

The Denationalization of Pemex: Implications and Scope for Mexico

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This article provides evidence of the denationalization of *Petróleos Mexicanos* in matters of energy sovereignty and analyzes effects on the budget related to fiscal resources perceived from oil. The analysis is based on a high level of efficiency in production that places *Petróleos Mexicanos* as one of the most efficient corporations in terms of operating profits despite a fiscal regime for extractive industries and the strategy of slow dismantling and denationalization that has been going on since the 1990s and which began with the separation of the business unit as a fundamental aspect. The effects on energy sovereignty and the different scenarios of profit-sharing contracts, production-sharing agreements, and concessions, and the fiscal impact with the entrance of large transnational corporations into Mexican territory are analyzed from the 1990s until the current reform that eliminates the government's exclusivity in drilling and looking for oil.

El presente trabajo muestra evidencia de la desnacionalización de *Petróleos Mexicanos* en materia de soberanía energética y afectación presupuestal en recursos fiscales provenientes del petróleo. El análisis parte de la existencia de una alta eficiencia productiva que ubica a *Petróleos Mexicanos* como una de las corporaciones más eficaces en términos de su rentabilidad operativa, a pesar de su régimen fiscal extractivo y de la estrategia de desmantelamiento y desnacionalización paulatina iniciada desde los años noventa del siglo XX, cuyo arranque inició con la separación de la unidad de negocio como un aspecto fundamental. A partir de ese momento y hasta la presente reforma que elimina la exclusividad del Estado en la explotación y exploración del petróleo, se analiza tanto el impacto en materia de soberanía energética como los diferentes escenarios bajo contratos de utilidad compartida, PSAs y concesiones, del impacto fiscal con la entrada de los grandes corporativos petroleros transnacionales al territorio mexicano.

Key words: Pemex, denationalization, operating profits, profit-sharing contracts, concessions, licenses, fiscal impact, transnational corporations

Introduction

Carlos Salinas' administration (1989–1994) launched neoliberalism in Mexico with privatizations, deregulation, and economic liberalization. This neoliberalism has led to the poorest economic growth in the country's modern history, a persistent deepening of inequality, and the highest rate of impoverishment of the country's population. For example, let us consider the increase in

economic poverty among workers, who in only 10 years went from an average annual salary of U.S.\$8,400 to U.S.\$7,500. As a result, participation of salaries in national wealth went from 32% to 29% during this period, with a salaried population of almost 6 million people more in 2010 than in 2000 (Reyes, 2013).

At the same time, poverty in Mexico has permanently increased from 2006 to the present, and has not diminished significantly since 1992. According to a recent report by the Economic Commission for Latin America and the Caribbean (ECLAC), Mexico is the only Latin American country where poverty increased, going from 31% to 37% between 2005 and 2011. This is in stark contrast to other Latin American countries where poverty fell significantly, such as Venezuela, Ecuador, Brazil, and Argentina, countries with an economic strategy of social development and integration that is radically different than in Mexico. The cases of Argentina and Brazil are especially relevant; although Argentina saw poverty fall drastically from 30% to almost 6% in six years, in Brazil poverty went from 36% to 21% (ECLAC, 2013).

The government is using the same arguments as when it privatized the telephone industry, banks, and large industrial corporations. These have not only been social failures but also economic disasters, such as the Banking Fund for the Protection of Savings (Fobaproa) bank bailout, which cost 13 times more than what was taken in with the sale of the banks and led to the denationalization of the banking system. This latest, deeper, more dangerous reform to Mexico's biggest interests comes in the form of the denationalization of its energy resources.

The nationalization of oil was one of the gains and markers of the Mexican Revolution. Article 27 of the 1917 Constitution established that hydrocarbons were state property and, until the constitutional changes to energy reform, drilling, and searching for oil were published, it was an activity that only the state carried out, a result of the 1938 nationalization.

Besides leading to a fiscal hole that would generate more poverty, inequality, and social marginalization, denationalization of oil and of hydrocarbons in general will also lead to a new reconfiguration of the economic groups where the role of oil transnational companies will be fundamental in the country's economic and political power. Modifications to articles 25, 27, and 28 of the Constitution and the incorporation of 21 transitional articles in the recently approved decree imply the loss of exclusivity in oil drilling and exploration projects. There will be a substantial change in the status of *Petróleos Mexicanos* (Pemex), from decentralized organism to a productive state-run company, and a National Oil Fund will be created that will be guarantor of the distribution of oil profits to private investors who compete with Pemex. The country's energy industry is dismantled without taking into account the economic fallout that this would imply for most Mexicans.¹ This essay analyzes the beginning of the end of a historic era of nationalism in energy matters in Mexico.

The essay is divided into five sections. In the first, we analyze Pemex's efficiency and note that it is under a fiscal regime for extractive industries that keeps it from having resources for investment. The second part covers fundamental aspects relating to the denationalization of Pemex beginning in the 1990s. The third section discusses how denationalization of Mexican oil favors U.S. energy

needs. The fourth section states that, with denationalization, energy sovereignty is compromised. Finally, the last part analyzes the fiscal impact denationalization will have.

Pemex: An Efficient Company with a Fiscal Regime for Extractive Energies

In 1990, Pemex's capital, or equity, represented approximately 80% of its assets. By 2006, this percentage had been reduced to 3%, and by 2012, liabilities had surpassed the company's assets, representing 113% of assets, with negative equity of U.S.\$1.547 billion (Bartlett Díaz & Rodríguez Padilla, 2008; CNN Expansión, 2013).² The problem is not in Pemex's productive efficiency but in its operations as a business unit, in the fiscal regime for extractive energies and in the corruption that prevails in all areas of the hydrocarbon business. Let us consider the situation of Pemex's operating structure which, even with the huge amount of internal corruption it entails, fully generates an operating profit of 55%. This percentage could be even higher if there were effective institutional mechanisms for fighting and punishing corruption and if there were a unit of unique business, taking into account that gross profits oscillate between 90 and 95%, depending on the international sale price of crude oil, Pemex's main sales and export product.³

The company's operating profit as related to its sales is greater than any other business in Mexico and many other companies of its type in the world. Table 1 shows the operating efficiency of the national oil corporations (NOCs) and shareholder-owned companies (SOCs), where NOCs have the highest operating profits in this order: Kuwait Petroleum Corp., PDVSA-Petróleos in Venezuela, Pemex in México, Gazprom in Russia, and Statoil in Norway. Pemex has an operating profit as a corporation of 55%, much higher than SOCs such as ConocoPhillips, with 25%; Chevron, 19.2%; and Exxon, 17.4%.

Pemex is the only corporation among the large oil producers in the world shown in this sample that has negative profits after taxes. The fiscal regime for extractive industries makes it impossible for Pemex to make an after-tax profit, which should be used to increase production capacity in refineries and petrochemicals. One of the situations that contributes to the apparent inefficiency and reduction of PEMEX's net worth is found in the tax and duty differential that the state-run company adds to the federal budget as a percentage of its profits. No company can survive and be sustainable in the long run if its fiscal weight is higher than what it earns as a profit or surplus. Pemex is an exceptional case because, despite having one of the highest operating profits in the world, it has a negative profit after discounting taxes and duties. This fiscal regime for extractive industries is inadequate to reinvent and grow; it implies a tax burden of 124% of the operating profit and leads Pemex to invest with debt.⁴ The financial resources for investing in and increasing production capabilities, and for carrying out refining and petrochemical projects exist; therefore, the problem that there are no resources to invest lies in this fiscal regime for extractive industries and not in inefficiency. The state-run corporation is led to a deliberate undercapitalization due to higher indebtedness.

Table 1. Total Oil Sales and Purchases, Operating Profits, and After-Tax Profits of the Main Oil Companies in the World in 2012 (Millions of Dollars)

Company	Total sales	Oil purchases	% of sales	Operating profit	% of sales	After-tax profit	% of sales	Number of employees
Aramco	402,000 ^b	N/D	N/D	N/D	N/D	N/D	N/D	54,798
National Iranian Oil Co.	80,715 ^c	N/D	N/D	N/D	N/D	N/D	N/D	115,000
Kuwait Petroleum Corp.	151,671	N/D	N/D	118,788	78.30%	33,261	21.90%	15,825
Petróleos de Venezuela	124,459	40,012	32.10%	69,904	56.17%	4,215	3.40%	93,679
Pemex	126,600	N/D	N/D	69,600	55.00%	-8,226	0.00%	147,368
Gazprom ^a	597,434	N/D	N/D	287,556	48.10%	248,976	41.70%	400,600
Statoil	11,765	5,905	50.20%	3,360	28.60%	1,130	9.60%	N/D
ConocoPhillips	62,004	25,232	40.70%	15,423	24.90%	7,481	12.10%	29,700
Chevron	241,909	140,766	58.20%	46,332	19.20%	26,179	10.80%	62,000
Exxon	453,123	265,149	58.50%	78,726	17.40%	47,681	10.50%	83,600
Total	245,812	170,974	69.60%	32,236	13.10%	14,618	5.90%	92,855
Rosneft	93,971	11,327	12.10%	11,662	12.40%	10,441	11.10%	159,771
Petrobras	175,586	N/D	N/D	20,216	11.50%	17,318	9.90%	80,492
Royal Dutch Shell	481,700	369,725	76.80%	51,183	10.60%	26,840	5.60%	97,000
Petrochina	357,021	229,477	64.30%	28,382	7.90%	21,243	5.90%	1,670,000
BP	388,285	293,242	75.50%	19,733	5.10%	11,816	3.00%	79,700

Source: Author's creation, based on Gazprom (2012); Royal Dutch Shell (2012); Exxon (2012); Aramco (2011); British Petroleum (2012); Petrochina (2012); Total (2012); Chevron (2012); Petrobras (2012); Kuwait Petroleum Corporation (2012); Pemex Annual Report (2012); PDVSA-Petróleos de Venezuela (2012); Rosneft (2012); National Iranian Oil Company (2011); ConocoPhillips (2012); Statoil (2012); Forbes (2012).

^aIncludes sales of gas. ^b2011 Sales amounts. ^c2011 sales amounts.

Meanwhile, according to a publication of the 500 largest companies in Mexico, at the national level, none of them has similar operating profits for 2012 (CNN Expansión, 2013). In that year, Pemex had sales earnings totaling U.S.\$125.330 billion and an operating profit of 55%, U.S.\$68.795 billion, whereas its closest rival, Carlos Slim's América Móvil, ranked second, has two times fewer sales than Pemex and has an operating profit of 33%. This operating profit, which is obtained from removing administration and sales costs from the gross profit, already takes into account the many resources destined to corruption among authorities within the company, among several ministries and dependencies associated with its operations, among authorities in states where it operates and, of course, among the union and its leaders who are politically aligned with the federal government.

Predecessors to the Denationalization of Pemex

Based on information and data from several sources (e.g., Bartlett Díaz & Rodríguez Padilla, 2008; Heigl, 2011; NAEWG, 2005; Saxe-Fernández & Delgado-Ramos, 2003), steps toward the denationalization of Pemex began with certain reforms that took place in the 1980s that allowed private participation in several areas. In 1986, this process began with the reclassification of petrochemicals into basic and secondary, where Pemex kept exclusive rights only over the former. In 1992, Pemex was divided into four subsidiaries under the creation of a private efficiency handling called a holding, creating competition between each of them and breaking up the business unit. In 1995, they were no longer considered strategic areas for the government, and private capital was allowed into the natural gas business in transport, distribution, storage, and sales. During that same year, Projects for Differed Investment in Spending (called PIDIREGAS in Spanish)⁵ were created, a financial mechanism that allowed the private sector control over Pemex's investments⁶ and became the state-run company's main instrument for investment. In 2005, 10 years after its creation, 90% of Pemex's investment was made through PIDIREGAS. In 2002, Multiple Services Contracts were created, a mechanism that allowed Pemex to hire private companies, mainly foreign ones, to search for and produce natural gas. In 2008, reform of oil issues created more admittance to private investment through the Contracts for Incentives with subcontracting schemes, whose main beneficiaries were the foreign oilfield service companies, such as Schlumberger, Halliburton, Petrofac, and McDermott International. Substantial reforms to the private sector—which are promoted through different forums, reports, and negotiations with different levels in Mexico and abroad, such as the International Report by Business Monitor (2013)—establish a complete opening up of the energy sector through reforms to the Constitution that allow everything from shared-profit contracts, as the government's original proposal stated, to production-sharing agreements (PSAs) and concessions, defended mainly by the National Action Party. This same report by Business Monitor,⁷ which expresses the positions of the large transnational oil corporations, says that Mexico still has legal restrictions in the Constitution against full investment by SOCs in the sector. With a return to power of the Institutional Revolutionary Party, the agreements with the SOCs to change the Constitution and reform the fiscal system have become a reality.

One of these measures, the disincorporation in several subsidiaries in 1992, is transcendental in the denationalization of the oil industry given the transversal effect on the entire production and efficiency scale. During Carlos Salinas de Gortari's administration, Congress approved the change to the organic law of *Petróleos Mexicanos*. From what was before one decentralized technical, industrial, and commercial organism, four companies were created with their own personality and patrimony: *Pemex Exploration and Production*; *Pemex Refining*; *Pemex-Gas and Petrochemicals*; and *Pemex-Petrochemicals*.⁸ The business unit was dissolved, and companies were created that compete with each other to produce and sell the products of each one at international prices. These companies depended administratively but not operationally in Pemex, leading to years-long deep inefficiency and undercapitalization.

Beyond allowing an unnecessary increase in bureaucracy now that each company has its own administration and operations areas, which led to an increase in personnel and in costs, as Bartlett Díaz y Rodríguez Padilla⁹ (2008) show, separating the business unit leads each subsidiary company to seek to maximize its increases separately, even at the cost of the other subsidiaries that in practice work like isolated companies. The lack of integration, besides creating diseconomies of scale and an increase in costs, leads each subsidiary to sell its products at international prices, sloping the price of production and the local market of the merchandise upward, which has a negative effect on the Mexican consumer's purchasing power and leads to a potential increase in the price of the cost of merchandise among subsidiaries.

Production Directed Toward Personal Internal Consumption

When the neoliberal model dominates in an economy, we reach efficiency when the prices of the merchandise are set at international prices so as not to "subsidize domestic use." Several studies on the efficiency of NOCs and SOCs¹⁰ in the oil industry (Al-Obaidan & Scully, 1991; Eller, Hartley, & Medlock, 2011; Hartley & Medlock, 2013) find evidence that SOCs are more efficient than NOCs, considering that the goal of corporations should be to maximize income (not profits) and that, to do so, they must adjust the prices of the merchandise produced by the NOCs to international prices and stop subsidizing local purchases. Hartley and Medlock (2013) establish parametric and nonparametric methods to estimate the supposed higher efficiency of SOCs over NOCs,¹¹ but the problem is not in the method of estimation, no matter how sophisticated and exact it may be, but rather in the variables and indicators with which the calculations of these models are carried out.

When establishing a price at international standards, no matter what the merchandise may be, in this case gasoline, diesel, or gas, the price of the work force must always be considered, the standard of living of a country's workers. If gasoline must be adjusted to the international price to be "competitive," salaries must also be adjusted. If this does not happen, the standard of living of the workers in the resident country is affected. Therefore, the key question is one of false premises. The methodology used to calculate makes no difference. The data will act similarly because the basis of the problem is found in the construction of the indicators. This means that even if the reasoning and results gathering are

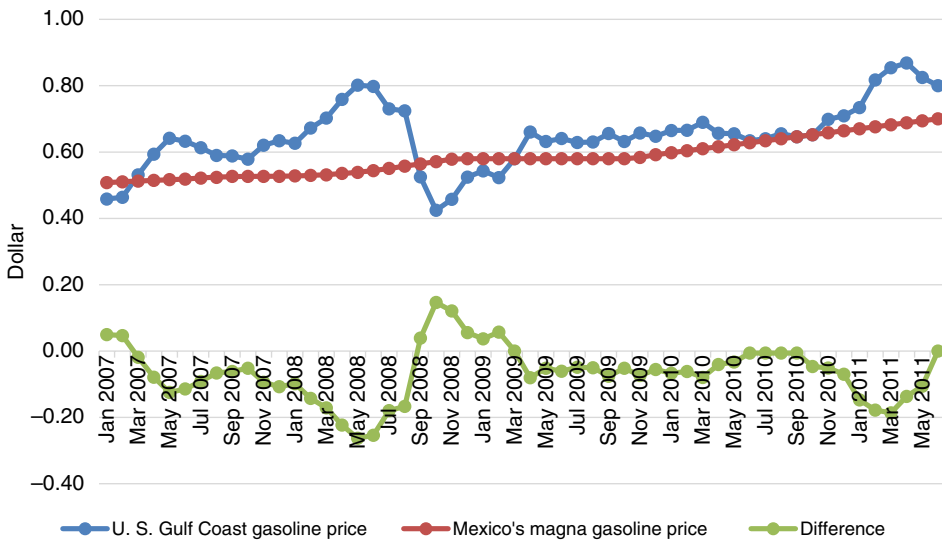


Figure 1. Prices of Gasoline in Mexico and the U.S. Golf Coast, and the Difference in Prices, 2007–2011

Source. Dirección de servicios de investigación y análisis, 2012.

logically and methodologically impeccable, they have no value because they are based on false premises and will always come to false conclusions.

In Mexico, the law of the special tax on products and services establishes in fraction I of article 2A that the price of gasoline in Mexico is determined taking into account the average of the spot price of regular, unleaded gasoline on the Gulf Coast of the United States. Figure 1 shows in Mexican pesos the price of a liter of gasoline, which has as a parameter the gasoline on the Gulf Coast of the United States. As can be observed, the difference is generally minimal and, after the 2009 crisis, the gasoline price on the Gulf Coast was lower than in Mexico. When the price in the United States is higher than the price in Mexico, there is an implicit “subsidy.”

The problem in using the international price—in this case, the U.S. price—as a reference is that the basic merchandise that Mexicans buy is in local prices, just as is the price of the workforce, the salaries. Prices coming from a nondollarized economy in terms of purchasing, such as in Mexico’s case, are established depending on their local production prices and vary according to supply and demand in the local market with interaction with international markets. Not internationalizing all prices, including the salary, and only doing so with certain merchandise that greatly affects the consumer, such as gasoline, diesel, and gas, means establishing a *de facto* tax and a loss of purchasing power for the general salaried population.

To analyze it in even greater detail, Table 2 considers some products from a basic basket of goods for Mexicans as an example. In every one of the products, including a Coca-Cola with the same content as those sold in the United States, sliced bread, beans, rice and, of course, gasoline (in liters), the purchasing power of the U.S. worker–consumer is much higher than that of the Mexican worker–

Table 2. Difference in Purchasing Power Between the United States and Mexico, 2013

Items	Prices		Purchasing power		Difference in purchasing power (A)/(B)
	Dollars	Pesos	United States (A)	Mexico (B)	
1 liter of Gasoline	\$0.95	\$12.02	61.05	5.32	11.47
1 liter of Milk	\$1.00	\$13.50	58.00	4.74	12.24
1 packet of soft white bread	\$2.20	\$21.00	26.36	3.05	8.66
600 milliliters of Coca-Cola	\$1.50	\$8.84	38.67	7.24	5.34
1 liter of water	\$1.75	\$11.84	33.14	5.40	6.14
1 can of tuna	\$5.43	\$13.00	10.68	4.92	2.17
1 kilo of beans	\$3.50	\$16.00	16.57	4.00	4.15
1 kilo of rice	\$2.20	\$12.50	26.36	5.12	5.15
1 liter of spot oil	\$1.40	\$21.88	41.43	2.92	14.17
1 kilo of chicken	\$7.05	\$34.90	8.23	1.83	4.49
1 dozen eggs	\$2.00	\$25.26	29.00	2.53	11.45
1 megabyte	\$3.33	\$195.00	17.42	0.33	53.10
1 minute of long-distance calling	\$1.20	\$2.34	48.33	27.33	1.77
164-inch plasma television	\$3,400.00	\$45,890.00	0.0171	0.0014	12.24
1 Samsung refrigerator	\$1,200.00	\$17,160.00	0.0483	0.0037	12.97
1 Frigidaire stove	\$1,000.00	\$14,300.00	0.0580	0.0045	12.97
Minimum wage per day	\$58.00	\$63.96	1.00	14.34	11.17

Source: Authors.

consumer. A Mexican worker who earns minimum wage for an eight-hour work day would buy with his salary the equivalent of 5.3 liters of gasoline. The U.S. worker with the same work day, earning minimum wage, would buy 61 liters with his entire salary, a difference of 11.47 times in terms of purchasing power. On average, for these example products, purchasing power would be approximately 11 times greater in the United States than in Mexico, whereas the salary difference would be 14.3 times.¹²

Based on indicators, slanted over relative international prices that do not take into account the adjustment in all the prices of an economy's merchandise, including the workforce or the salaries, the results have no veracity, no matter how sophisticated and logical they may be. The principle of building indicators subjectively allows for no less subjective efficiency results. The problem is not the method of estimation but the methodology and conceptions about the economy and derived concepts, such as efficiency.

According to this logic of "subsidizing" gasoline, diesel, and gas purchases, and as a result of the division into separate companies with the 1992 reform, Mexico's Ministry of the Interior, along with Congress when it approved the spending budget and the income law, imposes the price of combustibles at international prices, which affects consumers and Mexican workers. In the particular case of gasoline, this supposed subsidy has important implications in the government's budgetary accounts, given that the total amount of the subsidy is subtracted from the total budget earnings. The resulting net budget of a non-existent subsidy is going to stop the government's institutionalized corruption, which happens at all levels of government when a part of these resources is shared among the states and cities throughout the country. Just consider that, by 2012, the amount of the supposed subsidy subtracted from the resources was U.S.\$16.736 billion, resources that could have been put back into Pemex's fixed investments or into greater redistributive social spending (Cámara de Diputados, 2013). This means that the decision to break up the business unity of Pemex not only affects the workers but also leads to institutionalized corruption and a worsened image in the eyes of the Mexican public as a state-owned oil company that is so inefficient that it "subsidizes" the price of gasoline and other products refined from hydrocarbons.

Production for Productive Use (Investment) among Subsidiaries as a Raw Material

The separation of the subsidized entities has meant that trade between each of them has to comply with the norms agreed upon in the international agreements referring to transfer prices. These norms establish that the mercantile operations carried out between organizations that share ownership or control must be valued at market prices. If Pemex is under a vertical integration scheme, subdivided into specific areas, the exchange of goods and services between the areas does not imply the establishment of transfer prices because they would be considered only as another production material. The creation of scale economies and therefore of minimal costs between subsidiaries, derived from vertical integration, would allow profits to be made rather than losses, as is happening currently.

With these measures of deliberate denationalization since the 1990s and the reduction of Pemex's net worth, public opinion developed the impression that the company is inefficient and has high prices in energy issues, such as gasoline.

Without an adequate, efficient business unit policy, where each subsidiary separately seeks to maximize profits, and without a national industrialization policy that encourages productive chains and vertical or horizontal integration, the other three subsidiaries operate with losses. This is the case of Pemex Refining, where this inefficiency that is planned so as to undercapitalize the company leads it to import increasing amounts of the gasoline used in the country. Table 3 shows that, although Pemex Exploration has an operating profit of 74%, Pemex Refining has losses of 11% with respect to its operations. Basic Petrochemicals, which nobody in the government is interested in supporting, has operating losses of 2.3%, and Pemex Petrochemicals also has operating losses equal to 30%. This is also why Pemex has a combined operating profit of 55%, because the Exploration subsidiary has an operating profit of 74%. If the company were managed as a single business unit, where 74% of this profit that the Exploration area shows remained, Pemex's operating profit would be almost the same as that of the state-run oil company in Kuwait (Table 1), the corporation with the highest operating profits in the world among oil companies.

With clarity on economic and financial aspects of Pemex, the economic and social effects of the denationalization of oil and energy must be identified. In the bill document of the Senate United Commissions on Constitutional Points, Energy, and Legislative Studies, approved by the Senate in two days and after less than one day of discussion in the Chamber of Deputies (Lower House), which meant reform of and additions to articles 25, 27, and 28 of the Constitution of the United States of Mexico, there is no analysis of this economy of denationalization. According to this bill that has now been approved as a constitutional reform and is awaiting approval by the Executive Branch, exclusivity is lost in exploring and drilling for oil, there are substantial changes to Pemex—going from a decentralized organism to a productive company of the state and a contractor—a National Oil Fund is set up that will guarantee the distribution of oil profits to the SOCs, and the Federal Electricity Commission practically disappears as a strategic company, giving way to regulatory electricity and gas organisms.

The changes to these nodal articles in the Constitution give way to other liberal reforms, such as the labor one, at the end of an historic era of nationalism inherited from the Mexican Revolution with the dismantling of the 1917 Constitution. They constitute a step backward in judicial terms, to a more liberal constitution like the 1857 one, guarantor of the privileges of the elites associated with foreign groups, just as Mexican history for the second half of the 19th century shows, with Porfirio Díaz's administrations, but today, these groups are transnational corporations.

Denationalization Guarantees the Energy Needs of the United States

With increasing problems of unipolar control over the planet, but still as a hegemonic power, the United States has sought for decades to add to its energy supply from the Middle East. The commercial integration of North America has among its goals the satisfaction of the U.S. energy needs, as well as guaranteeing

Table 3. State of Results of Pemex Subsidiary Organisms, 2012 (Millions of Dollars)

Concept	Pemex exploration		Pemex refining		Pemex Basic petrochemicals		Pemex petrochemicals	
		%		%		%		%
Sales	100,171.77	100.00	59,107.12	100.00	13,871.55	100.00	2,660.47	100.00
Sales cost	-22,752.88	-22.70	-77,081.79	-130.40	-13,205.53	-95.20	-2,391.18	-89.90
Gross profit	77,418.88	77.30	-17,974.67	-30.40	-747.69	5.40	269.29	10.10
Operating profit	74,373.70	74.20	-6,455.97	-10.90	-315.22	-2.30	-785.45	-29.50
Financial cost	2,497.56	2.50	-1,471.82	-2.50	231.30	1.70	-60.11	-2.30
Changed earnings	2,643.58	2.60	257.05	0.40	27.69	0.20	0.06	0.00
Taxes	67,472.92	67.40	N/D	N/D	16.61	0.10	-1.26	0.00
Net profit	7,061.02	7.00	-7,670.75	-13.00	121.19	0.90	-846.76	-31.80

Source: Pemex Annual Report 2012.

control of a large part of the energy produced in the world. The Free Trade Agreement between Canada and the United States led to Canada's losing control over its energy sources because of the norms of the Agreement, such as restrictions on the establishment of minimum and maximum oil prices and not stopping the prohibition on exporting crude from the United States so as to guarantee its domestic use (Puyana, 2006).

The goal of the United States is to make North America into a completely integrated region on oil matters, where all the countries must satisfy the energy needs of one country. Because the United States uses 14 times more energy than Mexico, Mexico would be subordinated to provide the United States with oil, relaxing its energy sovereignty by sharing it (diluting it) with the United States.

The central goal of denationalization is, on the one hand, to guarantee the supply of oil to the United States and, on the other, to favor the large SOCs with oil profits. The document *Annual Energy Outlook* from the U.S. Energy Information Administration (2013, p. 13) has basic data that allow us to see the United States' interest in controlling Mexican hydrocarbons. Toward 2040, the United States will be a net gas exporter but will continue to be a net importer of oil. According to this report, the increase in natural gas, besides beginning to reverse the trend of net importer and to increase the U.S. exports, has led to a fall in the price of gas, where the increase in production and exports of natural gas will depend not only on what the United States finds in its own territory but also in foreign countries "such as the development of new production capacity in foreign countries, particularly from deep-water reservoirs, shale gas deposits, and the Arctic" (U.S. Energy Information Administration, 2013, p. 13). Also, "Most of the projected growth in U.S. exports consists of pipeline exports to Mexico, which increase steadily over the projection period, as increasing volumes of imported natural gas from the United States fill the growing gap between Mexico's production and consumption. Exports to Mexico increase from 0.5 trillion cubic feet in 2011 to 2.4 trillion cubic feet in 2040" (U.S. Energy Information Administration, 2013, p. 78).

Furthermore, although the United States expects an increase in natural gas use over the next 30 years of approximately 10 trillion cubic feet, there is a substantial decrease in potential demand for oil. It is predicted that by 2019, the United States will use 19.8 million barrels per day, and by 2040, 18.9 million, 900 thousand barrels fewer. The drop is expected due to innovation in new technology in the transportation sector for 1.5 million fewer barrels, with an increase in the industrial sector of 0.6 million barrels daily. Its domestic production will be at a standstill beginning in 2019, at 12 million barrels daily, so it will continue to have a deficit of between 7.8 and 6.9 million barrels daily that it will have to import from abroad to satisfy its domestic energy use (U.S. Energy Information Administration, 2013, pp. 79–80).

The same report also establishes that the use of oil or gas as substitute energy merchandise for industry and transportation will depend on the difference in price and the possibilities for technological reconversion. The report says that the fall in the price of gas has had an effect on the rise in the price of oil and a certain substitution of oil by gas, mainly in the transportation sector, which is very sensitive to changes in the prices of fossil fuels and responds more quickly to their substitution. Also, it is important to mention the weight of this sector on

energy use in the United States, given that the transportation sector uses almost three times more hydrocarbons than the industrial sector, equal to 72% of all oil production.

Mexico produces close to 2.54 million barrels per day, approximately 900 thousand barrels fewer than in 2004,¹³ the year of Mexico's highest oil production. Of this production, almost 50% is exported, 1.255 million barrels a day, compared with 1.870 million barrels in 2004, where the fall in exports of almost 650 thousand barrels per day has equaled 72% of the drop in domestic production. This drop in production most affected the United States, as the drop in Mexican oil exports to that country was 84% (550 thousand barrels per day) (CESOP, 2013a; INEGI, 2012; Pemex Annual Report, 2012).

Mexico uses 1.3 million barrels per day and, according to specialists, it can remain at this amount if it invests in other energy sources. Use in Mexico is mostly concentrated (almost 93%) in refining (the production of oil products such as gasoline, diesel, and jet fuel) and to a lesser degree in petrochemicals (SENER, 2010, p. 117). Almost 80% of crude oil exports go to the United States to satisfy its domestic demand, and a large percentage of gasoline production carried out in the United States is exported to Mexico. According to the report from the U.S. Energy Information Administration (2013, p. 66), "U.S. total motor gasoline exports are down slightly from last year but still at high levels." Most of the gasoline exports go to Mexico and Central America,¹⁴ 57%, 300 thousand barrels approximately, of 527 thousand barrels per day of gasoline exported by the United States in 2011.

We can conclude that Mexico does not need to increase its oil production for domestic use because of supposed efficiency problems (because this can be measured from operating profits) but because of the U.S. energy needs in industry and transportation; Mexico is an important supplier for the United States to guarantee the use of oil. If Mexico sells raw material to the United States, and the United States sends back processed products of higher value, such as gasoline, which will be denationalized through the energy reform, Mexico will be a net importer not only of gasoline but also of natural gas. A document by the U.S. Senate Foreign Relations Commission (2012, p. 6) explains it clearly: "U.S. interests lies first in assessing if the reforms will be significant . . . the fundamental criteria of any reform is if this reform produces the will of the international oil companies . . . Even more so, to have the international oil companies working with Pemex to increase production . . . will increase the faith that Mexico will have significant quantities of oil available to export to the United States."

Denationalization Hands Over Energy Sovereignty and Decision Making

The changes to the Constitution that the Energy Reform document notes seek to eliminate the prohibition on contracts with large SOCs to produce, drill for, or commercialize Mexico's hydrocarbons, reserved today exclusively for the Mexican government.

The North American Free Trade Agreement (NAFTA) internationally regulates the trade relationship between Mexico, the United States, and Canada on energy products. Chapter VI of this Agreement establishes the general rules on the

trading of energy products and basic petrochemicals. When Mexico signed it, during the negotiations it placed special emphasis on restricting the reach of integration on hydrocarbon issues. With regards to the energy trade among these countries, Mexico follows domestic rules by establishing that the state-run company (Pemex) does not allow particular groups to exploit the nation's oil resources. The first paragraph of article 601 of NAFTA establishes that, "The parties confirm their complete respect of their Constitutions" (NAFTA, 1993). This means that as long as the Mexican Constitution continues to prohibit energy exploitation by private initiative, oil trading between Mexico and its cosigners to the Agreement will continue to take place exclusively through Pemex.

Annex 602.3 of the Agreement states that the Mexican state reserves for itself the exploration and drilling of oil and natural gas, as well as trade, transportation, storage, and distribution of crude oil, gas, and goods obtained from the refining or processing of oil and basic petrochemicals. The second paragraph of this annex explicitly mentions the prohibition on investment by private parties in these activities, and only allows for the eventual cross-border trade of services related to these activities when national legislation permits this type of contract. In other words, oil cannot be opened to foreign investment in Mexico through private capital because of the points Mexico made in annex 602.3, and the annex will only allow services to be traded internationally.

Once Mexican laws open up to private investment, this legal deposit can be removed so that the rules on investment are regulated first by what was noted in General Agreement on Trade and Tariffs, such as is established in article 603 of the same Agreement, which specifies that the "parties hereby incorporate the provisions of the General Agreement on Trade and Tariffs (GATT), relative to the prohibitions or restrictions on trade of energy goods or basic petrochemicals," or later they could renegotiate the issues concerning oil among the three countries.

If Mexico eliminates this legal note, and it modifies its Constitution and allows private investment to go into the production and marketing of hydrocarbons, Mexican oil sovereignty will be subordinated not only to private economic interests but also to legal issues, as the country would be unprotected in any type of risk to energy sovereignty matters and would be at the mercy of international courts (which have traditionally favored the interests of the United States). The courts and international referees would back transnational oil corporations and protect their interests in their investments, and Mexico would have to guarantee adequate measures so that trade could carry on with the fewest possible hindrances. Mexico would thus give up its energy sovereignty and decision making on policy regarding its strategic resources to the corporations and the governments that represent them.

Once the energy reform were approved at the constitutional level, the road back would not be easy and would depend on a major change in the correlation of internal forces in favor of nationalization and a social state guarantor of justice and social equality. If the country's political forces were changed and turned back toward nationalization, they would face a series of legal obstacles,¹⁵ national ones—massive constitutional lawsuits (*amparos*, in Spanish) supported by those who boast huge oil interests—as well as at the international level, where the large powerhouses and large transnational companies have shown that they have an overwhelming, outstanding relative weight in international policy through the

resolutions handled in international courts. To return to a legitimate situation of energy and territorial sovereignty, the General Congress would have to turn into a new Constituting Congress.

The Effects of Denationalization

When a private party joins the game to compete with the state in oil production and distribution, there will be problems deciding what oil profits will be taken by the state and what oil profits will be kept by the private party. By simple definition, what was 100% owned by the state before will now be divided in greater or lesser measure with the private interests, depending on the fiscal regime and the type of contracts used to share in the oil profits. According to the approved energy reform report, in the fourth transitory law, the types of contracts for sharing oil profits are set, which could be: for services, for shared profit or production, or by license. The document also states that among the remuneration modalities, or the way to take over oil profits, we have the following: (1) in cash for the service contracts, (2) with a percentage of the profit for shared-profit contracts, (3) with a percentage of production obtained for shared-production contracts, (4) with the onerous transmission of the hydrocarbons once they have been taken from the ground, for license contracts, or (5) any combination of these (Senado de la República, 2013, p. 277). Finally, even though it only states that “the law will establish the remunerations and contributions that the state productive companies have with the particulars,” according to international experience, the models distributed by contract type, and the fiscal conditions noted in the bill of the Law on Income from Hydrocarbons,¹⁶ we can estimate the huge fiscal and economic hole that the privatization of the oil resources would create.

If foreign investment reaches the amount that the Mexican authorities are anticipating, of U.S.\$2.630 billion annually,¹⁷ with the cost structures and the high levels of operating profits from Pemex Exploration and Drilling that place it as the second most profitable oil company in the world after the state-run Kuwaiti oil company, with a 74% operating profit, there would be U.S.\$133.208 billion in earnings. With the current fiscal regime, where Pemex brings in almost 40% of the national budget, there would be a bleeding of resources to the country of U.S.\$90.684 billion, or 68.1% of total earnings in 2012 (Pemex Annual Report, 2012). The numbers for investment and recovery of the investment are feasible in two ways. First, take as an example that Shell Company has an investment in all its projects at the international level of U.S.\$3.681 billion, and second, that Pemex currently has an investment between U.S.\$1.8 and U.S.\$2.3 billion dollars. With Pemex’s production capability and infrastructure, which does not require much investment in fixed capital, it is feasible that the investment that Pemex used to make would be made completely by the private SOCs, but all the production and earnings would be shared between the government and the company. Just in 2012, Pemex Exploration’s total earnings were approximately U.S.\$100.150 billion, with an investment between U.S.\$1.878 and U.S.\$2.253 billion. Now it would have total earnings for sales of crude oil for U.S.\$133.208 billion, with an investment of U.S.\$2.630 billion, an increase of U.S.\$33 billion in earnings, which equals 337,589 more barrels of oil day, a daily increase in oil production that would reach the highest amount sought after for three years of almost 3 million

Table 4. Simulation of the Fiscal Hole, with Shared-Profits Contracts, Profit Distribution of 60% for the Government and 40% for Private Companies; 50% for the Government and 50% for Private Companies; and Complete Concession to Private Companies (Billions of Dollars)

Concept	Shared-profits regime		Concession
Profits for the government	60%	50%	0%
Total earnings		133.208	
Total net profits		98.573	
Royalties (5%) and income tax (30%)		36.228	
Payment of profits to the government	37.408	31.172	0
Government earnings	73.636	67.400	36.236
% Total earnings	55%	51%	27%
% Total profits	75%	68%	37%
Fiscal hole	17.092	23.328	54.493

Source: Authors, based on Pemex Annual Report (2012).

barrels per day. The main difference would then be the sharing of these earnings with the SOCs, which could imminently lead to a fiscal hole.

If Mexico shared oil earnings with the large SOCs, the percentage of total earnings that now go to the state would vary depending on the type of contract—shared profit, shared production, or concession disguised as a license—from 55% of total earnings to 27%. This means that the fiscal hole, with Pemex's current cost and profit structure, would swing between U.S.\$17.092 and U.S.\$54.493 billion yearly.¹⁸ If denationalization were centralized on giving only shared-profit contracts with an agreement of 50% for the state and 50% for the private parties, the fiscal hole would be for U.S.\$17.092 billion, equal to 1.2 times what the government's fiscal reform is going to take in this year. If denationalization were concentrated completely on concessions, the hole would reach up to U.S.\$54.493 billion, the same as almost the entire debt for the federal government this year and 54% of the fiscal cost of the fiscal bailout of Fobaproa¹⁹ (Table 4).

That would have a huge effect on public finances and would cause generalized chaos when regulating these contracts, pressuring for more cuts in social spending, such as for education, health, and programs to fight poverty, as well as generalized tax increases. Let us just consider that in the first scenario, the one with the fewest negative effects but also the one the SOCs least desire, that all the contracts were shared-profit. The resources of the fiscal hole would be almost the same as twice the amount dedicated to the government strategy "Crusade against Hunger" and three times the budget for the anti-poverty program Opportunities. In the second case, if there were a fiscal hole of U.S.\$54.493 billion, those resources would equal 16 pension programs for adults 65 and older, 10 times the budget for Popular Health Insurance, 21 times the budget for public universities such as the National University of Mexico, and approximately almost double the resources budgeted for Social Security. The fact here is that oil profits would give maximum benefit to private parties—to SOCs—and not to the nation.

Furthermore, the reform allows the oil reserves to be registered in their accounting systems for financial speculation. In its report on Mexico's oil sector,

Business Monitor (2013)²⁰ states that one of the restrictions on investment in the sector is on the impossibility of private corporations to use the reserves on their balance sheets, which has a negative effect on their asset portfolio and financial margins. For purposes of their own speculations with the fictitious capital that is moved on the stock market, they are required to maintain profits by having high levels of replacement rates of oil reserves.

The fifth transitory law of the Decree for Energy Reform establishes that private parties would be able to “report the allocation or corresponding contract and expected benefits for accounting and financial purposes, as long as it is stated in the allocations or contracts that the oil and all the solid, liquid, or gas hydrocarbons found in the ground are property of the nation.” In other words, through sophisticated accounting techniques, Mexico’s oil reserves would be used as a mechanism for financial speculation, for private enrichment and accumulation based on the support and development of international financial capital. This mechanism, known in the financial world as the “register of economic interest,” or booking of exploration and development contracts, consists of estimating the value of the transnational companies’ contracts to turn them into barrels and recognize these barrels as part of their reserves in their accounting balance and financial sheets in the U.S. Securities and Exchange Commission (Rodríguez & Cattán, 2013), with no need to formally transfer ownership of the oil. In other words, besides the operating profits of production, the transnational companies will use Mexico’s oil resources to increase their profits and acquire international credits by having high levels of replacement rates of oil reserves.

Following is a detailed description of the effects of each exploration and drilling contract according to its type.

1. Shared-profit contracts consist of an agreement between the state and the transnational oil corporations to share part of the oil earnings through divvying up the profits from the production and sale of hydrocarbons, which would be done according to the terms established in the contract. The fiscal hole would depend on the percentage that would go to the state and the private corporation. If 60% of the profits went to the government and 40% to the companies, the fiscal hole would be U.S.\$17.092 billion, and if the conditions changed to 50% company and 50% government, the lack of fiscal resources would increase to U.S.\$23.328 billion (Table 4).
2. Production-sharing agreements (PSAs) are instruments that allow the earnings from the sale of hydrocarbons (oil and gas) to be shared between the transnational companies and the state. The advantage over shared-profit contracts lies in the fact that earnings are shared rather than profits, which is of benefit to the private contractor SOCs because the earnings base is always greater than the utilities base. PSAs have been used in Russia,²¹ Tajikistan, Azerbaijan, Ukraine, Yemen, Indonesia, China, Vietnam, Malaysia, Rumania, Angola, India, Egypt, Congo, Ethiopia, Cambodia, Peru, Brazil, Angola, Uganda,²² and Libya.²³ Countries with important margins of economic and political independence such as Russia recover their energy sovereignty under the current worldwide renationalization trend for strategic energy

resources by making changes to the Tax Code and the PSA Law to nullify the shared-production contracts by imposing strict restrictions and obstacles.²⁴

The key mechanism of the PSAs is based on identifying the cost of exploration, drilling, and operating (cost oil). The more the corporations inflate this cost, the higher the total earnings will be for the transnational companies. There are international examples where, of every \$100, 86 stay in the hands of transnational companies because they inflate the total earnings as much as 80%, the cost of recovering the investment. In the same document on energy reform, page 156 makes mention, stating, "The incentive of the companies is to inflate them; to avoid this, the state must establish a very large administrative infrastructure to account for and control them. Even so, many of these contracts end up in the courts. Counting the costs also gives way to corruption" (Cámara de Diputados, 2013). Even though external audits are considered in the ninth transitory law of this decree, the chaos generated by many contracts with different specifications in an environment of generalized government corruption will lead the corporations to inflate costs to get hold of the largest amount of oil profits.

PSAs are also in a situation that could financially represent intermediate earnings rates between the shared-profit contracts and the concessions or, if they have inflated "recovery costs" close to 80%, profitability could be similar to or even greater than with concessions. If the profitability of the transnational companies increases, oil profits for the state diminish. For this reason, in many cases where nationalism is an essential component of the political culture among citizens, such as in Mexico, the companies prefer PSAs to concessions because with concessions the companies have rights over the hydrocarbons, but with PSAs, even though the formal owner is the state, most of the earnings derived from the sale of the hydrocarbon are for foreign companies (Bush & Johnston, 1998; Muttitt, 2006) and, in terms of security over the property—possession of oil profits and over profitability, they are safer than concessions—licenses. It is also widely known in the oil industry that the difference between PSAs and concessions—licenses comes from the appearance of state control over the hydrocarbons that the PSAs provide rather than from anything practical. They therefore have an advantage not only in the discretion of the contracts but also in the manipulation of public opinion about the sovereignty of the country's energy policy, kept up through ownership of the oil and gas, which seem to continue to belong to the nation through state administration (Muttitt, 2006; Walde Thomas, 1995).

Consider that with the current cost recovery regime of 26% over investment that the oil exploration and drilling industry maintains, the fiscal cost would potentially be in the range between U.S.\$16.643 and U.S.\$29.754 billion, in the first case when there is a 60–40 division of the value of production government–private company and, in the second case, when it is 40–60 government–private company (see Table 5).

If the recovery costs rise to 80%, as these companies do in deep-water contracts in the world,²⁵ then the fiscal hole under the schemes mentioned would range between U.S.\$65.853 and U.S.\$69.391 billion. This last number is almost U.S.\$15.026 billion more than with the concession scheme (Table 6). Where the fiscal hole is practically the same as with concessions is when the recovery cost is 60%, where it would be between U.S.\$47.558 and U.S.\$54.696 billion. The key

Table 5. Fiscal Hole with PSAs under Production Costs and Administration Spending Scheme for Pemex Exploration (Costs Recovery of 26%) (Billions of Dollars)

Concept	PSAs: 60% government and 40% company	PSAs: 50% government and 50% company	PSAs: 40% government and 60% company
Total earnings		133.208	
Royalties paid to the government (A)		6.657	
Net earnings		126.544	
Recovery costs 50% (B)		32.900	
Oil profits		93.644	
Government profit (C)	56.183	46.807	37.415
Company profit before taxes	37.453	46.807	56.123
Taxes on profits 30% (D)	11.232	13.974	16.829
Company net profit (E)	26.221	32.757	39.294
Government access to earnings (A + C + D)	74.080	67.468	60.932
Company access to earnings (B + E)	59.123	65.678	72.234
% of government access to earnings	55.60%	50.70%	45.80%
% of company access to earnings	44.40%	49.30%	54.20%
Fiscal hole	16.643	23.198	29.754

Source: Authors, based on Pemex Annual Report (2012); Bush and Johnston (1998).

Table 6. Fiscal Hole with PSAs under Production Costs and Administration Spending Scheme under Deep-Water Regimes (Costs Recovery of 80%) (Billions of Dollars)

Concept	PSAs: 60% government and 40% company	PSAs: 50% government and 50% company	PSAs: 40% government and 60% company
Total earnings		133.208	
Royalties paid to the government (A)		6.657	
Net earnings		126.521	
Recovery cost 80% (B)		101.217	
Oil profit		25.304	
Government profits (C)	15.199	12.652	10.120
Company profit before Taxes	10.120	12.652	15.199
Taxes on profits 30% (D)	3.035	3.832	4.553
Net company profit (E)	7.085	8.858	10.631
Government access to earnings (A + C + D)	24.869	23.140	21.337
Company access to earnings (B + E)	108.340	110.068	111.871
% of government access to earnings	18.70%	17.30%	16.00%
% of company access to earnings	81.30%	82.60%	84.00%
Fiscal hole oil drilling	65.853	67.633	69.391

Source: Authors, based on Pemex Annual Report (2012); Bush and Johnston (1998).

point of PSAs is in the recovery cost and, in much less fashion, in the division of earnings or net sales of royalties and recovery costs. The differences between PSAs and concessions practically cannot exist on the financial plane, as Johnston (1994) notes, "The terminology is certainly distinct, but these systems are really not that different from a financial point of view" (p. 39).

3. With licenses (concessions), although the change to article 27 of the Constitution states that, "regarding oil and solid, liquid, or gas hydrocarbons in the ground, the property of the nation is inalienable and imprescriptible and no concessions will be given," the transitory law for article 4 states that, "Congress will make the necessary changes to the judicial framework so as to make effective the conditions of this Decree, among them, to regulate the hiring modalities which could be: for services, shared profits or production, or licenses." The concession or licensing system gives individual transnational corporations or consortiums of these companies licenses for Exploration and Production of hydrocarbons (oil or gas). The license allows the company to take over the entire production and commercialization chain of the hydrocarbon (transportation, refining, and sales) with the only commitment to the state of paying taxes and duties under the current tax code. The main benefit and risk for these systems is in the design of the tax code, given that possession and control of oil profits will be in the hands of the transnational companies. With the changes to article 27 and 28 of the Constitution and changes to the tax code that include considerations in the new law on earnings from hydrocarbons, which is assumed to be for judicial and contractual ends, corporations will be able to take over most after-tax oil profits, having net earnings margins of almost 180% due to the total low tax burden with respect to earnings and profits: 27 and 37%, respectively (Table 4). Consider in comparative terms that the tax burden would be much lower for this type of contracts than in countries such as the United States, which has 20% taxes on royalties and 50% taxes on income, creating an average income tax burden of 50%, or Norway, with a total tax burden of 78%. If all of the contracts were made under a concessions–license scheme, the fiscal hole would be for U.S.\$54.493 billion.

Tables 7 and 8 summarize the effects of the contracts on public finances, income, and company earnings and the possibilities for reinvestment. The base scenario is one of oil managed exclusively by the state through Pemex, compared with several scenarios of contracts with private drillings and a sample example of what an alternative Norway-type tax scheme would be like, where the state maintains exclusive control over oil.²⁶

The contradiction between maximizing oil profits of private companies and those of the state can be clearly identified because, if private companies had greater profits, it would minimize the participation in the state's oil profits and vice versa. Also, contracts with worse conditions for the state in terms of taxes would be those of shared-production depending on the percentage of the recovery costs and the concessions. In every one of the scenarios, the government's earnings as a proportion of total earnings on the sale of oil are less than 68% than in the original scenario without any changes to the Constitution for purposes of denationalization except for the Norway-type tax scenario, where state control is

Table 7. Total Balance in Public Finance (Billions of Dollars)

Current regimen	Shared-profit						Shared-production						
	Norway-type tax code		Pemex		Malaysia		Malaysia		Indonesia		Indonesia		
	60-40	50-50	60-4	50-50	40-6	60-	50-	40-	60	50	40	Concession	
0.0	-13.8	-17.1	-23.3	-16.6	-23.2	-29.8	-38.5	-42.9	-47.4	-65.8	-67.6	-69.4	-54.5
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.2	-13.7	-16.9	-23.2	-16.5	-23.0	-29.6	-38.3	-42.8	-47.2	-65.7	-67.5	-69.2	-54.3

Source: Authors, based on Pemex Annual Report (2012); Bush and Johnston (1998).

Table 8. Summary of Contracts and Scenarios (Billions of Dollars)

Concept	Current code	Norway-type tax code	Shared profit						Shared production								
			Pemex		Malaysia		Indonesia		Malaysia		Indonesia		Indonesia				
			60-40	50-50	60-40	50-50	40-60	60-4	50-5	40-6	60-4	50-5	40-6	Concession			
Total earnings (on oil)																	
Investment																	
Profits		98.57															
Government earnings	90.73	76.89	73.64	67.40	74.09	67.53	60.98	52.22	47.79	43.36	24.88	23.11	21.34	36.24	101.23		
Reinvestment	0.00	9.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Business earnings	N/A	N/A	59.57	65.81	59.12	65.68	72.23	59.12	65.68	72.23	108.30	110.08	111.85	96.97			
% government earning	68%	42.90%	55.30%	50.60%	55.60%	50.70%	45.80%	39.20%	35.90%	32.60%	18.70%	17.30%	16.00%	27.20%			
% government earning	N/A	N/A	44.70%	49.40%	44.40%	49.30%	54.20%	44.40%	49.30%	54.20%	81.30%	82.60%	84.00%	72.80%			
Fiscal hole	0.00	13.84	17.09	23.33	16.64	23.20	29.75	38.51	42.94	47.37	65.85	67.62	69.39	54.49			

Source: Authors, based on Pemex Annual Report (2012); Bush and Johnston (1998).

maintained over hydrocarbons but with possibilities for reinvestment, compatible with a completely progressive tax code with no privileges or special tax treatment, such as tax consolidation.²⁷

Conclusions

This article shows evidence that the denationalization of Pemex has dire consequences on energy sovereignty and negative effects on taxes in fiscal resources from oil. Even though Pemex has a high level of efficiency that places it as one of the most efficient corporations in terms of operating profits, this situation would be dismantled definitely with the energy reform. The deliberate denationalization measures begun in the 1990s with a tax regime for extractive industries and aspects such as the separation of the business unit were fundamental in undercapitalization and generating the impression among public opinion of an inefficient company with high prices for energy, such as for gasoline.

The elimination of state exclusivity on the exploration of and drilling for oil will bring about serious, significant consequences for energy sovereignty and tax matters. With the dismantling of the Constitution of 1917, the production of hydrocarbons will be carried out according to the energy needs of the United States and to the benefit of the large SOCs with whom the oil profits will be shared. The different scenarios of the fiscal impact with the entrance of the large SOCs into Mexican territory show the contradiction between maximizing private oil profits and state profits, leading to a fiscal hole in the government of between U.S.\$17.092 and U.S.\$69.391 billion, which would have to be covered through higher taxes, debt, or a reduction in government spending.

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Notes

¹In the United Commissions of Constitutional Points, Energy, and Legislative Studies of the Senate of the Republic, which the Chamber of Deputies and most local congresses approved with no changes, articles 25, 27, and 28 of the Constitution of the United States of Mexico are reformed and added to. There is no analysis of the social and economic effects of the denationalization of the energy industry.

²The conversions of Mexican pesos to U.S. dollars were done according to the exchange rate on November 11, 2013.

³One example to consider is that the production cost per barrel of oil varies between U.S.\$4 and 5, whereas the sale price could be as high as U.S.\$100. The average price of a barrel of oil in April 2012 was U.S.\$101.5, according to CESOP (2013b).

⁴The data are from 2012. On average, from 2008 to 2012, fiscal income that the government took from Pemex for duties and taxes was 122% with respect to operating profits.

⁵In December 1995, Congress reformed the Budget, Accounting, and Public Spending Law, as well as the General Public Debt Law, articles 30 and 18, respectively. These reforms gave way to the PIDIREGAS projects, deferred investment projects in spending. The reforms were applied beginning in the 1996 tax year.

⁶The PIDIREGAS projects force public entities to acquire the productive assets built by private companies (direct investment) or to finance projects where the assets are private property and, if there is an eventuality contemplated in the contracts, the entity has the authority to acquire the good or not (conditioned investment). When the projects go into effect, the obligations begin to be paid through budget resources generated by Pemex, whose partial amount is reflected in the budget and spending, given that only the payment of the depreciation makes up part of the budgeted public investment. Due to the amount of PIDREGAS' debt, the 2008 oil reform agreed that the total amount of this debt registered as a liability of state-run companies such as Pemex would be considered public debt in the future.

⁷The report by Business Monitor (2013) states that, "... a subcontracting model, known as a PEP contract, allows companies to be compensated with fixed sums of money, paid only in cash, or more recently on a set price-per-barrel fee" (p. 30). The section called "Market Overview" in this report can also be consulted (p. 30) regarding the inability of these reforms to "encourage investment."

⁸Pemex Exploration and Production is for exploration and drilling of oil and natural gas and the transport, storage, distribution, and commercialization of the products mentioned and derived ones; Pemex Refining carries out the industrial processes of refining, elaboration of oil products and derived products that are susceptible to serving as basic industrial raw materials; Pemex-Gas and Basic Petrochemicals is responsible for processing natural gas, liquids from natural gas, and artificial gas, as well as storage, distribution, and commercialization; and Pemex-Petrochemicals is responsible for elaborating petrochemicals whose products do not make up part of the basic petrochemical industry, and their storage, distribution, and commercialization.

⁹According to his calculations, spending on the administration of Pemex from 1992 to 1993, the year of the disincorporation into subsidiaries, doubled, going from U.S.\$207 to U.S.\$460 million.

¹⁰SOCs can also be found in literature as Independent Oil Companies.

¹¹The methodologies used in Hartley and Medlock's (2013) work were nonparametric data envelopment analysis and parametric stochastic frontier analysis.

¹²A more precise exercise, but not necessarily one with more substantial results, would mean comparing accessibility to basic consumer goods in both countries, comparing buying ability with average salaries, by sector or industry, with workers earning minimum wage and taking into account the role of exchange rates in the relative loss or gain of purchasing power for Mexican workers.

¹³Maximum production in 2004 was 3.382 million barrels per day (SENER, 2010).

¹⁴See <http://www.eia.gov/todayinenergy/detail.cfm?id=7530#>.

¹⁵For example, judicially, the principle of no retroactivity sustained both in international law and in the same principle established in the dogmatic part of the Mexican Constitution would have to be faced.

¹⁶On surface rights, see articles 7 and 13 of the bill on earnings from hydrocarbons; on royalties as a percentage of the value of production, see articles 7 and 14 of this initiative, and on income taxes, see article 7 and articles 15 to 19.

¹⁷The U.S.\$35 billion is taken from the declarations made by the General Director of Petróleos Mexicanos, Emilio Lozoya, at the 11th business summit in Guadalajara, Jalisco, on October 23, 2013.

¹⁸If we consider the PSAs with recovery costs of up to 80% in deep-waters, the fiscal hole could be as high as U.S.\$69.346 billion, dropping oil earnings tax collection for the state from 68% of all total business earnings to just 16%. This scenario is analyzed in the case of the PSAs.

¹⁹For concessions, the value of the fiscal cost was obtained by charging 5% for royalties or duties and 30% for Income Taxes. The calculations were done without sharing profits or production.

²⁰See the annual Business Monitor (2013, p. 31).

²¹In Russia, the shared-production contract schemes are mainly in the gas industry, which is considered strategic for national development.

²²In Uganda, given the legal restrictions to knowing what the terms of each shared-production contract are, even though the government states earnings of between 67.5 and 74.2% of the total, Credit Suisse analysis of Heritage Oil states that the range is between 55 and 67% (Akankwasa, 2012).

²³For Libya, with negotiations of up to 40% of the production retained, consult Global Energy Market Research: Libya (2012, pp. 3–4).

²⁴See Grigoryev, 2007, pp. 126–131.

²⁵The example Bush and Johnston (1998) use for this case is Indonesia, whose recovery cost at this time was 80%. According to the authors, when oil drilling in the Gulf of Mexico takes place in deep-sea waters, the limits on operating and production costs should be 80% (p. 47). This is because the probability of finding oil is 1 in 5, so the companies must be allowed to deduct the losses they suffer if they do not find any oil.

²⁶To create Chart 7, the tax on the use of fossil fuels that will go into effect in 2014 was taken into account. It was approved as part of the tax reform proposed by the Mexican government in October 2013.

²⁷Consider that if the fiscal consolidation regime, today called the Optional Regime for Associations, were to disappear, it would be approximately U.S.\$57 billion.

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