the dramatic rise in petroleum prices, Chávez and his oil team understood that their bargaining leverage with their IOC and NOC partners was shifting dramatically in their favor. Consequently, the government began forcing contract renegotiation under threat of termination, with compensation at a value to be determined by the government, minus any outstanding debts or taxes. Table 5 summarizes the changes. Note that while most changes increase levels of resource nationalism, they do not rise to the extremes of prohibiting private or foreign investment.

## Table 5. Oil Policy Changes under the Administration of Hugo Chávez

| | |
|---|---|
| 2001 | New hydrocarbon law raises royalty rates, promises PDVSA majority control of all new projects, and requires joint ventures for foreign investment. |
| 2004 | Royalty rates increase from 1% to 16.6% on Orinoco heavy crude. Tax rates from Apertura-era deals are reinterpreted and foreign investors are assessed US$4 billion in back taxes. |
| April 2005 | Energy minister Rafael Ramirez declares that 32 operating agreements for privately run oil fields were illegal when signed and must be brought into compliance with the 2001 hydrocarbons law. Existing agreements were to be converted into joint ventures, with PDVSA owning a minimum of 51% and a new royalty rate of 30%. |
| May 2006 | National Assembly enacts a new 33.33% extraction tax and raises income taxes to 50% from 34%. |
| September 2006 | Government demands that PDVSA's ownership share of the Orinoco projects be increased, from an average of 40% to a minimum of 51%, and that PDVSA take over operational control of the fields. Chávez sets a deadline of May 1, 2007, for PDVSA to take operational control and June 26, 2007, for companies to sign new agreements. Chevron, Statoil, BP, and Total sign deals giving PDVSA 60–83% interests in their ventures and preserving their presence in the Orinoco oil field projects. ConocoPhillips and Exxon Mobil refuse to accept new working terms and walk away from their investments. |
| 2009 | Venezuela embarks on a further nationalization of the oil sector, when PDVSA takes control of many service contractors in the Lake Maracaibo region. These companies provide services that support oil production in the area, such as barges, drilling rigs, maintenance, and natural gas processing. The move follows efforts by PDVSA to negotiate a reduction in the amount of money owed to the companies for work that they had performed.[59] |
| 2010 | Carabobo auctions. Two projects successfully placed, including one by U.S.-based Chevron. The other project receives insufficient bids, and is not awarded at the time. |

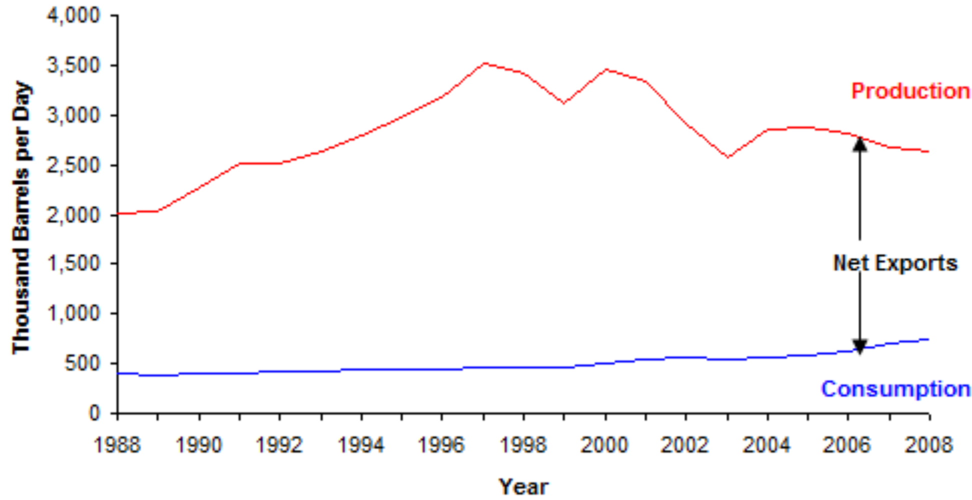
[59] "Venezuela," U.S. Department of Energy.

The search for energy security, which in the Venezuelan context means the generation of sufficient revenue from oil exports to fund Chávez' Bolivarian Revolution, prompted the Chávez' administration to draw back from extreme resource nationalism through four mechanisms. In the first instance, the old operating service agreements (OSA) created in the 1990s to get greater yields out of small fields with declining production were required to become joint ventures with PDVSA holding majority stakes. This switch represents a move toward greater state control but does not exclude private or foreign investors. A second mechanism is the creation of "strategic associations" in the Orinoco Belt with majority ownership by PDVSA. There are four such associations. Only the first, Petrozuata, created in 1998, predates Chávez, and is actually 100% in the hands of PDVSA. The other three were all developed during Chávez' administration and have foreign participation: Cerro Negro in November 1999, with BP holding 16.66%; Sincor in December 2000, with Total holding 30.3% and Statoil 9.7%; and Hamaca in October 2001, with Chevron holding a 30% stake.[60] In 2010, new consortia were developed as Chávez auctioned new blocks for the first time in his administration. This third mechanism operates in the Carabobo section of the Orinoco. One operation has PDVSA holding 60%; Repsol, Petronas of Malaysia, and India's NOC, ONGC, evenly splitting a 33% stake; and two small Indian companies holding the remaining 7%. Chevron, Japanese firms Mitsubishi and Inpex, and a Venezuelan company Suelopetrol all have minority shares in their partnership with PDVSA in the second project. Another project was offered, but Venezuela did not receive a satisfactory bid for it. The final mechanism is a direct bilateral deal, all involving the Orinoco Belt. In December 2009, PVDSA announced it will develop the Boyaca 3 block with CNOOC of China. Other bilateral deals include Petrovietnam in Junin 2, China's CNPC in Junin 4, Italy's Eni in Junin 5, and a consortium of Russian companies in Junin 6.[61]

PDVSA has not fared well as an oil company under Chávez, who uses it as a rent-maximizer to fund his Bolivarian Revolution. Because independent analyses of Venezuela's oil sector are not available, it is difficult to know exactly what has happened with exploration and production. But even official government sources have production flat for the past five years, and the EIA sees it declining for all but one year of Chávez' presidency (Figure 3).

[60] Exxon Mobil and ConocoPhilips are suing the Venezuelan government over these contracts, which were forced to migrate to PDVSA majority ownership.
[61] "Venezuela," U.S. Department of Energy.

**Figure 3. Venezuela's Oil Production and Consumption, 1988-2008**




Source: EIA International Energy Statistics, www.eia.doe.gov

Chávez has forced the NOC to take on a major and costly role outside of the energy sector. PDVSA's social plan includes education, agriculture, infrastructure, supermarkets, and local development projects. The target is to create 1.7 million jobs and benefit 8.4 million people. PDVSA's new social role requires expenditure commitments that conflict with the financial needs of oil operations. Some industry experts claim that the natural field decline rate in PDVSA's areas is as high as 25% compared to 2 % and 8% in Saudi Arabia's Aramco. Yet, in 2004, PDVSA spent US$4.3 billion on social programs and only US$2.9 billion on oil-related investments.[62] In the first half of 2010, the NOC's contributions to social programs and transfers to the National Development Fund equaled US$5.1 billion, contributing to a 14% fall in profits over the first half of 2009.[63]

Venezuela does not need to focus on cost reduction or efficient operations of its NOC in order to maximize revenue; high prices and the continued production by the IOCs and other NOCs bail out a set of policies that have significantly reduced PDVSA's operating abilities. For example, in the Carabobo bids, the minority foreign partners are expected to finance virtually the entire US

[62] Mares and Altamirano, "Venezuela's PDVSA," 78.
[63] "PDVSA issues new bond; posts lower profits," *El Universal*, October 22, 2010.

$10-20 billion for each project.[64] It is a balance between resource nationalism and energy security that has worked well for the Chávez administration.

## IV. Conclusion

Mexico faces important challenges as a country. While open unemployment is not high (5.6%), underemployment may be as high as 25%. Poverty levels are at 18% as measured by a food-based definition of poverty and at more than 47% using a criterion based on assets.[65] In short, the employment picture, educational needs for a labor force of the 21st century, political strife in Chiapas and Oaxaca, and the societal and budgetary costs of the Drug War mean that Mexico must increase its growth rate.[66] Although the economy grew in 2010 at its highest rate in a decade (5.5% GDP), this came after a decline of about 7% in 2009,[67] so is not indicative of the robustness of the economy. Other Latin American economies, particularly resource-rich ones, have done significantly better than Mexico over at least the past decade.

President Calderon announced in 2010 that his top economic priorities were reducing poverty and creating jobs.[68] Among the key factors that impede consistent and high growth are inefficient regulation of privatized monopolies, insufficient rule of law, rigidities in the labor market, and a fall in public investment.[69] Even if Pemex were able to marginally increase production, it would not be sufficient to generate the activity and wealth to push Mexican growth rates into the 6-7% range necessary to generate the jobs and opportunities society demands. Thus, overcoming the challenges raised by the decline of easy oil in Cantarell and the monopoly of Pemex in the oil sector are of fundamental importance for Mexico's future.

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[64] "ONGC takes stake in Venezuela's biggest oil deals," *Reuters*, February 12, 2010, http://www.moneycontrol.com/news/business/ongc-takes-stakevenezuela%60s-biggest-oil-deals_441471.html; Simon Romero, "Sealing Shift, Chávez Gives Contracts to Western Oil Companies," *The New York Times*, February 11, 2010.

[65] "Mexico: Economy," *CIA World Factbook*.

[66] Eduardo Zepeda, Timothy A. Wise, and Kevin P. Gallagher, "Rethinking Trade Policy for Development: Lessons From Mexico Under NAFTA," Carnegie Endowment for International Peace, *Policy Outlook*, December 2009.

[67] "Mexico economic growth hits 10-year high," *BBC News*, February 22, 2011.

[68] "Mexico: Economy," *CIA World Factbook.*

[69] Timothy J. Kehoe and Kim J. Ruhl, "Why Have Economic Reforms in Mexico Not Generated Growth?" Federal Reserve Bank of Minneapolis, Research Department Staff Report 453, November 2010, 3, 7, http://www.minneapolisfed.org/research/sr/sr453.pdf.

There are two sets of relevant lessons for Mexico from the general Latin American and the specific Brazilian and Venezuelan experiences with resource nationalism. The first is conceptual and is fundamental for the debate about reform. The second is about reform itself and the process of building the alliances to support it—using institutional prerogatives, building coalitions, and having innovative and risk-taking leaders. Politics is the art of the possible—the challenge is to find a way to make credible the link between taking a step back on resource nationalism and enhancing people's well-being.

*Conceptualizing the Reform of Resource Nationalism*

In Brazil, the recognition that hydrocarbon exploration and production is costly and risky serves to limit resource nationalism, once the discussion becomes couched in terms of national development. Brazil needs energy to develop its economy to meet the needs of its expectant middle class and still large numbers of poor. The country has also set its sights on moving up the ranks of near-"Great Power" states to become an important nation on the world stage. So for domestic and international reasons, the production from the pre-salt reserves is too valuable to subordinate to the goal of maximizing resource nationalism. Cardoso, one of the fathers of Dependency Theory in the 1960s,[70] and Lula, leader of the Workers' Party, understood that the link between energy security and national development required moderating resource nationalism, and articulated that vision in debates over the level of resource nationalism that best suited the country's needs.

Turning to Venezuela, we see a similar recognition on the part of traditional nationalists like Pérez and radical nationalists like Chávez. PDVSA is captive to Hugo Chávez and his interpretation of the Bolivarian Revolution. But it is imperative to recognize that the Chávez coalition is a pragmatic one. The group has what can, in the current international context, be considered radical goals (e.g., redistribute economic and political power, structure the political institutions in ways that permit Chávez to win relatively free elections). But the Chávez administration understands its limits and the basis of its support. The Chávez administration has broken new ground in dealing with the IOCs. After a decade of privatizations in the 1980s and

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[70] Fernando Henrique Cardoso and Enzo Faletto, *Dependencia y Desarrollo en América Latina*, Siglo Veintiuno Editores, 1971.

1990s that put NOCs on the ropes, Venezuela has taken the lead in renegotiating the terms of IOC-NOC relationships. The Chávez administration does not seek to eliminate the role of international capital, but rather to alter the distribution of benefits and risks of those relationships.

In addition, capital should be conceived of as a tool and in limited supply. There are opportunity costs for state investment and they could be justified in the oil sector if the returns are greater here for society than elsewhere. But Mexico has lots of needs where private investment might not be the best path: basic infrastructure, education, job training, health, poverty programs, etc. Discussions of monopoly resource nationalism need to address whether the rent appropriation from a bigger pie generated by foreign investors—with the skills, technology, and capital achieved through royalties, taxes, and partnerships between the NOC and others—would be greater than the complete appropriation from a less efficient and effective NOC. In addition, the willingness of Asian governments (Chinese, Japanese, Indians, and South Koreans) to package support behind the investment of their NOCs offers the opportunity to leverage access to the oil sector with capital, technology, and skills in other areas of the economy. All have offered packaged investments spanning economic sectors in the Latin American countries where they have investments in the energy sector. The Chinese, in particular, have bought access to energy through large packaged investments, providing loans of US$20 billion to Venezuela, US$10 billion to Brazil, and even US$1 billion to Ecuador.

Intelligent adaptations of resource nationalism can also be beneficial for NOCs, whether they are effective enterprises or not. In Venezuela, PDVSA's productive capacity has declined, but production from IOCs and other NOCs has increased, permitting the Venezuelan NOC to use its partnerships to pay its taxes and fund social programs. Venezuela does squeeze its partners (whether they are NOCs or IOCs) when the market tightens, but then relaxes its grip as the market softens. This behavior is certainly not a science, and the government sometimes squeezes too hard; for example, ExxonMobil and ConocoPhillips both left and sued, rather than operate under the new rules. But Chávez's gambles just make more measured reforms that increase rent appropriation by the state seem very reasonable to potential partners, such as in Brazil's strategic areas of the pre-salt fields. And both Brazil and Venezuela's experiences demonstrate that

permitting even 100% ownership in the riskier phases of exploration and production does not preclude changing contracts down the road and maintaining partnerships.

*Reform as Process*

Policymakers, analysts, business people, and informed citizens have long understood that reform is difficult and a process. Change always means a redistribution of costs and benefits and it is not always possible to create a win-win situation among stakeholders. Reform, thus, requires a leader. Leadership doesn't mean imposing one's will; it means finding the limits of the possible and seeing the unfamiliar alliances that can be made to move toward those limits. Both Brazil and Venezuela have had insightful leaders during their reform processes.

In Brazil, Cardoso and Lula recognized the existing political context for change in energy legislation and worked to achieve reform within that context. In the Brazilian political system, a number of changes could be instituted simply via presidential decree. But both presidents understood that to insist on this route would have frozen out changes that required legislative support since neither had majorities in the Congress. Despite Brazil's reputation for having a strong executive branch, the legislature, judiciary, state governors, the *Ministério Público*, the bureaucracy, and regulatory agencies, all can and often do constrain the president's actions.[71] It was necessary, therefore, to build alliances with the center and right to pass legislation.

In this process of bargaining and shaping alliances, the independence of Petrobras from the executive branch of government was an asset. ANP and private shareholders, even the CNPE, stood between the president and the NOC, thus allaying the fears of parties not holding the presidency that any reforms that strengthen Petrobras would merely provide the party in power with additional patronage to distribute and consolidate its hold on the office.

The institutional and political context is dramatically different in Venezuela, but leadership continues to be fundamental. Chávez has control over the legislature and the judiciary as well as

[71]Lee J. Alston, Marcus André Melo, Bernardo Mueller, and Carlos Pereira, "Political Institutions, Policymaking Processes and Policy Outcomes in Brazil," Inter-American Development Bank, Research Network Working Paper #R-509, March 2006 http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=844409.

a high level of public support as he rails against capitalism. Consequently, he could push Venezuelan resource nationalism back to the monopoly in exploration and production that it maintained for 20 years after nationalization. But he has not, nor has he booted out private IOCs in favor of other NOCs, despite his preference for these other NOCs.

As closing food for thought for the Mexican audiences that must intellectually and politically embark on the necessary reforms for Mexico to progress, I turn to Lázaro Cárdenas, the Mexican president who nationalized the oil industry in 1938. We forget that Cárdenas was a pragmatist above all: He made the political bargains that kept his party together, even supporting the moderate Manuel Avila Camacho for president in 1940 because he knew the country needed time to digest his reforms, and that immediately pushing further ahead could undermine them. Despite the national distrust of its neighbor to the north, he helped ally Mexico with the United States during World War II because he saw the greater danger in fascism than in the "Colossus of the North."[72] In the oil sector, Cárdenas first tried to collaborate with the IOCs and private capital, but Mexican capitalists would not subscribe to Petromex and the IOCs would not cut a fair deal with Mexico and its workers. Cárdenas did not demand a monopoly, but conditions led him there. Today, conditions are quite different in Mexico's oil fields and it may be time to go back to Cárdenas' original vision: a balance between resource nationalism and energy security to benefit the nation.

[72] cf. Isidro Morales, "The Energy Factor in Mexico-U.S. Relations."