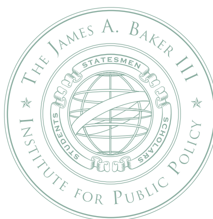
THE FUTURE OF OIL IN MEXICO

/ EL FUTURO DEL SECTOR PETROLERO EN MÉXICO

Oil and U.S.–Mexico Bilateral Relations

Joe Barnes



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Oil and U.S.-Mexico Bilateral Relations

By

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Prepared for the study
"The Future of Oil in Mexico/El futuro del sector petrolero en México"
sponsored by the
James A. Baker III Institute for Public Policy
and
The Mexican Studies Programme at Nuffield College, Oxford University

April 29, 2011

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STUDY ACKNOWLEDGMENTS

The Energy Forum and the Latin American Initiative of the James A. Baker III Institute for Public Policy, as well as the Mexican Studies Programme at Nuffield College, Oxford University would like to thank Richard Gilder for his support of the study. The contributions by study researchers and writers are further acknowledged.

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The James A. Baker III Institute for Public Policy would like to thank the sponsors of the Baker Institute Energy Forum for their generous support of the Energy Forum.

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About the Study: The Future of Oil in Mexico/ El futuro del sector petrolero en México

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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I. Introduction[1]

Mexico, a major exporter of oil, appears poised to become a net importer, perhaps as early as the middle of this decade.

How concerned should the United States be by the uncertain future of the Mexican oil sector? What should the United States do, if anything, to promote reform of Mexico's ailing petroleum industry? This paper suggests a few tentative answers to these questions. We will examine Mexico's role as a major producer, exporter, and consumer of petroleum; discuss the importance of Mexican oil for the U.S. economy; and assess the potential impact of a decline in Mexican production for global petroleum markets. We will briefly address the recent history of bilateral relations between the two countries. We will also attempt—again briefly— to assess the current importance of energy in those relations.

Our approach explicitly adopts a U.S. perspective on these issues; the view from Mexico is covered at length elsewhere in this study.[2] In particular, we will not address, except in passing, either current proposals for reform of Mexico's state-owned oil company, Petroleos Mexicanas (Pemex), nor the salience of the petroleum sector in Mexican politics. Nor will we assess recent developments that have, on the margin, moved the Mexican oil sector in a more open direction, notably a December 2010 Mexican Supreme Court decision permitting Pemex to issue incentive-based contracts. Lastly, our focus will be on petroleum, not natural gas.[3] The United States is, in relative terms, a modest net importer of natural gas, most of which comes from Canada. The ongoing expansion of U.S. natural gas production, due in large part to exploitation of shale gas, has helped to close projected future gaps between domestic production and consumption.[4] For

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[1] The author would like to thank James Coan, Emilio Longoria, and Esther Rios for their assistance in researching this paper. He would also like to extend his appreciation to Amy Myers Jaffe, Erika de la Garza, and David Mares for their invaluable suggestions.

[2] In particular, see Isidro Morales, "The Energy Factor in Mexico-U.S. Relations" and "Energy Trade and Security Issues at the Mexico-U.S. Border" (papers for The Future of Oil in Mexico/El futuro del sector petrolero en México study conducted by the Baker Institute Energy Forum and Oxford University, 2011).

[3] Rogelio López-Velarde and Ruben Almaraz, "Supreme Court Gives All-Clear to New Incentive-Based Contracts," *International Law Office* newsletter (January 17, 2011): http://www.internationallawoffice.com/newsletters/detail.aspx?g=5f25e827-30cc-4718-995e-bdd145712e1d.

[4] Amy Myers Jaffe, "Shale Gas Is Going to Rock the World," *The Wall Street Journal*, May 10, 2010, http://online.wsj.com/article/SB10001424052702303491304575187880596301668.html.

the United States, natural gas simply does not possess the foreign policy importance of petroleum.

A note on data: Unless otherwise stated, all statistics in this paper are drawn from the Energy Information Administration (EIA) of the U.S. Department of Energy.[5]

II. U.S.-Mexico Relations: Background

U.S.-Mexico relations have been shaped by the fundamental asymmetry of power between the two countries. The United States is easily the world's most powerful nation, with a vast military apparatus, important alliances in strategic regions, and unparalleled influence in the diplomatic realm. It also boasts the world's largest national economy. U.S. gross domestic product (GDP) exceeds Mexico's by a factor of 10; U.S. per capita GDP is more than three times as high. Mexico may not be a particularly poor country by world standards; it is, for instance, among the richest in Latin America. But Mexico's per capita GDP figures conceal high levels of income inequality and stubborn poverty.[6] Moreover, Mexico's recent economic performance has been, by any standard, poor. Its economy has been buffeted by periodic crisis and volatile growth. Indeed, over the last 30 years, Mexican per capita GDP growth has actually trailed that of the United States.[7] Conventional economic development theory, by contrast, would have predicted a convergence.

There is no sign, in Mexico, of the robust growth rates found in parts of Asia. China, for instance, averaged more than 9% real growth between 2000 and 2010; India's growth in real GDP, at about 7.5% during the same period, was less spectacular but nonetheless impressive.[8] Mexico's real GDP growth, in contrast, lagged at a disappointing 1.7%. Factor in population growth rate of roughly 1%, and it appears that the 2000s were very much another "lost decade" for the Mexican economy. The North American Free Trade Agreement (NAFTA) of 1994,

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[5] "U.S. Energy Information Administration," http://www.eia.doe.gov.
[6] It should be noted, however, that the United States has high level of income inequality as well.
[7] "Economic survey of Mexico 2007: Economic performance and key challenges," in *Economic Survey of Mexico*, OECD (2007), http://www.oecd.org/document/53/0,3343,en_2649_34569_39413109_1_1_1_1,00.html.
[8] Matthew Shane, "'Real Historical Gross Domestic Product (GDP) and Growth Rates of GDP' for Baseline Countries/Regions (in billions of 2005 U.S. dollars) 1969-2010," December 22, 2010, http://www.ers.usda.gov/data/macroeconomics/Data/HistoricalRealGDPValues.xls.

might, in fact, have been a boon for the Mexican economy, but it has signally failed to place the country upon a sustainable trajectory of higher growth.

The asymmetry of power between the two countries, it should be stressed, does not imply that the United States can impose its will on Mexico. The energy sector, the subject of this study, is an illustrative case in point. In two important instances—the Mexican nationalization of the oil industry in 1938 and the negotiations leading to NAFTA—the United States ultimately yielded to the Mexican position. We discuss both at greater length below.

Moreover, the fundamental imbalance between the two countries exists within the context of increasing interdependence. Economically, the United States and Mexico have never been so closely intertwined. Trade across the 2,000-mile border is huge and much in Mexico's favor. In 2009—a year, it should be noted, of poor economic performance in both countries—Mexican exports to the United States were US$177 billion; U.S. exports to Mexico were US$129 billion. The United States has run a trade deficit with Mexico every year since 1994.[9]

The U.S.-Mexico border area represents a highly populated and, in many ways, unique region in its own right.[10] The region—which consists of four U.S. and six Mexican states—is home to 83 million people. This is larger than the population of Germany. If the 10 border states were one country, the region (which include U.S. economic powerhouses California and Texas) would generate a GDP of more than US$3 trillion, making it one of the largest economies in the world.[11]

Mexican emigration to the United States, both legal and illegal, continues to play an important economic role for both countries. For the United States, Mexican immigration provides a nearby source of cheap, unskilled and semi-skilled labor; for Mexico, emigration eases unemployment,

[9] "Trade in Goods with Mexico," U.S. Census Bureau, 2010, http://www.census.gov/foreign-trade/balance/c2010.html.
[10] "Developing the U.S.-Mexico Border Region for a Prosperous and Secure Relationship," Baker Institute, April 2009, http://bakerinstitute.org/publications/LAI-pub-BorderSecPREnglish-041509.pdf.
[11] "Member States," XXVIII Border Governors Conference, http://www.gobernadoresfronterizos2010.org/2010_Governors_Conference/member_states_BorderRegion.asp.

generates dollar remittances, and mitigates potential social unrest associated with Mexico's poor economic performance.

Official relations between Washington and Mexico are, in a word, friendly. The end of the Cold War resolved intermittent tensions between Washington and Mexico City on the latter's commitment to non-alignment. The advent of major economic reforms, first under center-left Presidents de la Madrid and Salinas, and continuing with center-right Presidents Fox and Calderón, has narrowed ideological differences between the two countries. So has Mexico's emergence as a multiparty democracy. NAFTA—though still a subject of criticism in both countries and beset by lingering controversies, notably restrictions on Mexican freight trucks entering the United States—appears to be a permanent keystone of the bilateral relationship.[12] As a candidate for the U.S. Democratic Party presidential nomination in 2008, then-U.S. Senator Barack Obama suggested the need to renegotiate the agreement. At the time, observers believed the suggestion to be mere political rhetoric.[13] They were right. The Obama administration has made no steps to reopen the agreement. A major potential challenge to the U.S.-Mexico relationship— border security in the wake of the September 11 attacks—was managed without undue damage to diplomatic and economic relations between the two countries. Though bilateral strains emerged at times, cooperation in intelligence-gathering and closer scrutiny of individuals and freight crossing the border improved. But the September 11 attacks, on balance, slowed progress toward a more open border; at a minimum, the terrorist threat strengthened the arguments of those seeking to limit migration to the United States.

Still, it appears that NAFTA, now more than 15 years old, may represent a high-water mark of U.S.-Mexico cooperation. Trade and investment have expanded since the treaty was signed. So has cooperation in such areas as security, the environment, and even energy, though, as will be discussed, that issue is more complicated. Overall progress, however, has been glacial.[14] In particular, efforts to lay the groundwork for substantially closer economic integration—through a customs' union, for instance—have been stillborn. The Security and Prosperity Partnership

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[12] The trucking dispute may finally be approaching resolution. See "NAFTA's Unfinished Business," *The New York Times*, March 11, 2011.
[13] Kevin Drum, "Keep and Eye on Free Trade," *The Washington Monthly*, March 4, 2008.
[14] See Carol Wise, "Unfulfilled Promise," in *Requiem or Revival: the Promise of North American Integration*, ed. Isabel Studer and Carol Wise (Washington DC: Brookings Institute Press, 2007).

(SPP) among the United States, Mexico, and Canada was announced with much fanfare in 2005. SPP Working Groups published some interesting papers. There were a couple summits. But today the SPP is dead; even its website is inactive.

The U.S.-Mexico relationship has traditionally ranked rather low as a U.S. policy priority. All recent incoming U.S. presidents offer rhetorical tribute to the centrality of U.S.-Mexico ties. All find themselves consumed by other foreign policy issues. President Obama is a case in point. He met Mexican president Felipe Calderón before his inauguration. He visited Mexico in April 2009; Calderón visited the United States the next month. They have continued to meet; they keep in regular contact. But there is little doubt that the Obama administration's foreign policy focus is elsewhere. The ongoing economic downturn has put cooperation with other major economies at the very top of the Obama administration's agenda. U.S. combat forces are engaged in Iraq and Afghanistan. The United States is conducting military missions in Yemen and Pakistan. Washington is leading an international effort to halt Iran from developing nuclear weapons. The Obama administration has launched yet another round of Israeli-Palestinian talks. Popular unrest has swept much of the Arab world, toppling dictatorships and creating huge uncertainty in the region and in the United States. And, as this paper goes to print, the United States has intervened in Libya's nascent civil war on behalf of opponents of the Gaddafi regime. From Washington's perspective, U.S.-Mexico relations simply lack the urgency of these and many other issues.

There are nonetheless two issues that have leapt to the forefront. Both are related to border security. The first, of course, is illegal immigration. This is not the place to discuss in detail the ebb and flow of immigration as a domestic political issue in the United States. Suffice it to say that recent years have seen a sharp rise in anti-immigration sentiment. The restrictive law enacted by the state of Arizona in April 2010 best exemplifies this increase. The legislation expands the power of police to detain individuals suspected of being in the United States illegally. The Arizona law is very popular, particularly among conservatives, and other states are moving to emulate it.[15] This upsurge in concern, ironically enough, has occurred just as Mexican illegal immigration into the United States has waned because of poor employment prospects

[15] Daniel B. Wood, "After Arizona, why are 10 states considering immigration bills?" *Christian Science Monitor*, May 10, 2010.

associated with the U.S. recession. The political sensitivity of the issue is extreme. President Obama, for instance, has—despite repeated promises— failed to introduce a plan for comprehensive immigration reform. His Homeland Security Department has significantly stepped up border enforcement, deportations of illegal immigrants, and audits of firms suspected of hiring undocumented aliens.[16] Republicans, for their part, are split into anti-immigrant and pro-business factions; President George W. Bush's own unsuccessful immigration proposal received a barrage of criticism within his own party. In the current environment, the possibility of more liberalized immigration is, to put it very mildly, remote. Indeed, pro-immigration interests in the United States will be hard pressed to avert more severe measures to tighten the border and crack down on illegal aliens currently in the United States.

Much of the recent furor over immigration is associated with a second pressing bilateral issue: drug-related violence in Mexico. This violence has not spread across the border to any significant extent; indeed, major U.S. cities along the U.S.-Mexico border are among the least violent of U.S. metropolitan areas.[17] But the prospect of significant cross-border violence is of grave concern, particularly in U.S. states adjacent to Mexico; needless to say these worries can be— and, indeed, are—used for partisan purposes.

Leaked U.S. State Department cables suggest that the United States is worried about Mexico's ability to combat drug cartels.[18] Certainly, concern about Mexican drug violence has helped drive U.S. support, under Presidents Bush and Obama, for Mexican efforts to suppress drug-related violence. The United States is providing more than a billion dollars worth of equipment to Mexico under the Merida Initiative announced by leaders of the United States, Mexico, and Central American countries in 2007. It is important to put this assistance into perspective. The total funds committed over the initial three-year period of the initiative are less than what the United States spent *weekly* on the war in Afghanistan in 2010.

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[16] "Secretary Napolitano Announces Record-breaking Immigration Enforcement Statistics Achieved under the Obama Administration," Department of Homeland Security, October 6, 2010, http://www.dhs.gov/ynews/releases/pr_1286389936778.shtm.
[17] "AP: Mexico-US Border Actually Very Safe," *CBS News*, June 3, 2010, http://www.cbsnews.com/stories/2010/06/03/world/main6543656.shtml.
[18] "Wikileaks Cables: U.S. Mexico Drug War Fears Revealed," *BBC News*, December 3, 2010, http://www.bbc.co.uk/news/world-latin-america-11906758.

Fundamentally, the upsurge in Mexican violence is attributable to U.S. inability to a) sufficiently reduce the demand for illegal drugs in the United States by recreational users and addicts alike and b) adequately diminish the availability of illegal drugs through domestic law enforcement, despite decades of crackdowns and high incarceration levels for drug-related offences. In many ways, Mexico, like Colombia before it, is collateral damage in the U.S. war on drugs. Ironically, a significant portion of the weapons used by drug traffickers in Mexico is smuggled from the United States.[19] U.S. attitudes toward drug liberalization may be evolving, but there is no sign yet of an end to the "War on Drugs" declared by President Richard Nixon in 1971.

One tragic event sums up the drug-guns-death nexus now shaping U.S.-Mexico relations. In early 2010, U.S. Immigration and Customs Enforcement agent Jaime Zapata was murdered in northern Mexico, presumably by individuals associated with drug cartels. The gun used to kill him was bought in Dallas, Texas.[20]

To sum up: U.S.-Mexico relations are positive. NAFTA remains the keystone of the relationship. U.S.-Mexico issues tend to rank low among U.S. foreign policy priorities. To the extent that such issues carry weight in Washington, they are dominated by illegal immigration and drug-related violence in Mexico. Where does petroleum fit in this picture?

III. U.S.-Mexico Relations: Oil

Petroleum was a major bone of contention in 20th century U.S.-Mexico relations. U.S. firms were early and important actors in the development of the Mexican petroleum sector. During the 1920s, Mexico became a major oil producer and exporter. A number of factors, however, including political instability, a paucity of new finds, and more attractive investment opportunities elsewhere—notably Venezuela—led to declining production by the early 1930s.

The 1938 nationalization of the Mexico petroleum sector—including the operations of U.S. firms working there—is a signal moment in the history of Mexico and an important milestone for the

[19] William Booth, "U.S. struggles to stop flow of guns to Mexico," *Washington Post*, October 7, 2010.
[20] Aamer Madhani, "With U.S.-Mexican Relations Tense, Calderon and Obama Talk," *National Journal,* March 3, 2011.

United States. In Mexico's case, it embodied a resource nationalism that continues to shape the country's economy and politics to this day. For the United States, Mexico represented one of the first of a series of nationalizations elsewhere—Venezuela, Iran, Saudi Arabia —that would, over the course of half a century, influence the international oil environment.

The 1938 nationalizations caused a short, sharp rise in tensions between Mexico City and Washington. But the Roosevelt administration put pressure on U.S. companies to negotiate compensation. A deal was struck in 1943 in which U.S. firms received far less than they had expected. The Roosevelt administration's approach was driven by a number of factors. Deterioration in U.S.-Mexico relations would mark a setback for the administration's "Good Neighbor Policy," which was intended to signal a break with the more confrontational and interventionist Latin American policies of the administration's Republican predecessors. More importantly, the prospect of rising conflict in Europe and Asia put a premium on keeping U.S.-Mexico relations on an even keel. All senior members of the Administration could remember the Zimmerman telegram of 1917, which contained an offer by Imperial Germany to support Mexican territorial claims against the United States in exchange for Mexican support in Germany's war effort.[21] Given the geopolitical imperatives of the moment, the Roosevelt administration was in no mood to support U.S. companies at the expense of a neutral Mexico to the South. A template would be set for future U.S. response to nationalizations. It would be one, by and large, of accommodation.

The 1970s saw the emergence of Mexico, yet again, as a major oil producer and exporter. Production rose from 500,000 barrels per day (b/d) in 1973 to three million b/d a decade later. This was a welcome development for the United States, now a major oil importer experiencing a period of high instability in international petroleum markets. During the 1980s, Mexico became a major supplier of petroleum to the United States. In 1973, Mexican oil exports to the United States were trivial. A decade later, they had reached 800,000 b/d. Mexican efforts to cap the percentage of exports going to the United States fell by the wayside. As will be discussed below, Mexico remains a major supplier of petroleum to the United States.

[21] Roosevelt himself was assistant secretary of the Navy for the duration of World War I.

NAFTA revealed the abiding sensitivity of energy in Mexico. Negotiations led to essentially two agreements when it came to energy: a liberal one between the United States and Canada; and a restrictive one between Mexico and the United States. While NAFTA substantially liberalized trade in energy, investment in oil was another matter. At one level, the Mexican government was extremely successful in what one observer called getting to "Five Nos" on energy, specifically: no foreign investment in the exploration, exploitation and refining of oil in Mexico; no risk contacts with payments in oil reserves; no energy supply commitments; no liberalization of gas imports; and no foreign retail gasoline outlets.[22] U.S. negotiators were unable to wring significant concessions from their Mexican counterparts on these points, and the United States realized that demanding substantial liberalization of foreign participation in the Mexican energy sector would be a deal breaker. In the end, Washington by and large accommodated itself to Mexico City's position on foreign investment. NAFTA, nonetheless, might have played an important role in encouraging subsequent incremental reform of Mexico's petroleum sector.[23]

Energy trade besides oil has picked up since NAFTA, particularly for natural gas. Mexico is a large net importer of gas from the U.S., on net importing almost 15% of its natural gas consumption from the U.S. in 2009. [24] U.S. exports of natural gas to Mexico have increased more than seven-fold since 1994. Mexico has also substantially increased its exports of electricity to the U.S. and has run a trade surplus in electricity since 2003. However, cross-border electricity sales are an insignificant part of the electricity mix of each country, accounting for 0.03% of U.S. and 0.3% of Mexican consumption, respectively.[25]

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[22] Antonio Ortiz Mena, "Getting to 'No': Defending Against Demands in NAFTA," (paper for the Developing Countries and the Trade Negotiation Process project, 2003), http://www.ruig-gian.org/research/outputs/output.php?ID=120.

[23] Morales, "The Energy Factor in Mexico-U.S. Relations."

[24] Mexican imports data from "US Natural Gas Exports by Country," U.S. Energy Information Administration, http://www.eia.doe.gov/dnav/ng/ng_move_expc_s1_a.htm. Exports data from "U.S. Natural Gas Exports by Country," U.S. Energy Information Administration, http://www.eia.doe.gov/dnav/ng/ng_move_impc_s1_m.htm. Meanwhile, Mexican consumption data is from "Mexico," U.S. Energy Information Administration, http://www.eia.doe.gov/countries/country-data.cfm?fips=MX.

[25] "Electric Power Industry – U.S. Electricity Imports from and Electricity Exports to Canada and Mexico," U.S. Energy Information Administration, http://www.eia.doe.gov/cneaf/electricity/epa/epat6p3.html is calculated using U.S. data from "Electric Power Industry – U.S. Electricity Imports from and Electricity Exports to Canada and Mexico," U.S. Energy Information Administration, http://www.eia.doe.gov/cneaf/electricity/epa/epat6p3.html and Mexican data from "Mexico," U.S. Energy Information Administration, http://www.eia.doe.gov/countries/country-data.cfm?fips=MX.

The so-called "Western Gap" also illustrates the importance of resource nationalism for Mexico.[26] Formal agreement on the division of this once-disputed area in the Gulf of Mexico was reached in 2000. A decade later, Mexico and the United States have still failed to develop a plan for joint exploration and exploitation of this potentially important region. A 10-year moratorium was declared in 2000, and then extended in 2010 to 2014 by Presidents Calderón and Obama. There is no shortage of models on how to manage areas where reservoirs cross national boundaries. Agreements between Kuwait and Saudi Arabia, as well as the United Kingdom and Norway, are just two of the more prominent examples. The constitutional and political questions related to direct foreign involvement in exploitation of Mexican resources have clearly hampered progress in the development of the Western Gap, though Mexico's lack of technical expertise has also played an important role.[27]

IV. Mexico and Global Oil Markets

The U.S. Department of Energy, among others, projects that Mexico may soon become a net importer of oil.[28] The proximate cause: a sustained decline in production, associated with the exhaustion of existing major fields and slow progress in exploiting new ones. Reasons for this state of affairs include insufficient investment, inadequate technology, and the inefficiency of Mexico's oil monopoly, Pemex.

Why is the decline in Mexican production important? Mexico remains a significant producer, exporter, and—though, this is often overlooked—consumer of petroleum.[29] In 2009, its petroleum production was the seventh highest in the world, well below what could be called giant producers—Saudi Arabia, Russia, and the United States—but firmly among countries with substantial output in oil.

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[26] See http://www.boemre.gov/international/Mexico.htm.

[27] There is also an "Eastern Gap," where Mexico, Cuba, and U.S. claim overlap. Unlike the Western Gap, division of the Eastern Gap has not yet been negotiated.

[28] See "Mexico – Background," U.S. Energy Information Administration, http://www.eia.doe.gov/countries/cab.cfm?fips=MX.

[29] All data from "Countries," U.S. Energy Information Administration, http://www.eia.doe.gov/countries/. Mexico's and Azerbaijan's net oil export figures come from EIA country data, available at "Mexico," U.S. Energy Information Administration, http://www.eia.doe.gov/countries/country-data.cfm?fips=MX and "Azerbaijan," U.S. Energy Information Administration, http://www.eia.doe.gov/countries/country-data.cfm?fips=AJ.

Table 1. Top World Oil Producers, 2009 (thousand barrels per day)

Rank	Country	Production
1	Russia	9,934
2	Saudi Arabia	9,760
3	United States	9,141
4	Iran	4,177
5	China	3,996
6	Canada	3,294
7	**Mexico**	**3,001**
8	UAE	2,795
9	Brazil	2,577
10	Kuwait	2,496
11	Venezuela	2,471
12	Iraq	2,400
13	Norway	2,350
14	Nigeria	2,211
15	Algeria	2,086

Source: Energy Information Administration

Mexico has also been among the world's most significant oil exporting countries, though its status has diminished. As shown in Table 2, it ranked 16th in net exports in 2009.[30] Most countries with larger net exports than Mexico were members of the Organization of the Petroleum Exporting Countries (OPEC), but there were four non-member countries ahead of Mexico—Russia, Norway, Kazakhstan, and Canada. Mexico is not in the same category as the two giant exporters, Saudi Arabia and Russia, but it is nonetheless a player in international oil markets.

[30] According to the EIA, Mexican production in 2010 fell about 18,500 b/d from its 2009 levels to 2.983 million b/d, while consumption increased by roughly 56,300 b/d to 2.141 million b/d. Thus, net exports fell about 75,000 b/d to 842,000 b/d. The tables presented use 2009 data because some of the data for other countries were forecasts at the time of writing this paper.

Table 2. Top World Net Oil Exporters, 2009 (thousand barrels per day)

Rank	Country	Production
1	Saudi Arabia	7,322
2	Russia	7,194
3	Iran	2,486
4	UAE	2,303
5	Norway	2,132
6	Kuwait	2,124
7	Nigeria	1,939
8	Angola	1,878
9	Algeria	1,767
10	Iraq	1,764
11	Venezuela	1,748
12	Libya	1,525
13	Kazakhstan	1,299
14	Canada	1,144
15	Qatar	1,066
16	**Mexico**	**917**
17	Azerbaijan	912

Source: Energy Information Administration

Often overlooked is Mexico's role as a major consumer of petroleum. Table 3 shows that it ranked 11th in consumption in 2009. This was well below the world's largest consumers (the United States and, far behind it, China), but about the same as France and ahead of the United Kingdom and Italy. While the projected declines in Mexican oil exports are largely attributable to an overall reduction in output, increased domestic consumption also plays a role. This is exacerbated by Mexico's extremely high dependence on petroleum in its fuel mix. This means, ironically, that a period of robust Mexican economic growth might, absent an uptick in production, hasten the reduction of exports, as domestic consumption tends to rise with economic growth. Whether Mexico can sustain such an increase in GDP in the face of a decline in oil production is another question. While Mexican GDP is not as dependent upon oil production as in some other major exporters, petroleum exports still represent 15% of total export earnings.

Table 3. Top World Oil Consumers, 2009 (thousand barrels per day)

Rank	Country	Production
1	United States	18,771
2	China	8,324
3	Japan	4,443
4	India	3,110
5	Russia	2,740
6	Brazil	2,522
7	Germany	2,440
8	Saudi Arabia	2,438
9	South Korea	2,185
10	Canada	2,151
11	**Mexico**	**2,084**
12	France	1,828
13	Iran	1,691
14	United Kingdom	1,667
15	Italy	1,528

Source: Energy Information Administration

V. Mexico and U.S. Supply

Mexico is a major supplier of U.S. petroleum imports. In 2009, the United States imported about 1.2 million b/d of Mexican crude. This put Mexico only behind Canada (2.5 million b/d) and ahead of Venezuela (1.1 million b/d), Saudi Arabia (1.0 million b/d), and Nigeria (0.8 million b/d) among petroleum suppliers to the United States. Throughout much of 2000s, Mexico has been among the top three oil suppliers to the United States.

Oil imports are important—very important—for the U.S. economy, which consumes about 25% of all world petroleum. By 1960, the United States was already a modest net importer of oil. Since then, imports as a percentage of total U.S. consumption have steadily grown from roughly 20% at the beginning of the period to about 65% in 2008. The reasons are two-fold. First there has been a decline in U.S. crude oil production, which peaked at 9.6 million b/d in 1970. Second, there has been a long-term increase in U.S. petroleum consumption, which roughly doubled between 1960 and 2008. There are signs, however, that both U.S. production and consumption have stabilized. Indeed, the EIA projects that U.S. consumption will be roughly constant through

2035; it sees domestic production rising very modestly. This projection, however, still implies substantial U.S. oil imports for the foreseeable future. (Such forecasts must be used with care; 25 years is a long time in terms of technological innovation, domestic political change, and geopolitical shifts. Still, when looking to the future, they can provide a useful, if limited, tool for analysis.)

VI. Mexico and U.S. Energy Security

What part does Mexico play in U.S. energy security? For a major oil importing country like the United States, energy security is best, if roughly, defined as a stable flow of reasonably priced oil to international markets. The United States has a liberalized domestic oil market; imbalances in supply and demand will not lead to physical shortages but changes in price. High prices and high price volatility—particularly the latter—can damage economic growth. What constitutes "high prices" and "high price volatility" is, of course, a complicated issue; we will not address it here.[31]

All things being equal, an increased world supply of oil tends to have downward pressure on prices. It is therefore in the interest of a major importing nation to see increased exploration and exploitation of petroleum around the world. Petroleum varies by quality; distance affects transportation prices. But, in general, prices are set by world supply and demand. At one level, therefore, it does not matter a great deal where the United States sources its oil. There are routine calls for the United States to reduce its dependence on Persian Gulf oil. Such calls are largely fatuous. Even if the United States did not import one barrel of oil from the Persian Gulf, the price we paid would still be determined, in large part, by production in that region.

Increased diversity of world supply will tend—again, all other things being equal —to reduce volatility. There are any numbers of factors that have disrupted, or could disrupt, supplies to world markets and, by extension, the United States. They include closure of important transit points, such as the Straits of Hormuz; natural disasters; man-made accidents; warfare; terrorism; and domestic instability. (See the sharp rise in prices when unrest struck Libya, a middling oil

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[31] See Daniel Yergin, "Energy Security Markets," in *Energy and Security: Toward a New Foreign Policy Strategy*, ed. Jan Kalicki and David L. Goldwyn (Baltimore: John Hopkins University Press, 2005). He provides a useful summary of contemporary thinking about energy security.

producer.) As a general principle, the higher the number of oil producers, the less likely it is that a shortfall in one exporting country, whatever its cause, will lead to a sharp spike in prices. The security of supply offered by diversity clearly has its limits. Were, for whatever reason, giant oil exporters like Saudi Arabia and Russia to exit world markets, the effect would be severe, perhaps even catastrophic.

There is yet another element to diversity of supply. OPEC's ability to set prices is constrained by any number of factors. These include overall world supply and demand, discipline within the cartel, and decisions by importing countries to use their strategic reserves. But the cartel has proved, over time, to be a powerful force in international oil markets. To this extent, increases in non-OPEC production are particularly welcome to the United States, insofar as they can constrain, at least in theory, the ability of OPEC to raise prices by cutting production. In general, for a significant importer like the United States, the more oil exporters—and especially the more non-OPEC exporters—the better.

There is one final twist to energy security. This is the idea that higher oil prices tend to strengthen regimes that are hostile to U.S. interests. Iran and Sudan usually lead the list; Venezuela often follows; countries like Saudi Arabia and Russia occasionally make an appearance, depending upon the ideological persuasion of the person drawing up the list. There is no doubt that oil revenues can be used to bolster authoritarian regimes, and that some of these regimes can support policies that the United States opposes. However, this argument has two large problems. First, higher oil prices also tend to strengthen governments that the United States supports. Iraq and Mexico are two signal cases in point. Second, as noted below, attempts to restrict oil revenues to unfriendly regimes can undermine U.S. efforts to enhance world production and restrain price increases.

This discussion of oil security must be tempered by recognition that energy security is only one among many U.S. objectives, both domestic and foreign. At home, our concern for increasing world supply, for instance, does not stop us from limiting exploitation of significant domestic reserves in Alaska and many offshore areas. Abroad, we have used sanctions—on Iraq and Libya in the past and today on Iran—for the precise purpose of constraining their output. Moreover, the

United States has itself engaged in policies—the invasion of Iraq in 2003—that have removed, at least temporarily, major supplies from reaching international oil markets. The same could happen were the United States to attack Iran's nuclear facilities or give Israel a green light to do so. And, whatever our concerns about OPEC, the United States continues to see Saudi Arabia—by far the most important player in the cartel—as an indispensable strategic partner.

Even with these caveats, however, it is clear that Mexican oil exports serve U.S. energy security interests. All things being equal, sustained Mexican production enhances both the quantity and diversity of world supply. Moreover, as noted, U.S.-Mexico relations are friendly. There is no risk, as with the case of increased Iranian production, for instance, that enhanced Mexican oil revenues will be put to purposes injurious to other U.S. interests. And, insofar as Mexico is not a member of OPEC, its production will, at the margin, constrain the ability of the cartel to limit supply and therefore raise prices.[32]

Still, it is important to put the projected decline in Mexican oil production into perspective. Mexico may be an important producer, but its petroleum output represents less than 5% of the world total. In terms of the Western Hemisphere, any decline in its production over the next 25 years is likely to offset by increased productions elsewhere, notably Brazil and Canada. An eventual turnaround in Venezuelan production—almost certainly associated with Hugo Chavez's exit from power—is also possible. Venezuela, unlike Mexico, possesses vast oil reserves; it could, under the right circumstances, significantly increase its output. Venezuela, not Mexico, today surely represents the great "lost opportunity" of hemispheric petroleum production. Opening up additional U.S. coastal areas and nature preserves in Alaska could also help partially offset the decline in Mexico. By way of yet another comparison: The projected decline in Mexican production is significantly less than the decline in North Sea production between 1999 and 2007. This is not to downplay the importance for the United States of volume and diversity of supply to world oil markets. It does suggest, however, that the slow decline of Mexican production is unlikely to precipitate a crisis in international oil markets. This is particularly true as many observers are already predicting decreasing Mexican output. World markets are well

[32] It should be noted, however, that Mexico has cooperated with OPEC in the past. Should world oil prices experience a sharp decline, Mexico would be sorely tempted to do so again.

aware of the troubled condition of Mexico's oil sector. The only surprise would be if Mexico were to *increase* its petroleum output.

The United States, it should be noted, would benefit commercially were Mexico to liberalize investment in its energy sector. U.S firms already provide substantial equipment and services to Pemex. The United States has promoted this trade through direct loans and guarantees extended by the Export-Import Bank of the United States; these have totaled US$8.3 billion since 1998, making Mexico the largest recipient of the bank's programs.[33] Were direct investment in the oil sector to be liberalized, major U.S. energy firms would presumably be interested; the decreasing share of world reserves held by international oil companies has limited their investment opportunities. Offshore drilling in the Gulf of Mexico is one area where U.S. firms would possess a clear comparative advantage, in terms of extensive experience, advanced technologies, and geographic proximity.

But we should not exaggerate the commercial advantages to U.S. firms were Mexico to open up its petroleum sector to more foreign involvement. U.S. firms would face competition from elsewhere—notably Brazil's state-controlled Petrobras, which already has extensive experience in the Gulf of Mexico. Moreover, the most important economic stake in reviving Mexican production—volume and diversity of world supply—does not require the extensive participation of U.S. companies. Indeed, from a long-term perspective, it might be best for the United States were Mexico to open up first to non-U.S. firms. Such an approach could diminish political obstacles; assuage the fears of the Mexican public; demonstrate that foreign participation can work to Mexico's advantage; and set a precedent for later, major U.S. participation. Needless to say, no U.S. administration would ever publicly support such an idea. But Washington would be wise, indeed, to restrain its response to any Mexican moves in the direction of increasing its cooperation with firms such as Petrobras.

[33] "Ex-Im Bank Approves Financing to Support More Than $1 Billion of U.S. Exports to Mexico's Pemex," Export-Import Bank of the United States, April 23, 2009, http://www.exim.gov/pressrelease.cfm/D89347BA-EAAC-F210-E74E87239B14CAF0.

VII. U.S.-Mexico Relations: A Question of Stability

In summary, the slow decline of Mexican oil production, in and of itself, is unlikely to have a dramatic impact on international petroleum markets or prompt any dramatic response from the United States. There is, however, one set of circumstances which this decline would capture Washington's attention. That is the extent to which it contributes to significant instability in Mexico.

There is already a short- to medium-term risk of substantial instability in Mexico. As noted, the country is enduring extremely high levels of drug-related violence. Even if the Mexican government eventually succeeds in its efforts to suppress this violence, the process is likely to be expensive, bloody, and corrosive in terms of human rights. A period of feeble economic growth, combined with a fiscal crisis associated with a drop in revenues from Pemex, could create a "perfect storm" south of the border. If this were to occur, Washington would have no choice but to respond.

In the longer-term, the United States has a clear interest in robust economic growth and fiscal sustainability in Mexico.[34] There is at least one major example of the U.S. coming to Mexico's aid in an economic emergency. In 1994, the United States extended US$20 billion in loan guarantees to Mexico when the peso collapsed, in large part to make U.S. creditors whole.[35] Not least, a healthy Mexican economy would reduce the flow of illegal immigration to the United States. To the extent that prospects for such growth and sustainability are enhanced by reform of Pemex, the United States should be supportive. It might be best, in terms of U.S. economic and commercial interests, were Pemex to be fully privatized, but even partial reforms would be welcome. Not all national oil companies are created equal: Pemex's development into something like Norway's Statol would mark an important improvement.[36]

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[34] There is a certain irony – and, indeed, hypocrisy – in U.S. concerns for Mexico's fiscal sustainability. Our own fiscal track-record is, of course, less than stellar. But we possess a unique advantage over Mexico: our debt is denominated in dollars, the world's reserve currency. In extremis, we can simply print dollars and inflate much of our debt away.
[35] The loan guarantees were widely unpopular in the U.S. Congress.
[36] See Peter R. Hartley and Kenneth B. Medlock III, "The Revenue Efficiency of Pemex: A Comparative Approach" (paper for The Future of Oil In Mexico/El futuro del sector petrolero en México study conducted by the Baker Institute Energy Forum and Oxford University, 2011).

Nonetheless, the ability of the United States to encourage reform is severely limited. Mexican leaders are extremely sensitive to perceived "bullying" by the United States. Too public a U.S. position—particularly on opening up Mexican oil fields to foreign development—might actually undermine reform efforts.

In any instance, the United States should be modest in its calls for reform in Mexico. After all, Mexico is not the only North American country with constitutional and cultural constraints on good public policy. As noted, the United States appears incapable of stopping the flow of weapons to Mexico. Recently queried on this, President Obama was reduced to spluttering about the Second Amendment to the U.S. Constitution.[37]

Both Mexico and the United States should avoid fetishizing the oil sector. Petroleum production is a means, not an end—a reality often forgotten by resource nationalists and industry experts alike. In Mexico, petroleum production is only one sector of an economy that has failed to deliver broad-based, sustained growth. The importance of oil is, to a large degree, a manifestation of Mexico's inability to develop an adequate taxation regime. We would not be discussing a potential crisis associated with declining production if the Mexican government were not so dependent on it for revenue.

Ultimately, Mexicans must determine the future of the Mexican oil sector. They have by far the greatest economic stake in the development of their countries energy industry. It is they who must bear whatever costs—in terms of higher sectoral unemployment or steeper personal taxation— that restructuring the Mexican energy sector might entail. It is they who must endorse and, perhaps more importantly, sustain the political compromises necessary to attain reform.

[37] Brian Montopoli, "Obama: I Believe in the Second Amendment," *CBS News,* March 3, 2011, http://www.cbsnews.com/8301-503544_162-20038924-503544.html.