THE NEW GEOPOLITICS
LATIN AMERICA

JULY 2018

LOWER FOR LONGER: YEARS OF LOW PRICES REWRITE FOREIGN INVESTMENT IN SOUTH AMERICAN OIL AND GAS

SAMANTHA GROSS

B | Foreign Policy at BROOKINGS

LOWER FOR LONGER: YEARS OF LOW PRICES REWRITE FOREIGN INVESTMENT IN SOUTH AMERICAN OIL AND GAS

SAMANTHA GROSS

EXECUTIVE SUMMARY

Oil prices have been on a wild ride for the last decade—very high from 2008 through 2014, followed by a crash from 2015 to 2017. One might think that very high oil prices are always a boon for the industry. However, high oil prices increase the competition for resources and can bring about unproductive behavior on the part of resource holders. Resource nationalism is a particular challenge—the desire to maximize government take from oil and gas development can stifle foreign investment and reduce governments' overall oil and gas income.

Several countries in South America demonstrate how government policy and foreign investment can interact with an extreme price environment. Argentina and Brazil largely missed the boat during the price boom, with resource nationalism and political uncertainty primarily to blame. The political winds have shifted along with falling prices, and policies more favorable to foreign investment are bringing greater development of the world-class oil and gas resources in these two countries. Colombia followed a different path. Its business-friendly policies made it a darling of the industry during the boom years, but its smaller resource base has made it less attractive when prices are lower. Additionally, community resistance to oil and gas development grew during the boom years and laws governing community engagement have been strengthened.

Guyana represents a special case: Significant oil and gas resources were recently discovered off the shore of one of the smallest and poorest countries in South America. Guyana signed the original contract for development at a time of relatively low oil prices, when its resource potential was completely unknown. This contract is therefore quite generous to the developer. Now that the resource base is better understood, exploration is less risky, and oil prices are relatively higher, Guyana will be able to drive a harder bargain in future contracts. The key is to find a happy medium between reaping maximum benefit for the Guyanese people and attracting sufficient investment. A moderate oil price environment makes this balance easier.

INTRODUCTION

Oil prices have been on a wild ride for the past decade. Prices were mostly above $100 per barrel from 2008 through 2014, only to crash to less than $50 per barrel from late 2014 through late 2017 as abundant new supply, especially from the United States, came online. Prices have been rising again since then, as production cuts from the Organization of the Petroleum Exporting Countries (OPEC) and Russia have tightened supply and reduced global oil inventories.

One might think that a very high oil price is always a boon for the industry. However, high oil prices can increase the competition for resources and bring about unproductive behavior on the part of resource holders. Counterintuitively, moderate prices can be better for the overall health of the oil and gas industry and bring more rational decisionmaking. Despite the recent rise in prices, oil exploration has not recovered from the exuberance of 2008 through 2014.

This paper explores how today's moderate oil price environment is playing out in four South American countries: Argentina, Brazil, Colombia, and Guyana. The oil industry is expanding, for now, in Argentina and Brazil. Both countries have implemented policies that have greatly improved the environment for oil and gas investment, but these policies are facing economic headwinds in Argentina and political headwinds in Brazil. The oil price drop was less kind to Colombia. Its welcoming investment environment made it a darling of the oil industry while prices were high, but its modest reserve base is now reducing investment in a time of moderate prices. Guyana provides an example where a recent very large discovery is creating an oil and gas industry and infrastructure from scratch. Guyana can learn about how to attract (and discourage) investment from the other countries in the region.

Regardless of the price level, the oil and gas industry focuses on the fundamentals when making investment decisions: resource quality and above-ground conditions. The size and development cost of the resource are always the most important considerations in oil and gas development, although companies favor larger and less expensive resources during times of lower prices. The above-ground political and investment environment are also crucial. Good macroeconomic management, a lack of corruption, sanctity of contracts, and a steady regulatory environment encourage investment.

On the other hand, times of very high oil prices can bring political challenges to resource-dependent countries. The potential benefits of high oil prices are clear, but resource nationalism took hold in a number of countries during the price boom, with a desire to maximize governments' profits from oil and gas development and to keep as much revenue as possible within each country. This impulse makes sense, but taken too far, such policies can stifle needed foreign direct investment (FDI) and reduce governments' overall income from oil and gas.

Resource nationalism was particularly evident in several South American countries during the oil price boom. High commodity prices, including for oil, contributed to a populist political wave that swept through the region in the 2000s. Argentina and Brazil both experienced this phenomenon, as nationalist policies nearly eliminated FDI in the oil and gas sector. Brazil focused on maximizing control over its own oil and gas resources, while Argentina's economic policies discouraged outside investment in general, not only in oil and gas. Venezuela provides a sad example of populism and resource nationalism at its worst, where the government plundered the oil and gas industry to fund other parts of the economy.

What goes up must come down, and the oil price crash from 2014 to 2017 brought about important changes in South America's oil and gas sector. Today's moderate oil prices have tempered resource nationalism and brought more long-term thinking to government and corporate decisionmaking.

NATIONS IN REBOUND—ARGENTINA AND BRAZIL

Argentina and Brazil are both experiencing a rebound in their oil and gas sectors, encouraged by policy changes that boosted FDI. However, the resource bases of these two nations are very different, resulting in very different kinds of investments. Argentina's new production is occurring in a shale formation, where shorter development cycles and payback times allow a step-by-step approach to development. Conversely, Brazil's resurgence is taking place in the deep-water offshore, requiring companies to make very large, long-term investments to get in the game. In both of these areas, international oil and gas companies are hoping that the move away from populism toward a more investment-friendly environment will persist.

Argentina reaping the benefits of a new resource

Optimism is spreading around the oil and gas sector in Argentina. Changes in government policy are attracting investment to its world-class unconventional oil and gas resources. However, challenges remain in developing a new type of resource at competitive cost. Without foreign capital and expertise, such development would be nearly impossible.

During the Kirchner presidencies, the oil and gas industry suffered along with the larger economy (Néstor Kirchner was president from 2003 to 2007, succeeded by his wife Cristina Fernández de Kirchner from 2007 to 2015). Difficulty in obtaining financing, exchange rate controls, and challenges in repatriating earnings greatly reduced outside investment in Argentina's oil and gas sector.

YPF (in Spanish, Yacimientos Petrolíferos Fiscales) is the leading oil and gas company in Argentina and its history helps to tell the story of oil and gas development there. The government of Argentina created YPF in 1922, as the world's first state-owned oil and gas company. The government privatized YPF in 1993 and the Spanish company Repsol purchased it in 1999. The Argentine government expropriated YPF in 2012, adding fear of expropriation to an already challenging investment environment.[1] YPF and Repsol resolved their legal disputes in early 2014, with the Argentine government agreeing to pay Repsol $5 billion.[2]

President Mauricio Macri took office in 2015, paving the way for reforms and a more positive attitude toward foreign investment. Macri's party consolidated its power with key electoral wins in the October 2017 midterm elections, encouraging investors that his economic reforms will continue. Removing capital controls made Argentina a much better environment for foreign investment. The government removed the last of the controls, a 120-day delay in repatriating funds from Argentina, in early 2017.[3]

---

1 Simon Romero and Raphael Minder, "Argentina to Seize Control of Oil Company," *The New York Times*, April 16, 2012, https://www.nytimes.com/2012/04/17/business/global/argentine-president-to-nationalize-oil-company.html.

2 Tracy Rucinski, Andrés González, and Kevin Gray, "Spain's Repsol agrees to $5 billion settlement with Argentina over YPF," *Reuters*, April 25, 2014, https://www.reuters.com/article/us-repsol-argentina/spains-repsol-agrees-to-5-billion-settlement-with-argentina-over-ypf-idUSBREA1O1LJ20140225.

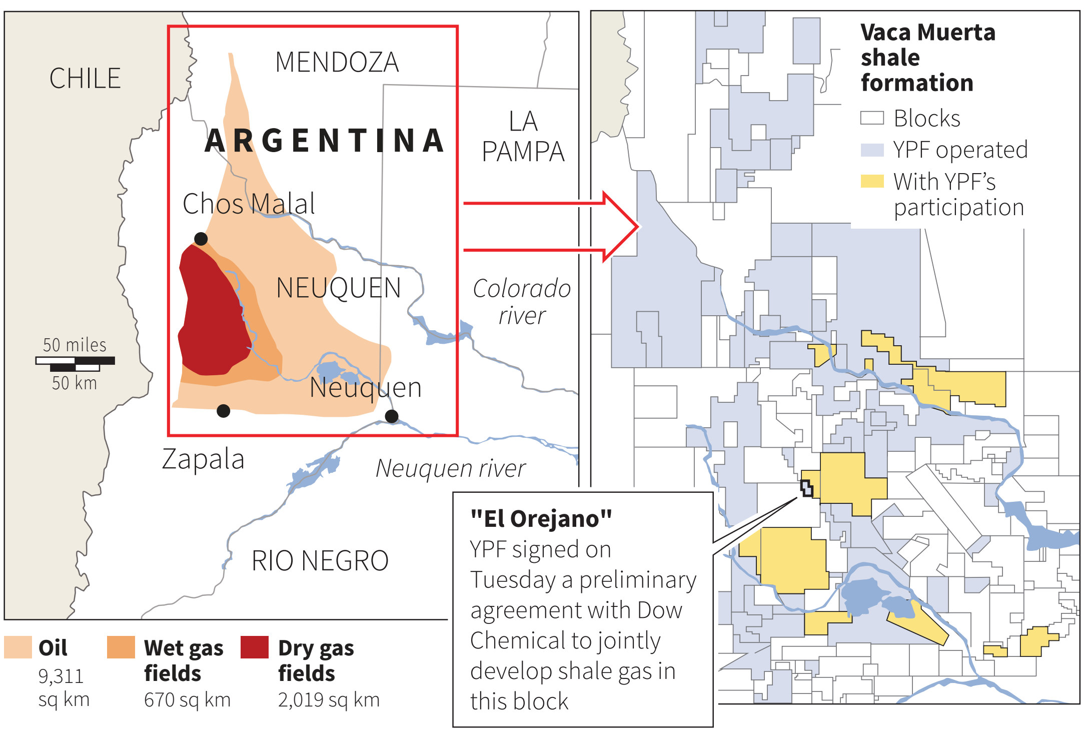
3 Reuters Staff, "Argentina ends holding period for foreign capital," *Reuters*, January 5, 2017, https://www.reuters.com/article/us-argentina-economy/argentina-ends-holding-period-for-foreign-capital-idUSKBN14P2E1.

Argentina has some of the world's largest unconventional oil and gas resources. The Vaca Muerta shale formation (see Figure 1), located in Neuquén Province, holds an estimated 21.2 billion barrels of oil equivalent.[4] The formation is in an area of existing conventional oil and gas production—57 percent of Argentina's natural gas production and 40 percent of its oil production come from the area today—so some of the necessary infrastructure is already in place.[5] The challenge is establishing the overall ecosystem for tight oil and gas development in a new area, including such services as fracking and wastewater management. Economies of scale are important for these services, meaning that costs are likely to drop as production grows. Drilling costs are falling rapidly as development proceeds—cut in half from 2015 to 2017.[6] The central government is also planning rail and road infrastructure to reduce logistics costs, with significant investment from China.[7]

FIGURE 1: ARGENTINA'S VACA MUERTA SHALE DISCOVERY

Argentina's shale resources

Vaca Muerta has caught the attention of international investors because it holds one of the world's biggest deposits of shale resources, with an estimated 23 billion barrels of oil equivalent. Argentina's state-run energy company YPF has concessions on 40 percent of the site.



Sources: Reuters; Non-conventional oil exploration plan for the Neuquen district, YPF

Estudio R. Carrera 28/03/2013 REUTERS

4 BMI Research, *Argentina Oil and Gas Report* Q1 2018, December 2017.

5 Schlumberger, "Vaca Muerta Shale—Taming a Giant," *Schlumberger Oilfield Review* 28 No. 1, January 2016, https://www.slb.com/~/media/Files/resources/oilfield_review/ors16/Jan2016/04_Vaca_Muerta_Shale.pdf.

6 Paola Carvajal, Consulting Principal, Arthur D. Little. Speaking at the Inter-American Dialogue, March 27, 2018.

7 Canning House, "Newsbase—Latam top story: Macri's midterm win a boost for oil investment in Argentina," *Canning House*, October 24. 2017, https://www.canninghouse.org/newsbase-latam-top-story-macri-win-boost-oil-investment-arg/.

To attract investment, the Macri government struck a grand bargain with the oil and gas sector. The government is offering a price of $7.50 per one million British Thermal Units (mmBTU) of natural gas produced from new wells in the Vaca Muerta and Austral basins, declining by $0.50 per mmBTU per year until 2021.[8] This price is greater than recent prices for liquefied natural gas (LNG) delivered to Argentina. However, questions remain about how politically durable this subsidy is at a time when the central government is focused on fiscal discipline, particularly as production grows and the subsidy becomes a greater budgetary strain.

Energy prices and subsidies are becoming an even larger issue as the value of the peso has declined, losing one-quarter of its value in the past year.[9] Energy Minister Juan José Aranguren was ousted during a cabinet shake-up in June 2018. He was popular with energy companies, but unpopular with the public for raising consumer prices for electricity and natural gas. The Macri administration is under strong political pressure to control energy prices amid rising inflation, but at the risk of stifling oil and gas investment.

Additionally, high labor costs continue to be a challenge. As part of the subsidy deal, labor unions in the Neuquén Province signed more flexible contracts, trading a reduction in labor cost for the promise of additional oil and gas development.[10] Strikes had been common in the area, as high inflation strained the relationship between labor and management. The province also agreed to stabilize its tax regime for oil and gas production.[11]

The development of the Vaca Muerta play also depends on energy cooperation with Chile. Argentina became a net gas exporter in 2016, but gas demand is highly seasonal. Today Argentina relies on LNG and imports from Bolivia during the high-demand winter months.[12] In the future, Argentina is likely to export gas to Chile via pipeline in the summer and import regasified LNG from Chile during the winter months when demand is higher.

The industry understands Argentina's past and present fiscal challenges, but the oil and gas resources in the Vaca Muerta are attractive enough to draw investment nonetheless. Unconventional investments recover their costs faster than conventional oil and gas production, meaning that they may be a more palatable investment in an uncertain environment. Additionally, economies of scale in infrastructure and service industry capacity will bring cost reductions over time, potentially bringing both oil and gas from the Vaca Muerta into the cost range of U.S. unconventional resources.[13]

---

8 Reuters Staff, "Argentina clinches deal to attract investment in Vaca Muerta shale," *Reuters*, January 10, 2017, https://www.reuters.com/article/us-argentina-gas/argentina-clinches-deal-to-attract-investment-in-vaca-muerta-shale-idUSKBN14V03N.

9 Benedict Mander, "Macri's energy reverse unnerves Argentina's shale investors," *The Financial Times*, June 28, 2018, https://www.ft.com/content/3158be92-78b3-11e8-bc55-50daf11b720d.

10 "Macri anunció el plan de explotación de Vaca Muerta: 'Esto va a ser una revolución del trabajo,'" *La Nacion*, January 10, 2017, https://www.lanacion.com.ar/1974553-macri-anuncio-el-plan-de-explotacion-de-vaca-muerta-esto-va-a-ser-una-revolucion-del-trabajo.

11 Reuters Staff, "Argentina clinches labor/subsidy deal to attract energy investment," *Reuters*, January 10,2017, https://www.reuters.com/article/argentina-gas/argentina-clinches-labor-subsidy-deal-to-attract-energy-investment-idUSL1N1F00IV.

12 BMI Research, *Argentina Oil and Gas Report* Q1 2018, December 2017.

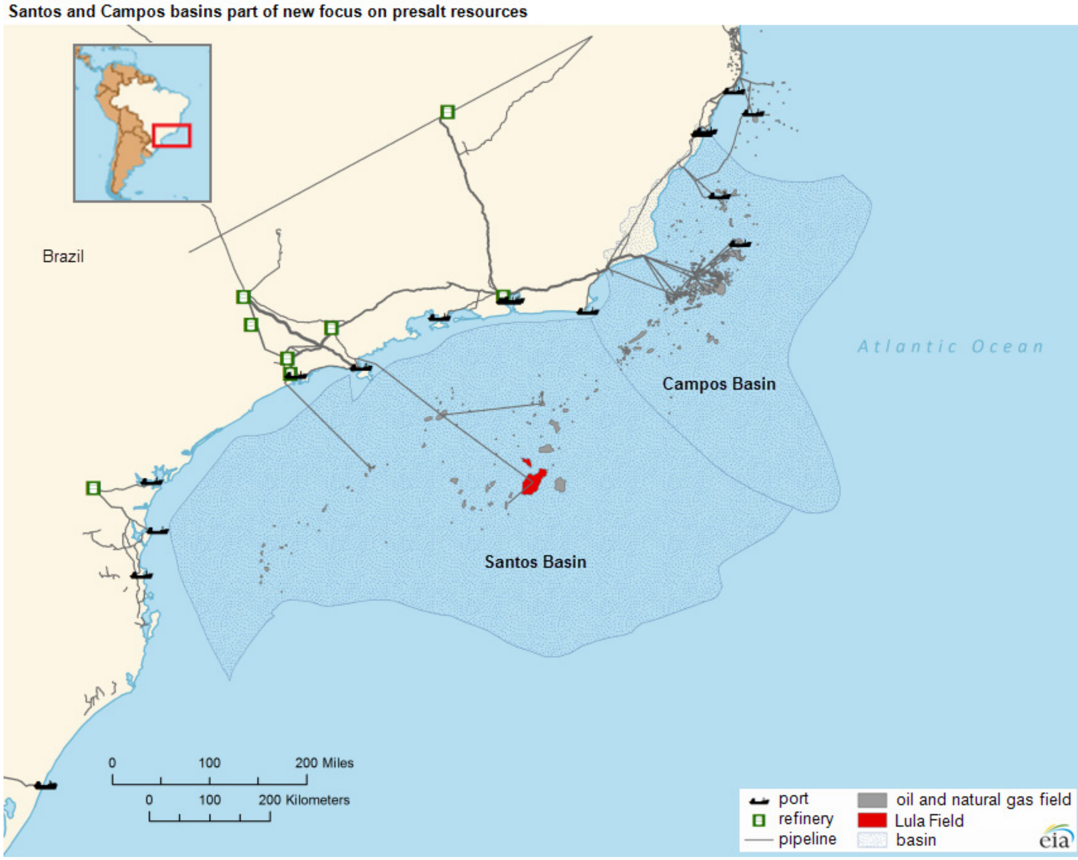
13 Javier Iguacel, "The Role for Gas in an Integrated Americas," Ministry of Energy of Argentina, June 2018, https://www.argentina.gob.ar/sites/default/files/20180627_-_presentacion_ji_og_world_gas_day.pdf.

BRAZILIAN RESURGENCE, BUT WILL IT CONTINUE?

From 2005 to 2007, Brazil's national oil company, Petrobras, discovered significant oil resources in the offshore deep-water pre-salt formation—estimated at 5 to 8 billion barrels of oil equivalent—one of the world's largest oil discoveries in recent years.[14] (See Figure 2.) Pre-salt refers to the location of the oil reservoir, below a layer of salt more than 6,000 feet thick.

FIGURE 2: MAP OF BRAZILIAN PRE-SALT DEEP-WATER OFFSHORE OIL FORMATION

Santos and Campos basins part of new focus on presalt resources



Source: U.S. Energy Information Administration, IHS EDIN.

After the pre-salt discovery, Brazil enacted a number of policies focused on controlling resource development and keeping as much oil and gas revenue as possible within the Brazilian economy. In 2010, the Brazilian government set new rules for development of the pre-salt resource. It took a larger stake in Petrobras, granting it 5 billion barrels of oil from the pre-salt formation in exchange for the greater ownership share.[15] It also required that Petrobras be the operator in all pre-salt development and that it hold a minimum 30 percent stake in all projects.[16] Then-president Luiz Inácio Lula da Silva said these changes were appropriate because operators in the pre-salt would not be taking on exploration risk,

---

14 "Country Analysis Brazil: Beta Version," The U.S. Energy Information Agency, November 21,2017, https://www.eia.gov/beta/international/analysis.cfm?iso=BRA.

15 "Petrobras's record share issue—Now comes the hard bit," *The Economist*, September 24, 2010, https://www.economist.com/americas-view/2010/09/24/now-comes-the-hard-bit.

16 "Country Analysis Brazil: Beta Version," The U.S. Energy Information Agency, November 21,2017, https://www.eia.gov/beta/international/analysis.cfm?iso=BRA.

stating: "You offer risk-sharing contracts when there is risk. In the case of the pre-salt, we are sure."[17] Nonetheless, companies developing the pre-salt would still be accepting substantial operational risk, since accessing the resource requires very deep wells in deep water located far from shore.

Despite the huge resource base and initial optimism, production in Brazil did not take off as planned. Although Petrobras has world-class expertise in deep-water production, it was financially and technically overextended, unable to manage the costly development of the complicated pre-salt resource. In 2016, Petrobras was the world's most indebted company, with total debt of $123 billion.[18] The share of natural resources in FDI in Brazil decreased from its peak in 2010 of 31 percent to 16 percent in 2016—not what one would expect from a country with one of the world's largest oil finds.[19]

Corruption at Petrobras contributed to its financial challenges. Under an investigation that began in 2014, Petrobras executives were charged with bribery and money laundering. Petrobras overpaid for contracts for various services, with the extra money used to finance political campaigns and grease the palms of those involved. Graft and poor management brought extraordinary cost overruns—for example, construction of the Abrue e Lima refinery (also known as the Refinaria do Nordeste, or RNEST) exceeded its original budget by a factor of five. The project is also years behind schedule and only one of its two process trains is operating today, with the other half 80 percent complete.[20] Overall, corruption resulted in more than $8 billion in losses at Petrobras—money not available for oil and gas development. The corruption reached the highest level of the company, with former CEO Aldemir Bendine arrested in July 2017 for requesting bribes from a construction firm.[21]

Brazil also established strict local content rules, with the goal of maximizing the participation of Brazilian businesses in the oil and gas supply chain. These local content laws slowed development and increased development costs, as there was not enough local industry capacity to meet them.

Despite these challenges, a number of recent developments have brought about a resurgence in the Brazilian oil and gas industry, many of them undoing the policies that limited development in the first place. In November 2016, the Brazilian government, under the more pro-business administration of Michel Temer, removed the requirement that Petrobras be the operator in all pre-salt development, as a way to attract outside investment.[22]

---

17 "Brazil's oil boom Filling up the future," *The Economist*, November 5, 2011, https://www.economist.com/briefing/2011/11/05/filling-up-the-future.

18 "Country Analysis Brazil: Beta Version," The U.S. Energy Information Agency, November 21,2017, https://www.eia.gov/beta/international/analysis.cfm?iso=BRA.

19 Economic Commission for Latin America and the Caribbean (ECLAC), Foreign Direct Investment in Latin America and the Caribbean, 2017 (LC/PUB.2017/18-P), Santiago, 2017, https://repositorio.cepal.org/bitstream/handle/11362/42024/4/S1700815_en.pdf.

20 Simon West, "Brazil Petrobras cancels second refinery train at Comperj," ICIS, July 25, 2016, https://www.icis.com/resources/news/2016/07/25/10019369/brazil-petrobras-cancels-second-refinery-train-at-comperj/; Jeff Fick, "Brazil's Petrobras puts four oil refineries, related infrastructure on sales block," S&P Global Platts, April 30, 2018, https://www.spglobal.com/platts/en/market-insights/latest-news/oil/043018-brazils-petrobras-puts-four-oil-refineries-related-infrastructure-on-sales-block.

21 Luciana Magalhaes, "Former Petrobras CEO Aldemir Bendine Arrested in Corruption Probe," *The Wall Street Journal*, July 17, 2017, https://www.wsj.com/articles/former-petrobras-ceo-aldemir-bendine-arrested-in-corruption-probe-1501167139.

22 Ted Rhodes, "Brazil's pre-salt oil reserves: opening up to new operators," *CMS Law Now*, November 18, 2016, http://www.cms-lawnow.com/ealerts/2016/11/brazils-presalt-oil-reserves-opening-up-to-new-operators?_ga=2.71092119.660546157.1493908900-582299354.1481804950.

This change coincided with an agreement among OPEC countries and Russia to pull back production in an attempt to increase oil prices, a good combination to increase confidence in Brazilian development. Additionally, Petrobras is undertaking a divestment plan to allow it to focus on its core competency in offshore oil and gas, leaving it in a better position to participate in development of the pre-salt resource. From 2017 through 2021, Petrobras plans to leave the petrochemicals, fertilizer, and biofuels businesses, which total $45 billion in investment today.[23] Finally, for the bid round conducted in October 2017, Brazil relaxed its local content requirements, by nearly 50 percent in some areas.[24]

In the first bid round that allowed foreign operators, six of eight blocks attracted bids, with winning operators including ExxonMobil, Shell, and Statoil. The winning bidders are those that set aside the maximum amount of production for the Brazilian government. The winners paid signing bonuses totaling $1.9 billion and will pay as much as 80 percent of their oil revenues to the government after they recover their costs.[25] The second auction in June 2018 was similarly successful, with three of four blocks offered attracting bids and as much of 75 percent of revenues pledged to the government.[26] The success of these auctions speaks to the quality of the pre-salt resource, with breakeven costs below $40 per barrel.[27]

Despite these positive developments, the political situation for oil and gas development in Brazil is still tenuous. Petrobras CEO Pedro Parente took the job in May 2016 with a goal of cleaning up corruption and making Petrobras more business-oriented. Under his watch, the government removed fuel subsidies that had kept Brazilian gasoline and diesel prices below international levels. This was relatively easy during the low oil prices of 2016 and 2017, but public discontent rose along with global oil prices in 2018, culminating in an 11-day truckers strike in May 2018. To end the strike, the government subsidized diesel sales and Parente resigned. However, the incident brought the economy to a standstill and demonstrated the Brazilian public's displeasure with Temer's business-friendly reforms.

The policies allowing greater foreign participation in the industry are beginning to deliver benefits, in terms of current and promised government revenue. Brazil's October 2018 presidential election could raise serious challenges to FDI in the oil and gas sector. Former president Lula was a frontrunner in the race until an appeals court in January 2018 upheld his conviction for corruption. He has now begun serving his 12-year sentence. Lula was the author of the nationalist policies that constrained oil and gas development in Brazil and favored bringing them back if he regained power.

---

23 Pedro Parente, Chief Executive Officer, Petrobras. Speech at CERA Week, Houston TX, March 5 2018.

24 Rafael Baptista Baleroni, "Recent developments in the oil and gas industry in Brazil," *Oil and Gas Law News*, June 2017, http://www.cesconbarrieu.com.br/arquivos/15030717330.pdf.

25 Marta Nogueira and Alexandra Alper, "Shell bets big on Brazil as oil majors snap up offshore blocks," *Reuters*, October 27, 2017, https://www.reuters.com/article/us-brazil-oil-auction/shell-bets-big-on-brazil-as-oil-majors-snap-up-offshore-blocks-idUSKBN1CW12W; "Factbox: Winners of Brazil's pre-salt oil round, *Reuters*, October 27, 2017, https://www.reuters.com/article/us-brazil-oil-auction-factbox/factbox-winners-of-brazils-pre-salt-oil-round-idUSKBN1CW2RA.

26 Louis Genot, "Auction of Brazil's pre-salt oil fields earns $807 million," *Phys.org*, June 7, 2018, https://phys.org/news/2018-06-auction-brazil-pre-salt-oil-fields.html.

27 Sabrina Valle and Peter Millard, "Petrobras Says Deep-Water Opening Luring Big Oil to Brazil," *Bloomberg*, October 10, 2016, https://www.bloomberg.com/news/articles/2016-10-10/petrobras-says-deep-water-opening-luring-big-oil-to-brazil.

The two front-runners for the Brazilian presidency oppose the energy reforms. The leader at the time of writing is Jair Bolsonaro, a far-right populist and provocateur who has expressed nostalgia for the Brazilian dictatorship of 1964-85. He has opposed the privatization of state companies during his time in Congress. On the left, Ciro Gomes said in an interview recently that he would expropriate all oil and gas assets that have been sold to foreign companies, "with due compensation."[28] The leading market-friendly candidate, Geraldo Alckmin, has poll numbers in the single digits. He has called for privatizing Petrobras to pay down public debt.[29] The race increasingly looks like one between the far-left and far-right, with neither alternative good for continued development of Brazil's vast oil and gas resources.

FUNDAMENTALS CATCH UP WITH COLOMBIA

Colombia opened its oil and gas sector to outside investment in 2003. During this low oil price period, President Álvaro Uribe enacted a number of reforms to attract oil and gas FDI, including cutting the government's take of oil revenues and creating the National Hydrocarbons Agency (Agencia Nacional de Hidrocarburos, or ANH) to streamline regulation. Colombia also partially privatized its national oil company, Ecopetrol, in 2007. [30]

Unlike its South American neighbors, Colombia did not change its terms during the 2008 to 2014 oil price boom, and it was a darling of the oil industry during that time. Oil production grew rapidly from 2008 through 2013. (See Figure 4.) Yet, since the oil price decline in 2014, there has been a drop off in new exploration and drilling. In 2012, FDI in the oil sector totaled $5.4 billion, 35 percent of Colombia's total FDI. By 2016, that total was down to $2.2 billion and 16 percent of FDI. (See Figure 3.)[31] In contrast with Argentina and Brazil, Colombia's investment environment has become more challenging after the price decline.

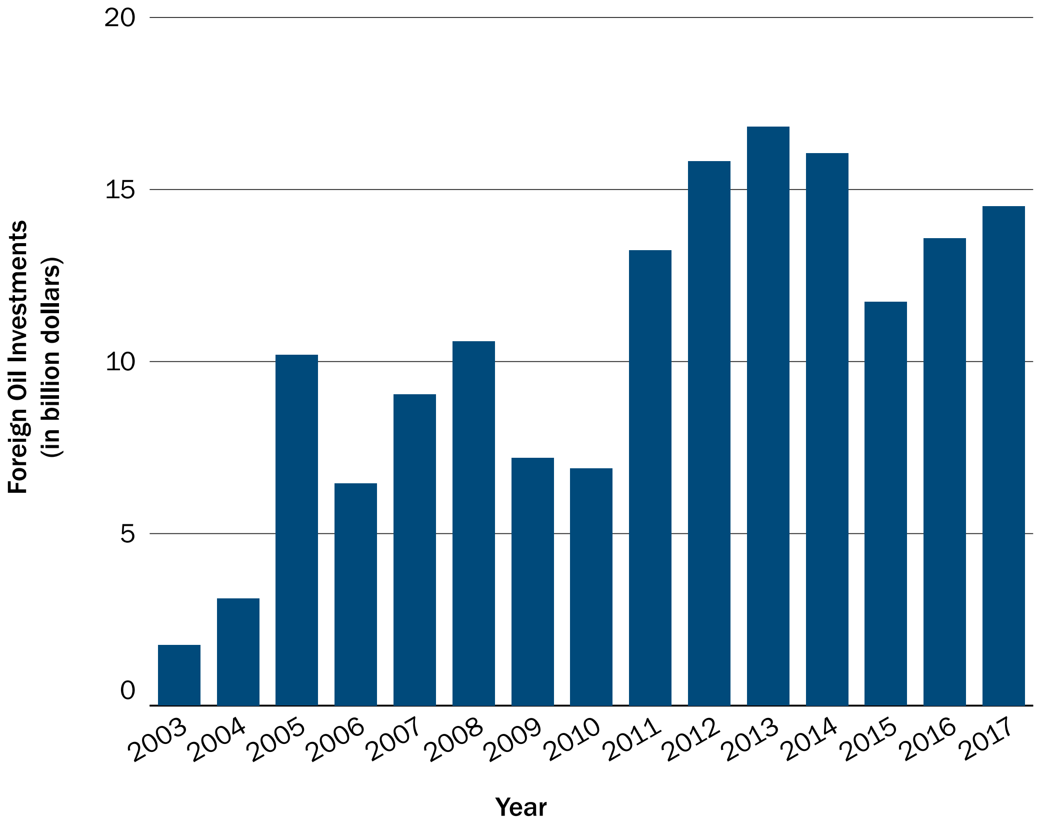
28 Matt Sandy, "AQ INTERVIEW: Ciro Gomes: 'Brazil Cannot Endure a Leftist Government,'" *Americas Quarterly*, June 2018, http://americasquarterly.org/content/aq-interview-ciro-gomes.

29 Reuters Staff, "Likely centrist Brazil presidential contender says he would sell Petrobras," *Reuters*, February 26, 2018, https://www.reuters.com/article/us-brazil-politics-petrobras/likely-centrist-brazil-presidential-contender-says-he-would-sell-petrobras-idUSKCN1GA2SB.

30 Lisa Viscidi, "Colombia's Energy Renaissance," A Working Paper of the Americas Society and Council of the Americas, December 2010, http://www.as-coa.org/sites/default/files/ColombiasEnergyRenaissance.pdf.

31 "Colombia FDI Statistics," Colombia Reports, March 27, 2017, https://colombiareports.com/colombia-fdi-statistics/.

FIGURE 3: FOREIGN DIRECT INVESTMENTS IN THE COLOMBIAN OIL SECTOR



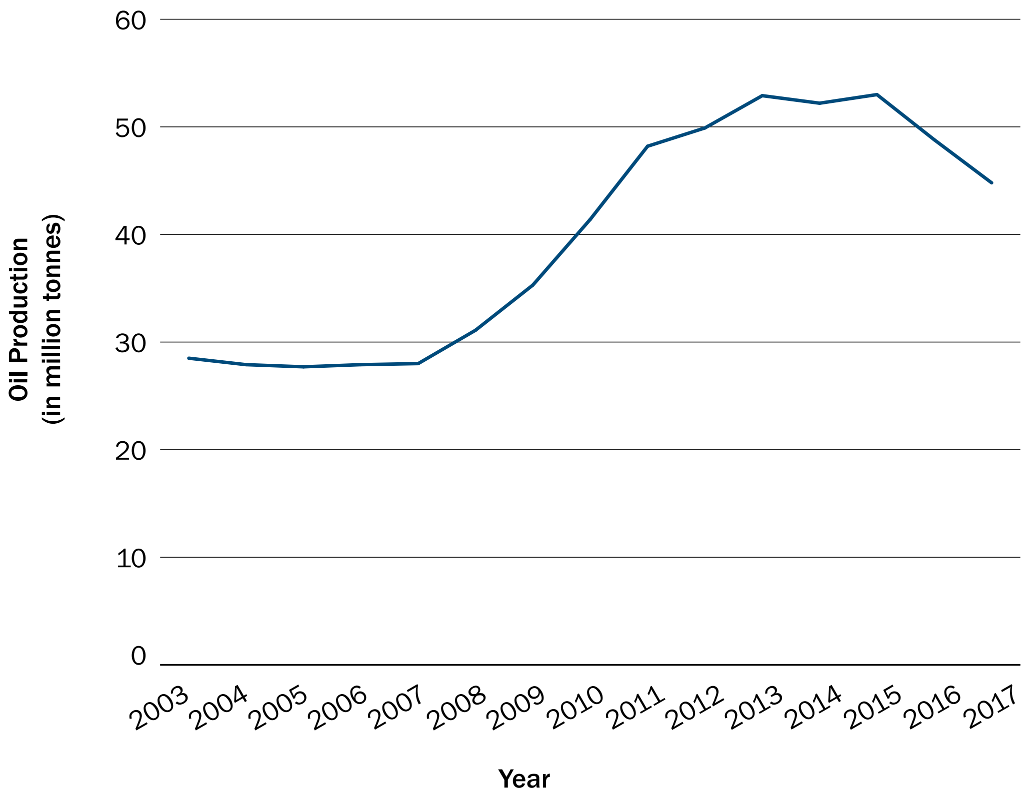
Source: https://colombiareports.com/colombia-fdi-statistics/

The boom during the high-price period was largely due to Colombia's favorable investment environment, rather than its resource base. Today, discoveries, reserves, and production are all decreasing. Colombia was still the fifth-largest crude oil exporter to the United States in 2015.[32] But today it only has four and a half years of reserves remaining at the current rate of production.[33] In today's more modest oil price environment, Colombia's modest resource base means it is being left behind in the competition for investment.

32 "Country Analysis Colombia Beta Version," The U.S. Energy Information Agency, June 29, 2016, https://www.eia.gov/beta/international/analysis.cfm?iso=COL.

33 Lorenzo Morales, "Industrias extractivas y Regulaciones Ambientales en el Posconflicto: Preguntas clave para el nuevo gobierno colombiano," El Dialogo Interamericano, February 2018, https://www.thedialogue.org/wp-content/uploads/2018/02/Colombia-Report-FINAL.pdf (page 4).

FIGURE 4: COLOMBIAN OIL PRODUCTION



Source: BP Statistical Review of World Energy

An additional challenge to furthering oil and gas development in Colombia is growing community resistance. A judicial decision in 2016 gave local communities the right to veto extraction projects. As of December 2017, there were 45 such petitions in progress.[34] Voters overwhelmingly rejected oil and gas and mining in their communities in the five popular consultations that took place in 2017.[35] This community power and the accompanying bureaucratic processes bring uncertainty to Colombia's investment environment. Lower oil prices exacerbated the community-relations challenge. When there was lots of money to go around, community leaders had more incentive to accept and smooth the way for projects. The drop in oil prices, plus a change in 2011 in the way oil and gas royalties were distributed to communities, left some feeling that they are not being adequately compensated for the disruption these projects bring.

The government of President Juan Manuel Santos has primarily focused on the peace process with the Fuerzas Armadas Revolucionarias de Colombia (FARC) rebels. This process could open largely unexplored former conflict areas to development, with the potential to expand Colombia's resource base. However, the concerns of local citizens will have to be considered, and efforts are underway to establish procedures for consultation. In addition, militant groups have waged persistent attacks on oil and

34 Patrick Gillespie, "Venezuelan refugee crisis adds to Colombia's growing challenges," *CNN Money*, February 22, 2018, http://money.cnn.com/2018/02/22/news/economy/colombia-venezuela/index.html.

35 Matthew Bristow, "Colombia Has Oil, but Voters Want to Keep It Underground," *Bloomberg*, September 7, 2017, https://www.bloomberg.com/news/articles/2017-09-07/colombia-needs-oil-colombians-say-no.

natural gas pipelines, leading to supply disruptions. In 2015, the attacks disrupted about 41,000 barrels per day of oil supply.[36] Companies would need assurances that such attacks will not continue.

GUYANA'S RESOURCE BASE BRINGS SIGNIFICANT INVESTMENT

Guyana is one of the poorest and smallest countries in South America, with only 800,000 residents. However, significant oil and gas resources were recently discovered in its deep water offshore. Beginning in 2015 and continuing to the present, an estimated 2 to 3 billion barrels of oil equivalent have been discovered—with the potential to make Guyana one of South America's largest oil producers. Production is planned to begin in 2020 with a floating offshore, production, storage, and offloading facility with capacity of 120,000 barrels per day.[37] To put the discovery into perspective, this level of production would more than double Guyana's export revenues. FDI is critical to developing this new resource.

This discovery represents the beginning of the Guyanese oil and gas industry. The country is starting from scratch in building the infrastructure, regulatory frameworks, and institutions to support oil and gas production. Getting the regulatory frameworks in place while the industry is ramping up is a particular challenge, akin to building an airplane while flying it. The Guyanese government and the oil and gas industry will have slightly different goals—establishing a regulatory structure that maximizes benefit to the Guyanese people (rather than oil company profits) will be crucial as the industry makes investment decisions.

The International Monetary Fund (IMF) has been working with the Guyanese government to improve its legal, fiscal, and regulatory frameworks for oil development. The IMF has raised concerns that the initial deal that Guyana struck with ExxonMobil is too generous by international standards.[38] But ExxonMobil began exploration in 1999 when oil prices were relatively low, and Guyana's resource potential was completely unknown. Now that the resource base is better understood, exploration is less risky, and oil prices are relatively higher, Guyana can and should demand more favorable terms from future contracts.

The discovery of oil and gas resources has the potential to transform the Guyanese economy, but this development is not without challenges. In some ways, these challenges more closely resemble those of less developed countries in Africa and other parts of the world, more than Guyana's South American neighbors. Guyana will face significant challenges in using the oil and gas industry to bring development without the "resource curse," where oil and gas revenues bring concentrated wealth and harm the competitiveness of other industries within the country. Policies that encourage investments in parallel industries can spread the oil and gas wealth and help prevent the resource curse. Local content policies can encourage local development and help local businesses overcome the barriers to entry—such as complicated procurement

---

36 "Country Analysis Colombia Beta Version," The U.S. Energy Information Agency, June 29, 2016, https://www.eia.gov/beta/international/analysis.cfm?iso=COL.

37 "What Lies Beneath Guyana's Petroleum Future," Stratfor Worldview, October 30, 2017, https://worldview.stratfor.com/article/what-lies-beneath-guyanas-petroleum-future.

38 Kevin Crowley, "Exxon Sparks IMF Concern With Weighty Returns in Tiny Guyana," *Bloomberg*, April 9, 2018, https://www.bloomberg.com/news/articles/2018-04-09/exxon-sparks-imf-concern-with-weighty-returns-in-tiny-guyana.

programs—of working with the large multinational oil and gas companies. Additionally, gas from the project may be used to produce power onshore, replacing diesel generation and providing cleaner and less expensive power for development of other industries.

In other areas, Guyana can learn from the experiences of its neighbors. Brazil and Argentina demonstrate the importance of the policy and investment environment, including sanctity of contracts and a lack of corruption. Expropriation risk and capital controls can quickly scare off investors in even the most prospective reserves. Investors like policy and fiscal certainty when making long-term decisions. Colombia demonstrates the importance of community support for natural resource development. Managing the environmental and economic concerns of local communities will be important as Guyana writes the rules for its development. These constituencies need to feel that they are reaping enough rewards from development to overcome the inconveniences it brings. This issue will be somewhat less pressing in Guyana, where production will be located offshore. Nevertheless, environmental concerns about offshore development and community concerns about the footprint and operations of related onshore facilities must be addressed.

CONCLUSION

Resource quality is the most important determinant of oil and gas investment. But great resources alone are not enough—a favorable political environment is also necessary. Argentina and Brazil have both enacted policy reforms recently to make their significant oil and gas resources more attractive for FDI. Both countries are beginning to reap the benefits of these policies. However, such reforms are politically tricky when they are up against populist urges to keep local control over natural resource development. Mexico is also facing such challenges, a topic my colleagues have studied in depth.[39]

Public pressure to enact populist, rent-seeking policies that ultimately limit oil and gas investment is especially strong during times of high resource prices. However, going along with such pressure means that countries can be shut out of investment at exactly the times when they could reap the most benefits. Argentina and Brazil missed the boat during the oil price boom of 2008 through 2014. Even if new investment would not have yielded much production during the price boom, owing to long lead times, governments could have locked in favorable fiscal terms on investment during that time. Instead, they demanded everything and got nothing.

Corruption is a central issue in Brazil's political situation. Widespread corruption in government and Petrobras has destroyed public trust in institutions. With public trust that low, citizens do not believe that allowing oil and gas FDI is to their benefit—it looks like another opportunity for graft.

Guyana must walk a tightrope to develop its significant resources. Guyana needs foreign investment to develop its oil and gas, but must develop a governance and regulatory structure that reassures the public that such development is in their interest. Guyana's original exploration contracts were signed during a low-price period and are quite generous to the oil companies. Now that the resource is better understood and oil prices are a bit higher, Guyana will be able to drive a harder bargain in future

39 Carlos Pascual, David G. Victor, and Rafael Fernandez de Castro, "Will Mexican Energy Reform Survive Political Transition: What Mexicans Think," The Brookings Institution, June 2018, https://www.brookings.edu/research/will-mexican-energy-reform-survive-political-transition/.

contracts. The key is to find a happy medium between reaping maximum benefit for the Guyanese people and attracting investment. A moderate oil price environment makes this balance easier.

Additionally, avoiding corruption and regulatory capture, where the industry has too much say in its own regulation, will be crucial to success. The public must see the benefits of development spread broadly across the population. The history and present situation of Guyana's neighbors provide valuable lessons.

ABOUT THE AUTHOR

Samantha Gross is a fellow in the Cross-Brookings Initiative on Energy and Climate. Her work is focused on the intersection of energy, environment, and policy, including climate policy and international cooperation, energy efficiency, unconventional oil and gas development, regional and global natural gas trade, and the energy-water nexus.

Gross has more than 20 years of experience in energy and environmental affairs. She has been a visiting fellow at the King Abdullah Petroleum Studies and Research Center, where she authored work on clean energy cooperation and on post-Paris climate policy. She was director of the Office of International Climate and Clean Energy at the U.S. Department of Energy. In that role, she directed U.S. activities under the Clean Energy Ministerial, including the secretariat and initiatives focusing on clean energy implementation and access and energy efficiency. Prior to her time at the Department of Energy, Gross was director of integrated research at IHS CERA. She managed the IHS CERA Climate Change and Clean Energy forum and the IHS relationship with the World Economic Forum. She also authored numerous papers on energy and environment topics and was a frequent speaker on these topics. She has also worked at the Government Accountability Office on the Natural Resources and Environment team and as an engineer directing environmental assessment and remediation projects.

Gross holds a Bachelor of Science in chemical engineering from the University of Illinois, a Master of Science in environmental engineering from Stanford, and a Master of Business Administration from the University of California at Berkeley.

ACKNOWLEDGEMENTS

The author would like to thank the following individuals for their assistance and comments on drafts: Jennifer Perron, Ted Piccone, and an anonymous reviewer.

BROOKINGS

The Brookings Institution
1775 Massachusetts Ave., NW
Washington, D.C. 20036
brookings.edu