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CANADA'S OIL AND GAS SECTOR AT RISK?

HOW EXCESSIVE TAXES AND REGULATIONS UNDERMINE OUR COMPETITIVENESS

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HIGHLIGHTS

Canada's oil and natural gas sector is currently going through hard times. Donald Trump, meanwhile, has repeatedly promised to improve the business environment in the United States by reducing the tax and regulatory burden, especially as it affects this sector. As Canada's competitiveness in oil and gas development depends almost entirely on its position relative to that of its powerful neighbour, it is important to understand what is going on right now in the United States and the effects of U.S. policy on our economy.

Chapter 1 – Reasons for Concern about Canada's Competitiveness

- With the third-largest proven oil reserves in the world, Canada ranks fifth among the major oil-producing countries, behind the United States, Saudi Arabia, Russia, and China. When it comes to natural gas, Canada is also in fifth place among producing countries.
- The oil and natural gas sector, which accounts for three-quarters of primary energy produced in Canada, directly generated nearly \$100 billion in GDP in 2015, employed 191,415 people, and contributed \$20.3 billion to government coffers.
- Thanks in large part to the development of shale oil and shale gas, many experts now expect the United States to become self-sufficient in oil and natural gas over the next 20 years.
- Following a sharp reduction in investment in the oil and gas sector in Canada since 2014, with capital spending falling from \$78.4 billion to \$38 billion, a slight recovery was seen in the first two quarters of 2017.
- However, the recovery is nowhere near the same magnitude as in the United States, where capital expenditures in the oil and gas sector in 2017 are expected to increase by 38% compared to 2016, versus a 19% increase in Canada.
- Alberta in particular is experiencing a dizzying downturn, and the regulatory burden seems to be primarily at fault, since it is estimated that its cost will rise by between 12% and 21% in the near future, and even more after 2023, when the carbon tax will be applied to the oil and gas sector.
- The slowing of investment in Canada is evident from the large number of projects that have been suspended or cancelled—four large projects worth a total of \$84 billion this year alone.

Chapter 2 – The Tax System That Applies to Oil and Gas Development

- Overall, the United States has a lower tax burden than Canada and the other G7 countries as a share of GDP, 26.4% versus 31.9% for Canada.
- However, the statutory U.S. corporate tax rate is high in comparison to that of other industrialized countries, averaging 38.9% versus 26.7% for Canada.
- While the effective corporate rate in the United States is generally much lower than the statutory rate, Canada nonetheless maintains a tax advantage in this regard, albeit a smaller one.
- Governments also collect oil and natural gas royalties, reflecting the fact of public ownership of the exploited resources; even in the case of private land in the U.S., the states collect special taxes that are equivalent to royalties.
- Overall, Alberta's royalty regime is seen as being competitive and able to attract new investment.
- In both Canada and the United States, the tax system also takes into account the particular nature of resource development, notably the fact that this economic sector has an activity cycle that is spread over many years.
- In terms of taxation, Canada appears competitive when it comes to oil and gas activities, but less so than at first glance, and a major reform of corporate taxation by the U.S. government would change the situation significantly.

Chapter 3 – Comparing Regulatory Environments

- While a recent study evaluated the overall cost of regulation across all sectors at \$37.1 billion in Canada, it amounted to \$205 billion in the United States, which represents a far lower average cost per employee than in Canada.

- According to another study, from 1980 to 2012, economic growth was reduced by 0.8% a year in the U.S. due to the overall regulatory burden, which means that American GDP could have been nearly 25% higher than its current level, or the equivalent of \$13,000 more per capita.
- In the United States, a compilation of regulatory restrictions ranks oil and gas extraction 9th among the most heavily regulated industries, and the refining of oil and coal into derivative products at the very top.
- Even though the Canadian Constitution grants the provinces jurisdiction over natural resources, the federal government in Canada is more heavily involved than its counterpart in the United States, where there is no national energy policy to speak of.
- Alberta is considered to be a region having regulations that are as stringent as those in North Dakota, and among the most stringent in an international comparison of leading oil and gas producing regions.
- Alberta now stands out from the two U.S. states examined here (North Dakota and Pennsylvania) with its adoption of a plan to fight climate change, which is broadly in line with a basic trend over the last two years: Canada's regulatory burden is becoming increasingly onerous.
- Recent and expected changes are increasing investor uncertainty, especially since there might be a long wait before knowing what direction the Canadian government will take in its revision of regulatory and environmental processes.

Chapter 4 – The Trump Administration's Reforms: Lowering Taxes and Cutting Regulations

- As governments in Canada increase the regulatory burden and corporate taxes in the oil and gas sector, the Trump administration's actions generally favour increased economic activity in these sectors by making the United States a more attractive destination for investment.
- After just 10 days in office, the new administration had already issued 37 different resolutions through Congress aimed at repealing dozens of regulations.
- Trump re-launched two pipeline projects, Keystone XL and Dakota Access, and issued an executive order expediting infrastructure projects seen as priorities, especially in terms of environmental rules.
- Growth in U.S. domestic energy production, due mostly to the hydraulic fracturing revolution, has also alleviated fears of reliance on imports, and the ban on exporting oil produced in the United States to anywhere except Canada, which had been in effect for 40 years, has been lifted.
- President Trump signed an executive order stipulating that two regulations had to be repealed for each new regulation adopted, and the costs of compliance with new regulations will also be evaluated and capped.
- It is possible that the staff, budget, and scope of the Environmental Protection Agency (EPA) could be trimmed considerably in the coming years.
- The flagship tax measure, with the greatest potential impact on the ability of the United States to attract investment, consists of lowering the corporate tax rate from 35% to 20%.
- The Trump administration also seeks to open more federal lands to oil development, including offshore areas in the Arctic and the Atlantic.

Chapter 5 – Ways to Boost Canada's Competitiveness

- **Reduce the Tax Burden:** A particularly effective reform option would be to adopt a proportional tax rate of 10.5% for all businesses, instead of this rate being reserved for SMEs and a higher rate of 15% applying to large companies, as is now the case.
- **Reduce the Regulatory Burden:** A permanent body should be entrusted with the job of eliminating regulations that achieve little and cost a lot, and ensuring that processes are as simple and as quick as possible.
- **Ensure Predictable and Reasonable Timeframes:** The federal and provincial governments should agree on maximum timeframes within which a project would receive all necessary authorizations so as to avoid unreasonable delays.
- **Delimit the Notion of Social Licence:** Consultations should be limited to the communities directly affected and not open to all organized pressure groups that wish to insinuate themselves into the debate.

- **Minimize Arbitrary Political Decisions:** The ability of elected officials to interfere in formal project approval processes must be curbed.
- **Reconsider the Imposition of a Carbon Tax:** While in theory, imposing a carbon tax is an efficient mechanism for reducing GHG emissions, it should not be added on top of an approach of economic micromanagement by the government, and it should be adopted universally.

INTRODUCTION

Canada is a vast country with abundant natural resources. Much of its economy relies on the development of these resources, with oil and natural gas playing a central role. Unfortunately, these sectors are currently going through hard times due to a difficult Canadian and global context.

Late 2014 was marked by a significant and enduring drop in crude oil prices. Production growth in the United States, which is now able to export oil to world markets, partly explains the global context of this price decline, together with the strategy of the Organization of Petroleum Exporting Countries (OPEC).

In November 2016, American voters elected Donald Trump, the Republican presidential candidate who has repeatedly promised to improve the business environment by reducing the tax and regulatory burden, especially as it affects the oil and gas sector. Some of these promises have already been implemented, while others remain merely intentions for the moment.

While Canada alone cannot alter world crude oil prices, it can however pay attention to the changes taking place in the United States. This is all the more crucial given that Canada's competitiveness in oil and gas development depends almost entirely on its position relative to that of its powerful neighbour. It is therefore important to understand what is going on right now in the United States and the effects of U.S. policy on the Canadian economy.

The purpose of this Research Paper is to analyze Canada's relative position in the oil and gas development sector in order to assess the scope of the dangers that could emerge in terms of competitiveness. The significance of this issue is enormous, given the considerable weight of oil and natural gas in our economy, detailed in Chapter 1. This chapter also looks at some worrisome indicators suggesting that Canada is already losing some ground in terms of competitiveness.

Chapter 2 deals with taxation, comparing the relative positions of Canada and the United States. Federal taxes, as well as state and provincial taxes, both need to be taken into account. For the oil and gas sector, royalty regimes also play a central role.

Chapter 3 makes a similar comparison, this time looking at regulation. This complex topic merits careful attention, since its economic impacts are considerable, especially for the oil and gas sector, which is heavily regulated. This chapter also covers recent regulatory changes in Canada and Alberta.

Chapter 4 examines reforms adopted in recent months in the United States. It sets out both the actions and the intentions of the Trump administration, which are generally in the direction of greater competitiveness. Major changes have already occurred just in the last few months.

"Canada's competitiveness in oil and gas development depends almost entirely on its position relative to that of its powerful neighbour."

Finally, Chapter 5 concludes with a look at possible solutions. Based on Canada's current situation with regard to competitiveness, federal and provincial governments can react, re-examining how things are being done so as to improve them. Above all, it is important to acknowledge that the challenge facing governments is an urgent one.

CHAPTER 1

Reasons for Concern about Canada's Competitiveness

The development of the country's vast oil and natural gas reserves constitutes a very important economic sector in Canada. This sector was hit hard by the decline in oil prices in 2014. In addition to low prices, other clouds loom on the horizon. The United States, the main customer for Canadian energy, is producing oil and gas in increasing quantities and can now export its oil. Furthermore, Canadian investment, on which future energy production is directly dependent, pales in comparison to investment south of the border. This chapter provides an overview of the situation, the underlying causes of which are explored in the following chapters.

The Importance of the Oil and Gas Sector to the Canadian Economy

Canada's vast territory abounds in natural resources. In terms of proven oil reserves, it ranks third in the world, with 97% of these reserves in the form of oil sands.¹ Canada ranks fifth among the major oil-producing countries, behind the United States, Saudi Arabia, Russia, and China.² When it comes to natural gas, Canada has only the 17th largest proven reserves in the world, but is in fifth place among producing countries.³

Oil production has risen almost continuously in Canada from 2000 to 2017. During this period, average production went from 2.2 million to 4 million barrels a day (see Figure 1-1).

The environmental effects of increased oil sands production have been criticized, but interestingly, GHG emissions per barrel produced in 2014 were 31% lower than in 1990.⁴ Average emissions per barrel are now only 5% to 9% higher than for the average barrel refined in the United States. A series of technological innovations,

such as Paraffinic Froth Treatment, explain this notable improvement.⁵

On the economic front, the oil and natural gas sector directly generated nearly \$100 billion in GDP in 2015, employed 191,415 people, and contributed \$20.3 billion to government coffers.⁶ Oil and natural gas account for three-quarters of primary energy produced in Canada.⁷ The economies of certain provinces, including Alberta, rely heavily on the development of these resources (see Figure 1-2).

However, the economic impact of this sector is felt everywhere, due among other things to the vast network of industry suppliers. Thousands of jobs thus depend on this sector in every province, with the sole exception of Prince Edward Island.⁸

"Canada ranks fifth among the major oil-producing countries, behind the United States, Saudi Arabia, Russia, and China."

The crude oil and natural gas produced in Canada is largely exported, with 78% of oil bound for export, almost exclusively (99%) to the United States. The U.S. is also the sole customer for our natural gas, with 51% of production exported there.⁹ Table 1-1 provides an overview of various production components and commercial exchanges in the oil and natural gas sector in Canada over the past two years.

The United States has also been producing increasing quantities of oil in recent years due to the shale oil revolution, reversing a downward trend in production. While less than 5 million barrels a day were produced in 2008, production has now climbed to nearly 9 million barrels a day (see Figure 1-3).¹⁰

1. Natural Resources Canada, *Energy Markets Fact Book 2016-2017*, 2016, p. 28.

2. U.S. Energy Information Administration, International, Total Petroleum and Other Liquids Production – 2016, Reserves and Capacity.

3. Natural Resources Canada, *op. cit.*, footnote 1, p. 52.

4. Natural Resources Canada, *op. cit.*, footnote 1, p. 35.

5. Based on the total emissions cycle from the point of extraction to the refining stage. Canada's Oil Sands, GHG Emissions; Martha Hall Findlay and Trevor McLeod, "Environmentalists should end the charade over the oil sands," *The Globe & Mail*, February 28, 2017.

6. Average annual government revenues from oil and natural gas, from 2010 to 2014. Natural Resources Canada, *op. cit.*, footnote 1, pp. 5 and 10.

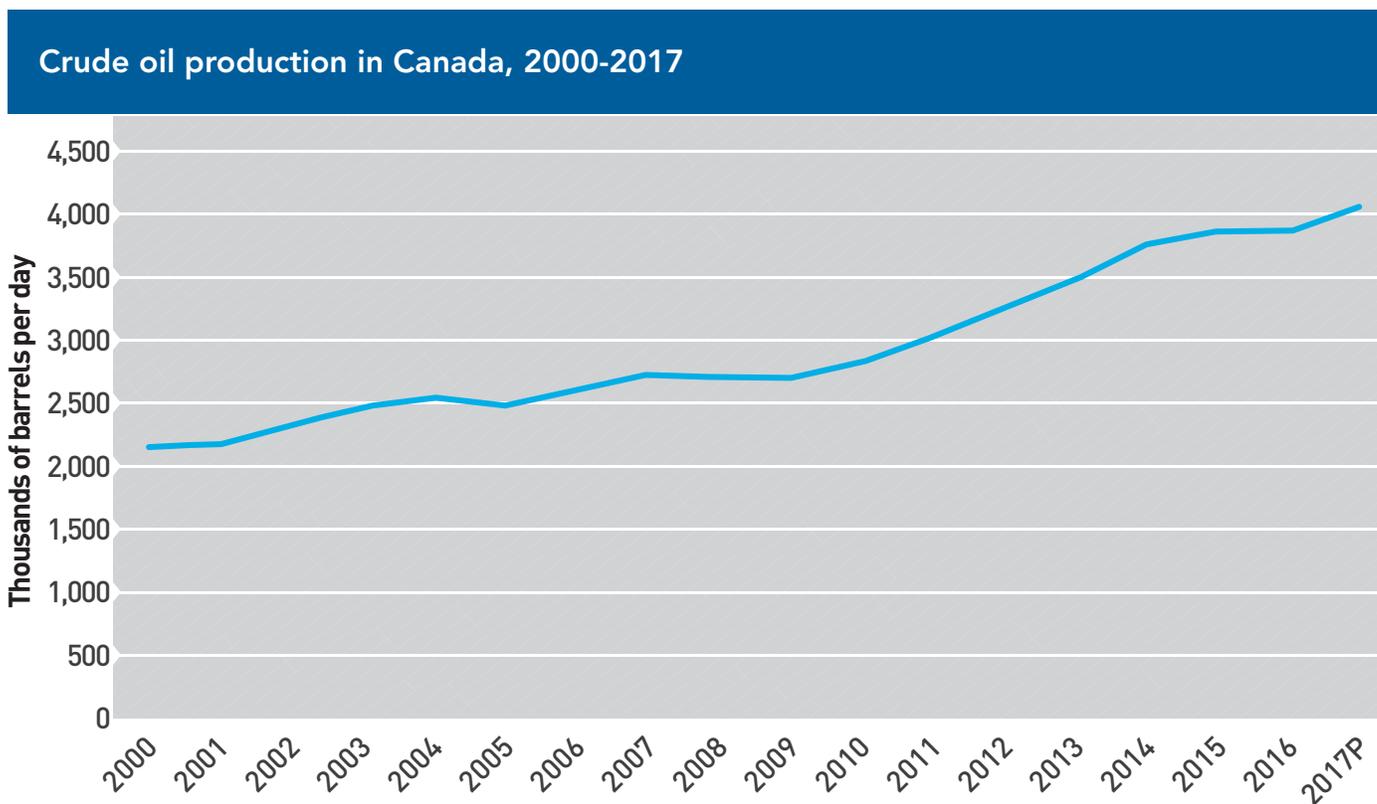
7. *Ibid.*, p. 25.

8. *Ibid.*, p. 7.

9. *Ibid.*, p. 8.

10. Ed Crooks, "The US shale revolution," *Financial Times*, April 24, 2015.

Figure 1-1



Note: The data point for 2017 is a forecast.

Source: National Energy Board, Statistics and Analysis, Estimated Production of Canadian Crude Oil and Equivalent, July 7, 2017.

This rise in production has been so significant that the U.S. economy is no longer perceived as being “dependent” on imports from unstable foreign countries to ensure its energy supplies. In 2015, less than a quarter of the country’s oil needs were met with imports, the lowest level since 1986.¹¹ Given this new context, exports from the United States have risen significantly since December 2015, due mainly to the lifting of the prohibition on exports (to anywhere other than Canada) that was in force for 40 years (see Figure 1-4).¹² In other words, from a Canadian perspective, our main customer is becoming our competitor.

U.S. production has continued to rise despite lower prices on world markets. Indeed, OPEC member countries have opted to maintain high production levels in

“From 2000 to 2017, average Canadian oil production went from 2.2 million barrels a day to 4 million barrels a day.”

hopes of drowning U.S. production.¹³ This trade war also hurts Canadian producers.

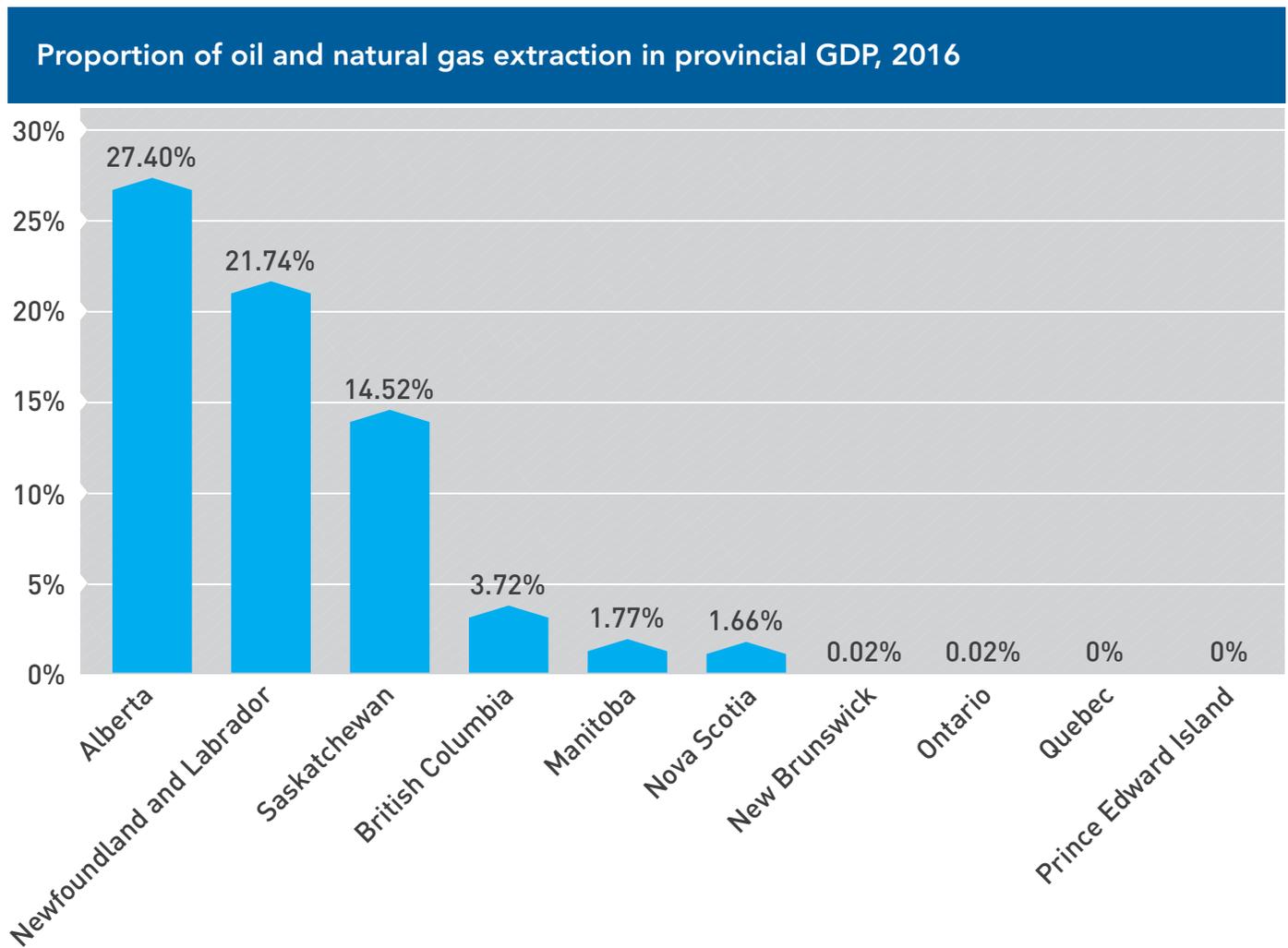
The trend is similar in the natural gas market, with U.S. production also having risen with the development of shale gas. In 2015, the United States produced 27.1 trillion cubic feet of natural gas, enabling domestic production to meet 92% of consumption requirements. A large share of imports came from Canada. Increasingly, American companies are preparing to export more natural gas by building terminals or converting import terminals into export terminals. Many experts now expect

11. John P. Cogan Jr. and James Cogan, “Overview of Oil Sector,” in *International Comparative Legal Guides: Oil and Gas Regulations 2017*, 12th edition, Global Legal Group, January 2017.

12. “America lifts its ban on oil exports,” *The Economist*, December 18, 2015.

13. Alberto Behar and Robert A. Ritz, *An analysis of OPEC’s strategic actions, US shale growth and the 2014 oil price crash*, IMF Working Paper, International Monetary Fund, July 2016, pp. 15 and 16.

Figure 1-2



Source: Statistics Canada, CANSIM Table 379-0030: Gross domestic product (GDP) at basic prices, by North American Industry Classification System (NAICS), provinces and territories, 2016.

the United States to become self-sufficient in oil and natural gas over the next 20 years.¹⁴

Investment Trends in the Canadian Oil and Gas Sector

Competition between the United States and Canada in the oil and gas sector is not limited to market share or price. It is also felt in the ability to attract investment from industry players.

The United States benefits from a positive perception on the part of investors. At least, this would explain why a certain number of disturbing signs point to a compara-

“The oil and natural gas sector generated nearly \$100 billion in GDP in 2015, employed 191,415 people, and contributed \$20.3 billion to government coffers.”

tive disadvantage for Canada in attracting investment despite the country’s large hydrocarbon reserves.

It is important to distinguish between two effects. On the one hand, investment and economic activity generally slowed following the decline in oil prices in the second half of 2014, with the WTI price falling from more than US\$100 in July to less than US\$40 in January

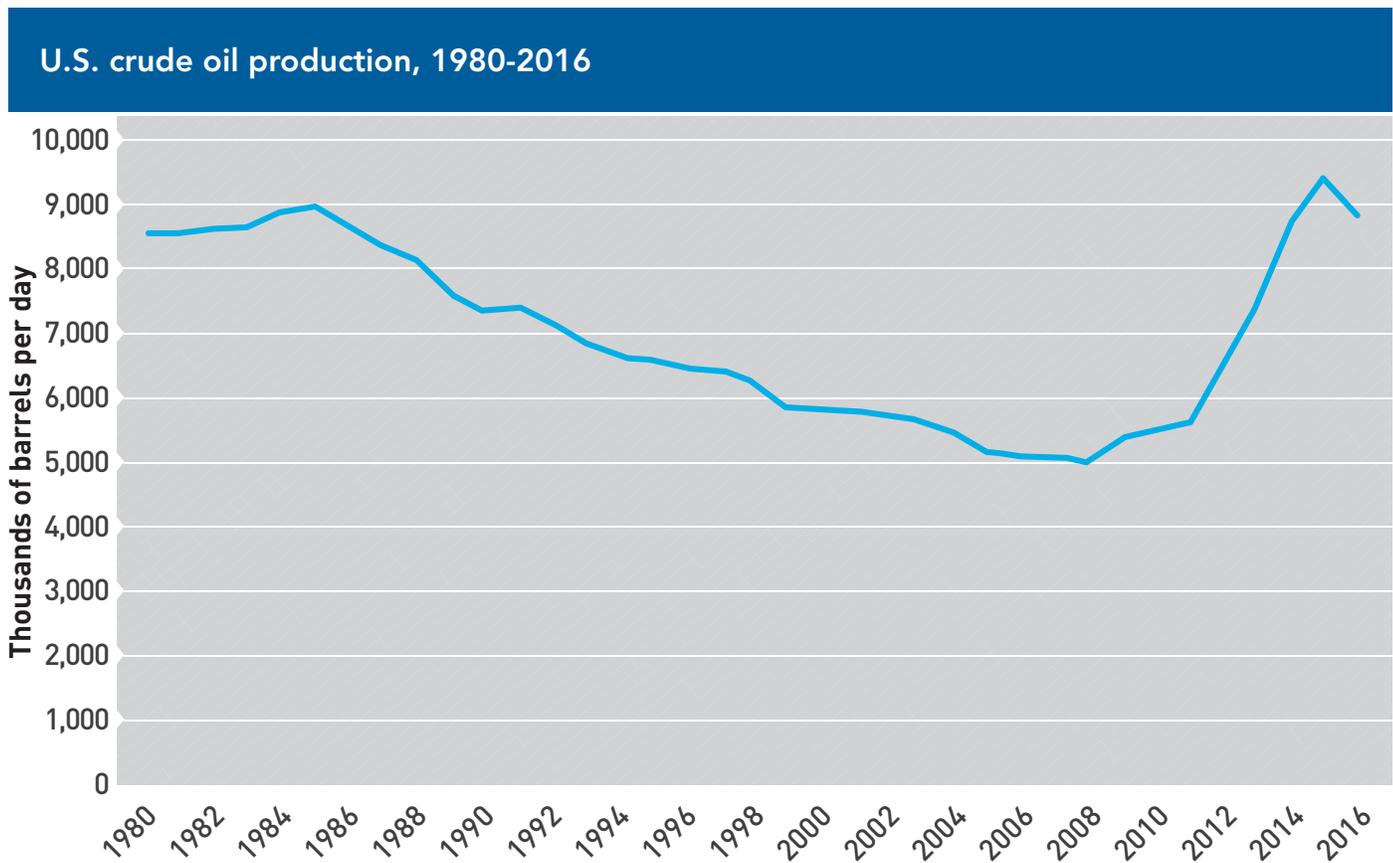
14. John P. Cogan Jr. and James Cogan, *op. cit.*, footnote 11, “Overview of Natural Gas Sector.”

Table 1-1

Portrait of the oil and natural gas sector in Canada		
	2016	2015
Crude oil		
Conventional oil reserves (barrels)	n/a	3.9 billion
Conventional oil production (barrels per day)	1.2 million	1.3 million
Exports (crude oil, condensates, pentanes, etc.) (barrels per day)	3.0 million	3.0 million
Imports (barrels per day)	761,000	760,000
Canadian consumption of refined products (barrels per day)	1.8 million	1.8 million
Oil sands		
Mining and <i>in situ</i> reserves (barrels)	n/a	165.4 billion
Mining and <i>in situ</i> production (barrels per day)	2.4 million	2.4 million
Investment in fixed assets (mining, <i>in situ</i> and valuation)	\$17.0 billion	\$23.0 billion
Natural gas		
Reserves (cubic feet)	n/a	77 trillion
Production (cubic feet per day)	15.2 billion	15.0 billion
Exports (cubic feet per day)	7.9 billion	7.6 billion
Canadian consumption (cubic feet per day)	8.3 billion	8.6 billion

Sources: Canadian Association of Petroleum Producers, Statistics, Basic Statistics.

Figure 1-3



Source: Energy Information Administration, Data, U.S. Field Production of Crude Oil (Thousand Barrels per Day), August 31, 2017.

“Thousands of jobs depend on the oil sector in every province, with the sole exception of Prince Edward Island.”

2015. Since then, the price has generally remained below the US\$50-per-barrel threshold (see Figure 1-5).¹⁵ The year 2017 does, however, show signs of a certain recovery in investment, both in Canada and the United States.

On the other hand, this recovery looks stronger in the United States than in Canada, which may well indicate a comparative advantage for the United States, at least as perceived by investors. This second effect is the one that is of more interest to us since it highlights a real risk to the development of the oil and gas sector in Canada.

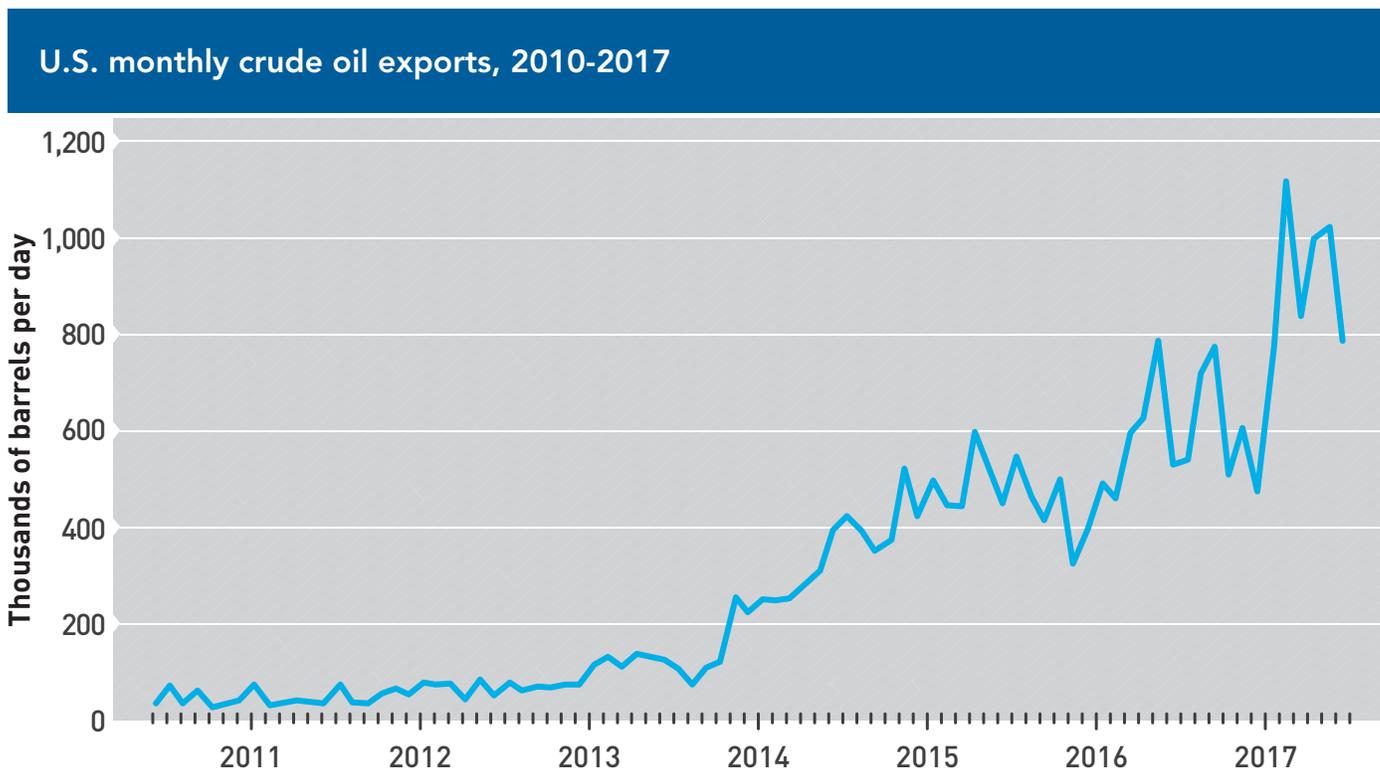
The first effect is seen in the sharp reduction in investment in the oil and gas sector in Canada since 2014. Following two consecutive years of decline, in 2015 and 2016, capital spending fell from \$78.4 billion to \$38 billion. As for 2017, a slight recovery was seen in the first two quarters. Compared to 2016, this marks a 2% increase for the first quarter and a 15% increase for the second quarter (see Figure 1-6).

However, the recovery is nowhere near the same magnitude in the United States and in Canada. For 2017, data collected by the *Oil and Gas Journal* in a survey of oil and gas companies show that capital expenditures should increase by 38% in the United States compared to 2016. In Canada, the increase is projected to be just 19%. Planned investments of \$44 billion in 2017 would still be 46% less than in 2014.¹⁶

15. U.S. Energy Information Administration, Cushing, OK WTI Spot Price FOB (Dollars per Barrel), August 30, 2017.

16. Canadian Association of Petroleum Producers, *A competitive policy and regulatory framework for Alberta's upstream oil and natural gas industry*, July 2017, p. 20.

Figure 1-4



Source: U.S. Energy Information Administration, U.S. Exports of Crude Oil, August 31, 2017.

According to projections by the Alberta Energy Regulator, the situation is even worse if only the oil sands are taken into account, thus excluding conventional oil development projects. By this measure, 2017 would not be a year of recovery, but rather a third consecutive year of declining investment. From a peak of \$34 billion in 2014, investment is set to fall to only \$14 billion in 2017, and is expected to stay on a downward trend until 2026 (see Figure 1-7). A survey of the largest companies in this specific sector also shows that there will be a decline in investment for 2017.¹⁷

The decline in oil sands investment, and lower investment in Canada than in the United States, are likely due to a number of factors. The association representing oil and natural gas producers in Canada emphasizes in particular the detrimental effect of certain recent decisions and the uncertainty that is being felt, especially in Alberta:

The increasingly competitive North American oil and natural gas market, in combination with the recent policy changes and uncertainties in Alberta,

“The crude oil and natural gas produced in Canada is largely exported, with 78% of oil bound for export, almost exclusively (99%) to the United States.”

have contributed to reduced investment in Canada’s oil and natural gas sector. Investment is critical, as it is the foundation of all economic benefits associated with the upstream oil and natural gas industry.¹⁸

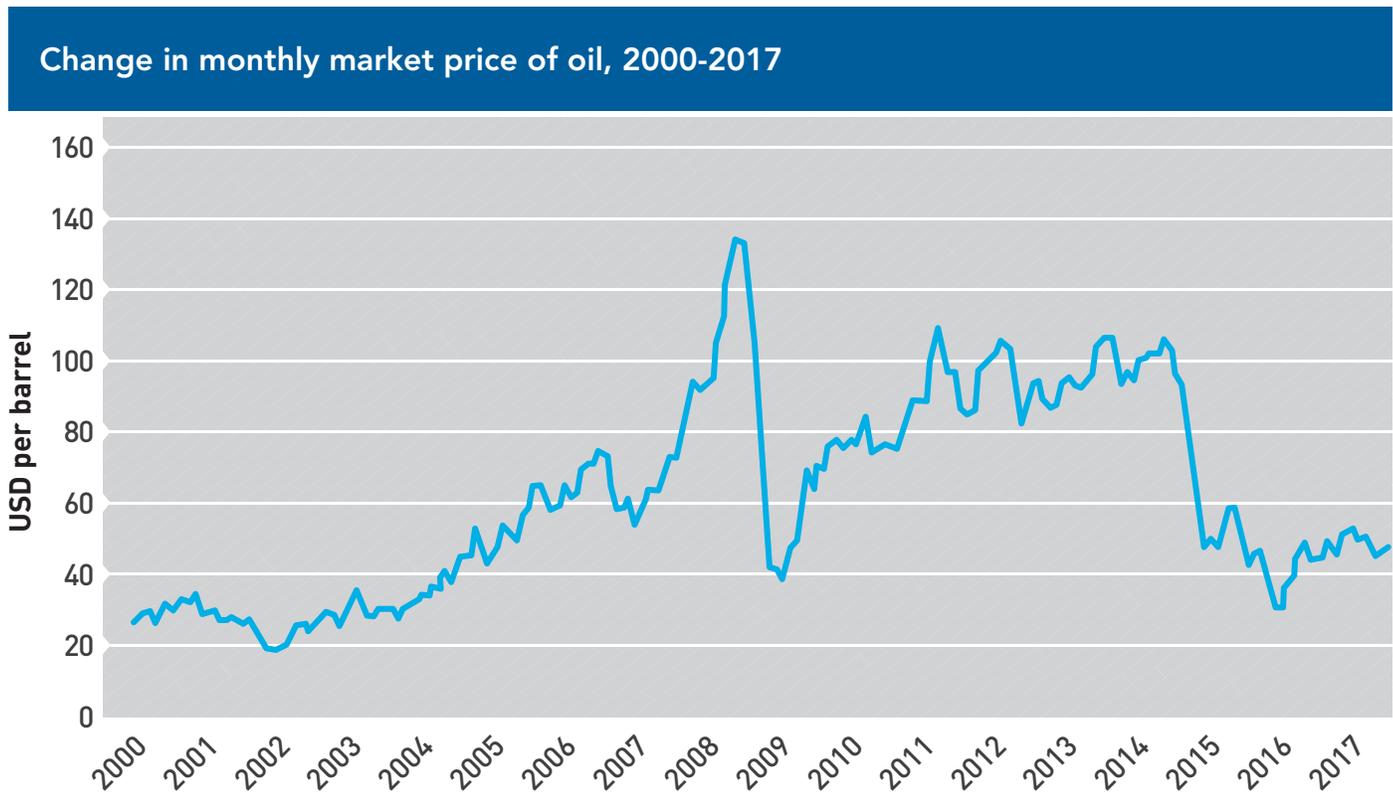
This lack of confidence in Canadian policies and in future development opportunities is also evident in the *Global Petroleum Survey* conducted by the Fraser Institute.¹⁹ This survey of oil and gas companies worldwide measures their perception of barriers to investment. By this measure, Alberta is experiencing a dizzying downturn. While it was among the 15 most attractive

18. *Ibid.*, p. 19.

19. Kenneth P. Green, Taylor Jackson, and Kyle Sholes, *Global Petroleum Survey 2016*, Fraser Institute, December 6, 2016.

17. *Ibid.*, p. 21.

Figure 1-5



Note: Based on West Texas Intermediate (WTI) spot prices.

Source: U.S. Energy Information Administration, Cushing, OK WTI Spot Price FOB (Dollars per Barrel), September 13, 2017.

destinations in 2014, it ranked 43rd out of 96 in 2016 (see Figure 1-8).

Even within Canada, Alberta is now outpaced in terms of corporate perceptions by British Columbia, and continues to be outpaced by Saskatchewan. The regulatory burden seems to be primarily at fault, since it is estimated that its cost will rise by between 12% and 21% in the near future, and even more after 2023, when the carbon tax will be applied to this sector. These increases in the cost of regulation have a significant effect on the profitability of existing and future facilities.²⁰

This situation could explain why many companies are currently investing more outside of Canada, mainly in the United States. The industry makes a striking observation:

The total pool of oil sands company investment in the U.S. is \$23 billion (nearly double the capital going into oil sands) [...].

20. Canadian Association of Petroleum Producers, *op. cit.*, footnote 16, pp. 17-18.

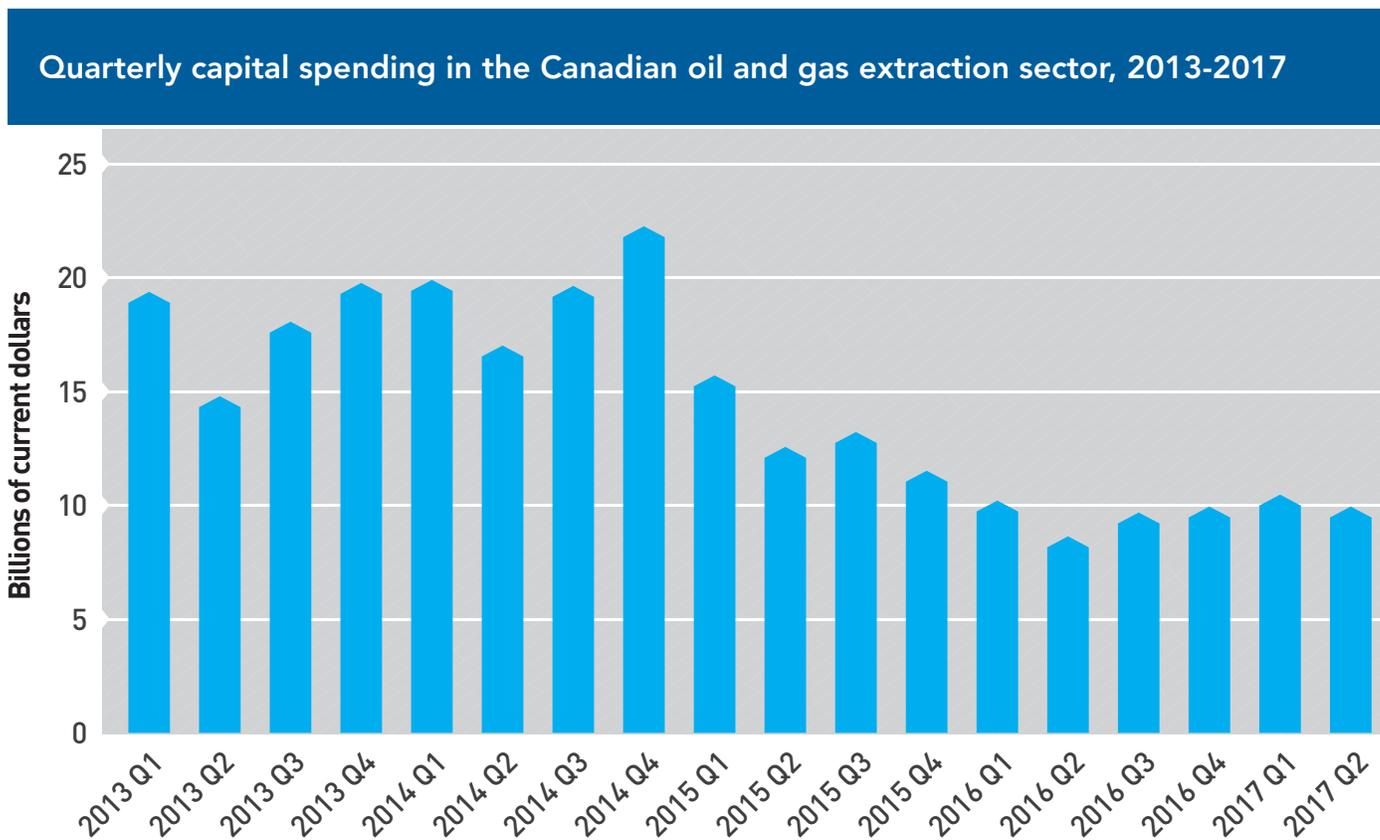
“Alberta is experiencing a dizzying downturn. While it was among the 15 most attractive destinations in 2014, it ranked 43rd out of 96 in 2016.”

Many of these companies have global operations and are also investing in comparable long-cycle portfolio assets across the globe. [...] These findings confirm that companies that traditionally invest in the oil sands, and that have access to capital and optionality, are deploying significant capital in comparable opportunities outside of the oil sands.²¹

The slowing of investment in Canada is evident from the large number of projects that have been suspended or cancelled. This is what happened to the majority of projects that were not already started or confirmed before

21. *Ibid.*, pp. 22-23. See also Appendix 6.2 on pages 47 and 48 for tangible examples of companies investing elsewhere rather than in the Canadian oil sands.

Figure 1-6



Source: Statistics Canada, CANSIM Table 029-0052: Capital expenditures, oil and gas extraction industries, Canada, quarterly, NAICS 221 Oil and gas extraction, 2013 to 2017.

the fall in prices.²² Those that were already underway account for a significant portion of current investment, meaning that very few new projects have been proposed since 2014.²³

In the years preceding the 2014 price decline, companies developing oil and natural gas were investing their entire cash flows, to which loans were added as well. Since 2014, cash flows have dried up.

Consolidating the financial results of the entire oil and gas sector, the 2016 estimate shows that revenues minus royalties amounted to \$34.7 billion. For the same year, the total cost of the depreciation of physical capital, the depletion of the resource being extracted, and the amortization of research and exploration expenses, spread over the projects' lifespan, was \$34.5 billion.

22. Peter Tertzakian and Kara Jakeman, *The Fiscal Pulse of Canada's Oil and Gas Industry: A Review of Capital Flows and Activity*, ARC Energy Research Institute, May 2016, p. 14.

23. *Ibid.*, p. 6.

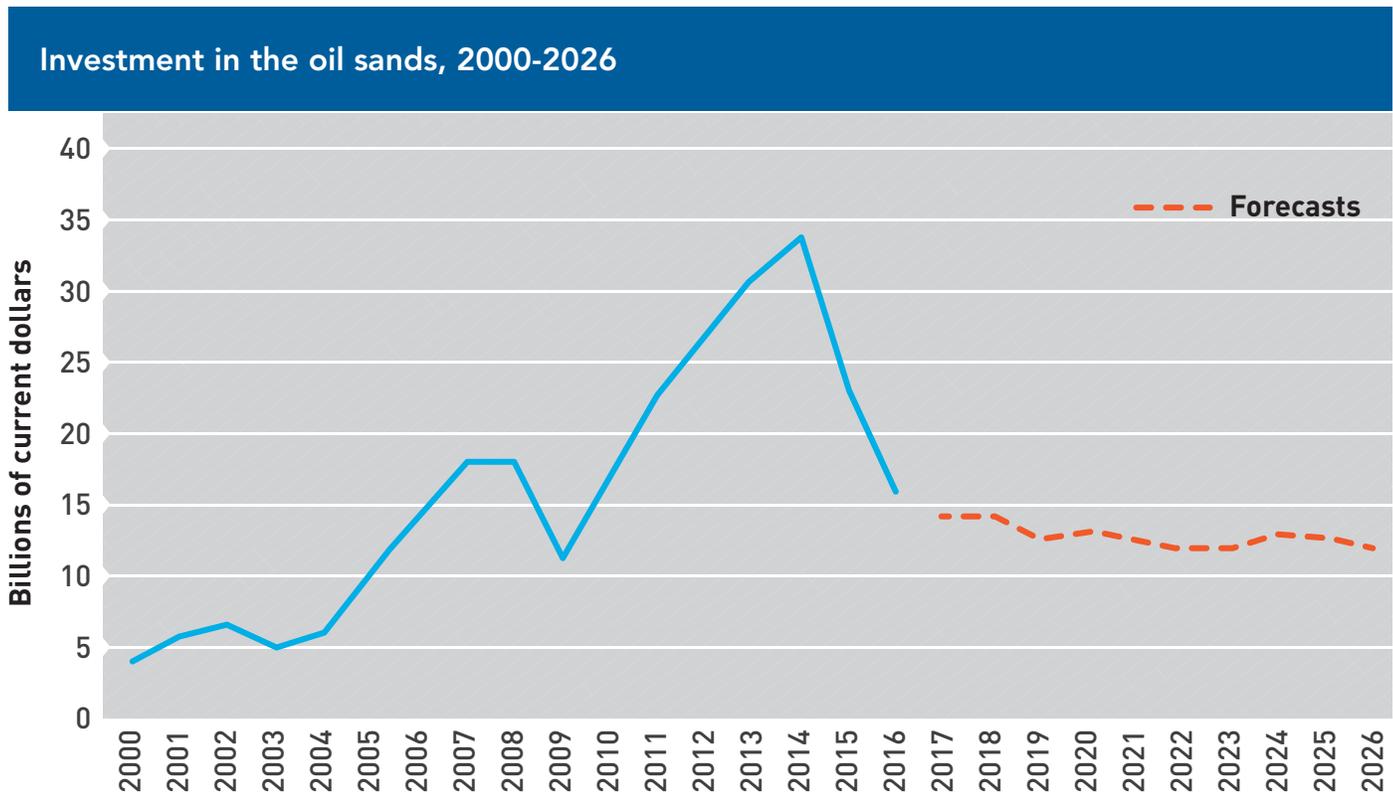
“The slowing of investment in Canada is evident from the large number of projects that have been suspended or cancelled.”

In other words, hydrocarbon development may be profitable for projects already in operation, for which all that matters is the difference between the selling price and the marginal cost of extraction. But for future projects, with all costs taken into account, no surplus funds are produced. Under these conditions, the financing of any new project is problematic. It follows that the future of investment in the oil and gas sector in Canada is highly uncertain.²⁴

A more concrete illustration of this observation is provided by an indicator linked directly to oil and gas production,

24. *Ibid.*, pp. 26 and 34.

Figure 1-7



Note: The data point for 2016 is an estimate.

Source: Alberta Energy Regulator, Capital Expenditures Data, Figure 1.10 Alberta conventional oil and gas and oil sands capital expenditure, March 2017.

namely the average use of drilling rigs on an annual basis (see Figure 1-9). Projections show a rebound in activity in 2017, but the scope of this recovery is significantly greater in the United States (+68%) than in Canada (+52%).

Another more concrete perspective on Canada's missed opportunities sheds some light on the seriousness of being less competitive with regard to the United States. A senior oil company executive estimated that annual investment was down \$10 billion compared to seven or eight years ago, resulting in 100,000 fewer jobs.²⁵

Other commentators also assert that Canada is attracting less investment, among other things due to investment shifting to the United States.²⁶ The cancellation by Petronas of a \$36-billion natural gas liquefaction plant project is seen as another worrisome symptom of

"A senior oil company executive estimated that annual investment was down \$10 billion, resulting in 100,000 fewer jobs."

Canada's lack of competitiveness.²⁷ Opposition to major projects in this sector and the economic impact of this opposition have contributed to the cancellation or suspension of a number of them. This year alone, four large projects worth a total of \$84 billion were thus abandoned.²⁸

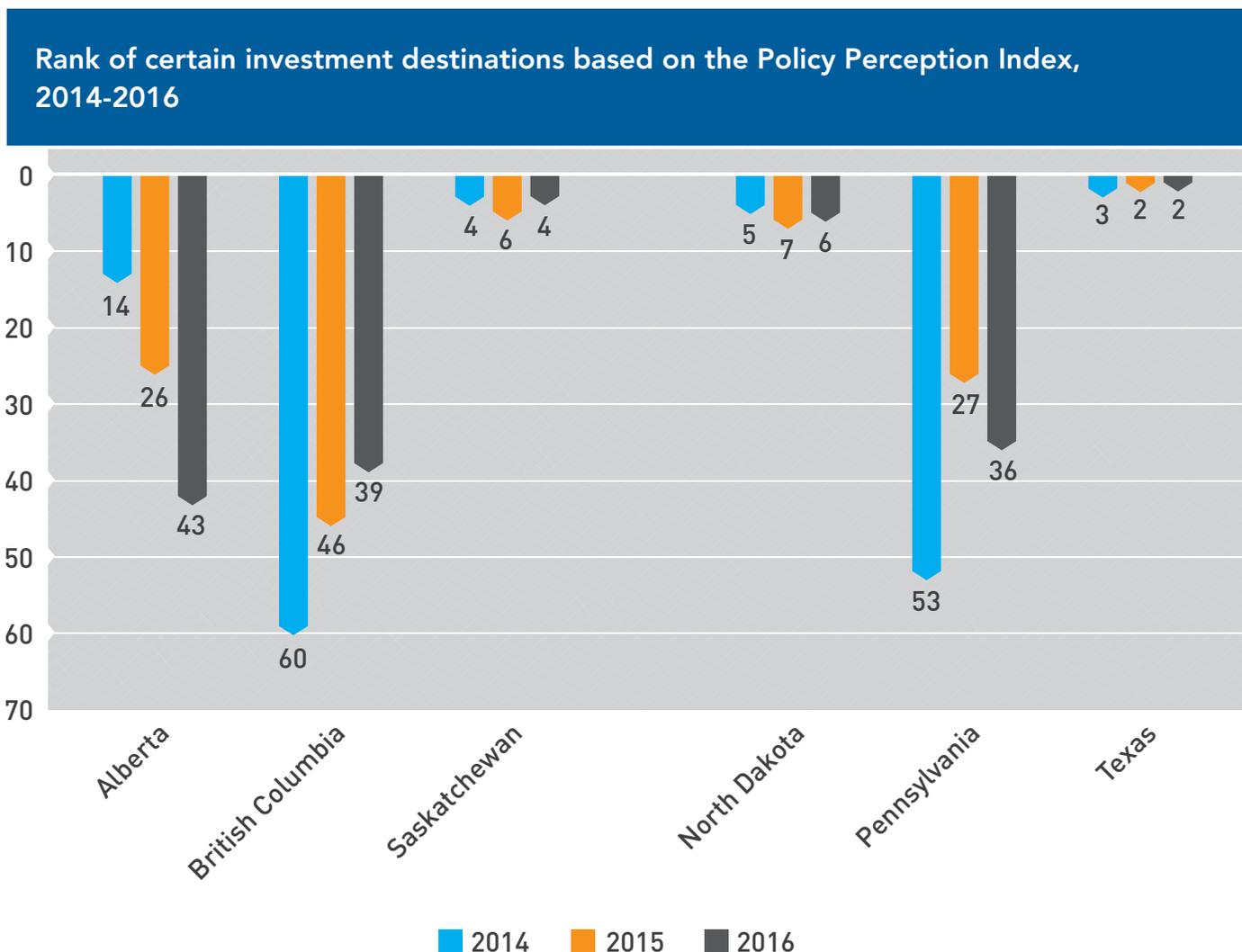
25. James Mahony, "Canada one of the most geopolitically unstable places for oil and gas: Ensign exec," *JWN Energy*, May 8, 2017.

26. Gwyn Morgan, "If they kill Trans Mountain, Canada's rule of law is broken," *Financial Post*, July 13, 2017.

27. Claudia Cattaneo, "A tragedy for Canada: Petronas cancels \$36B LNG project as B.C. jacks up demands," *Financial Post*, July 25, 2017; Joe Oliver, "How to smother a resource economy to death, starting with LNG," *Financial Post*, August 2, 2017.

28. Geoffrey Morgan & Jesse Snyder, "Energy East latest in a string of projects worth \$56B abandoned amid 'dysfunctional' policy," *Financial Post*, October 5, 2017; The Canadian Press, "Partners pull plug on Aurora LNG project near Prince Rupert for economic reasons," *Vancouver Sun*, September 14, 2017.

Figure 1-8



Note: The number of provinces and states covered in the survey was 156 in 2014, 126 in 2015, and 96 in 2016.

Source: Taylor Jackson, Kenneth P. Green, and Kyle Sholes, *Global Petroleum Survey 2016*, Fraser Institute, December 2016, p. 18.

“It is clear that Canada is becoming ever less competitive in attracting investment in the oil and gas sector, which can already be seen in anticipated investments for 2017.”

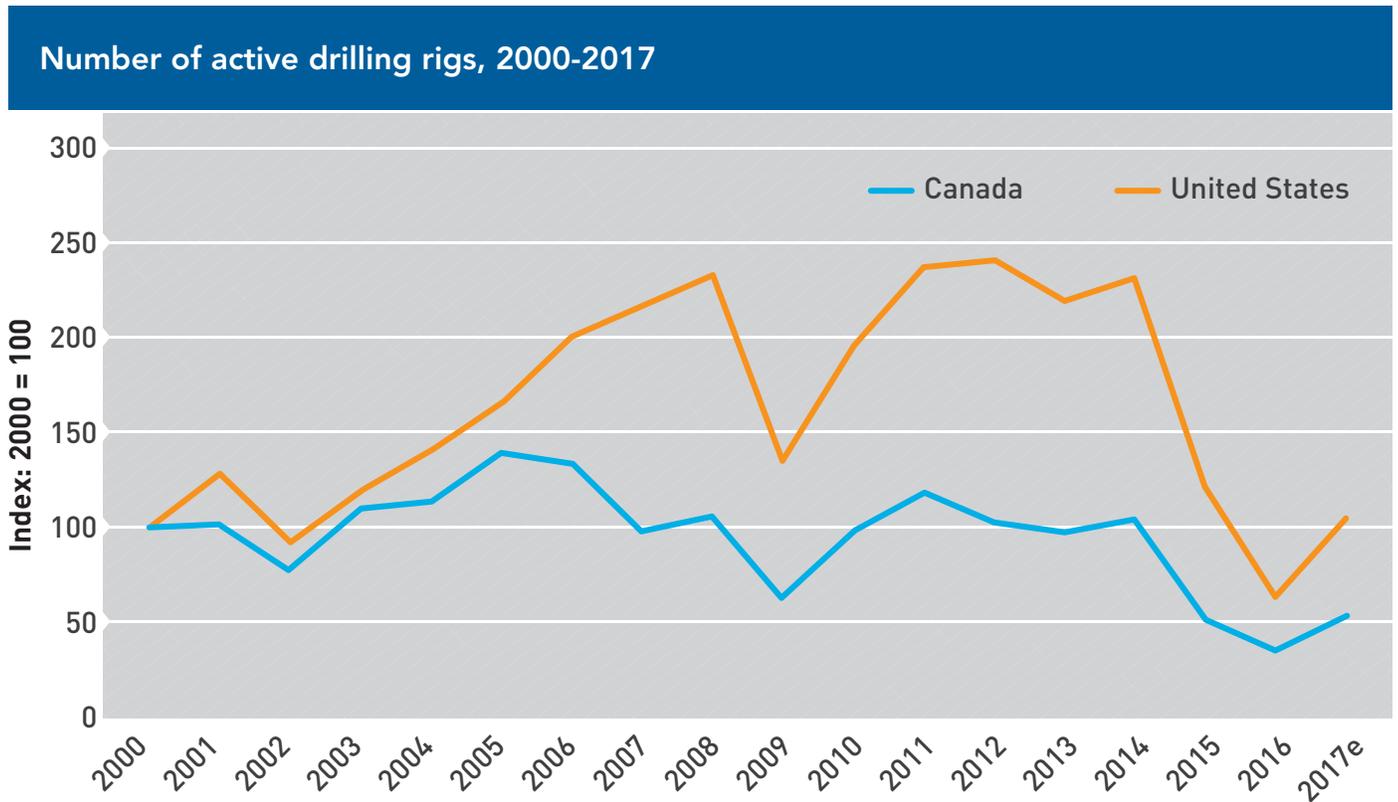
In sum, it is clear that Canada is becoming ever less competitive in attracting investment in the oil and gas sector, which can already be seen in anticipated investments for 2017. This is reflected in industry perceptions, summed up as follows in a *Globe and Mail* article from early in the year:

Industry executives say Western Canadian producers face growing competitive pressure as Mr. Trump—who is to be inaugurated next week—pledges to work with the Republican-led Congress to cut corporate taxes and reduce regulatory costs. They fear energy investors will turn away from Canada to reap better returns south of the border.²⁹

Before we return to the theme of Canada’s relative competitiveness, the next two chapters offer a more detailed picture of the current situation, both in terms of taxation and of the regulatory framework.

29. Shawn McCarthy, “Bracing for Trump: Energy sector fears competitive disadvantage,” *The Globe and Mail*, January 10, 2017.

Figure 1-9



Notes: Data for 2017 are based on weekly averages for the first seven months of the year (January to July).

Sources: Canadian Association of Petroleum Producers, *Statistical Handbook for Canada's Upstream Petroleum Industry*, July 2017, Table 1.7; U.S. Energy Information Administration, *Monthly Energy Review—August 2017*, p. 91; BOE Report, Canada Rig Count.

CHAPTER 2

The Tax System That Applies to Oil and Gas Development

Companies that exploit hydrocarbons such as oil and natural gas are subject to the general corporate tax system. They are also subject to certain features of the tax system covering natural resource exploitation. For example, they have to pay royalties on the resources they extract from the ground. The level of taxes collected from companies varies by state or province. Subsidies and tax credits that lower the tax burden also enter into the picture.

Given these various factors, U.S. taxes with their high statutory rates are not as unfavourable as they may appear at first glance. These rates are largely offset by other measures or by lighter taxation at the state level. As we shall see in this chapter, Canada remains competitive with the United States in terms of corporate taxation, including in the resource sector, but Canada's advantage could soon disappear in the event of tax reform on the American side.

Corporate Income Tax in Canada and the United States

Taking all taxes and contributions combined, including personal income tax and corporate income tax, the United States has a lower tax burden than Canada and the other G7 countries as a share of GDP (see Figure 2-1). The U.S. ratio of 26.4% is also below the 34.3% average among OECD countries, meaning that the United States has the enviable reputation of being a low-tax economy.

Despite this reputation, the statutory U.S. corporate tax rate is high in comparison to that of other industrialized countries. Figure 2-2 compares the statutory rates of various countries when tax rates at the various levels of government, both national and sub-national, are combined. Canada clearly does better than the United States in this respect, although its corporate tax rate is above the OECD average.

In the United States, the federal corporate tax rate accounts for the lion's share, at 35%, whereas the individual states are far less greedy. In Canada, the federal tax rate is 15%, amounting to more than half of the combined rate but leaving a higher proportion of revenues to the provinces.

For example, Alberta has taxed corporations at a rate of 12% since July 2015, slightly more than Ontario or Quebec.³⁰ This brings its combined rate to 27%. By way of comparison, the state corporate tax rate is 4.31% in North Dakota and 9.99% in Pennsylvania. (See the Annex for an explanation of the reasons that motivated the choice of Alberta, Pennsylvania, and North Dakota for purposes of comparison.)

However, statutory corporate tax rates do not reflect the array of exemptions, tax credits, and tax holidays that may be granted. By taking these factors into account, we can obtain the effective tax rate, providing a more representative image of companies' fiscal reality.

"The United States has a lower tax burden than Canada and the other G7 countries as a share of GDP."

However, while the effective tax rate has been measured in numerous studies, these have produced widely varying estimates.³¹ The U.S. tax system is highly complex, with all sorts of exemptions and credits. This explains why effective tax rates are far lower than statutory rates, while at the same time leading to numerous economic distortions.³²

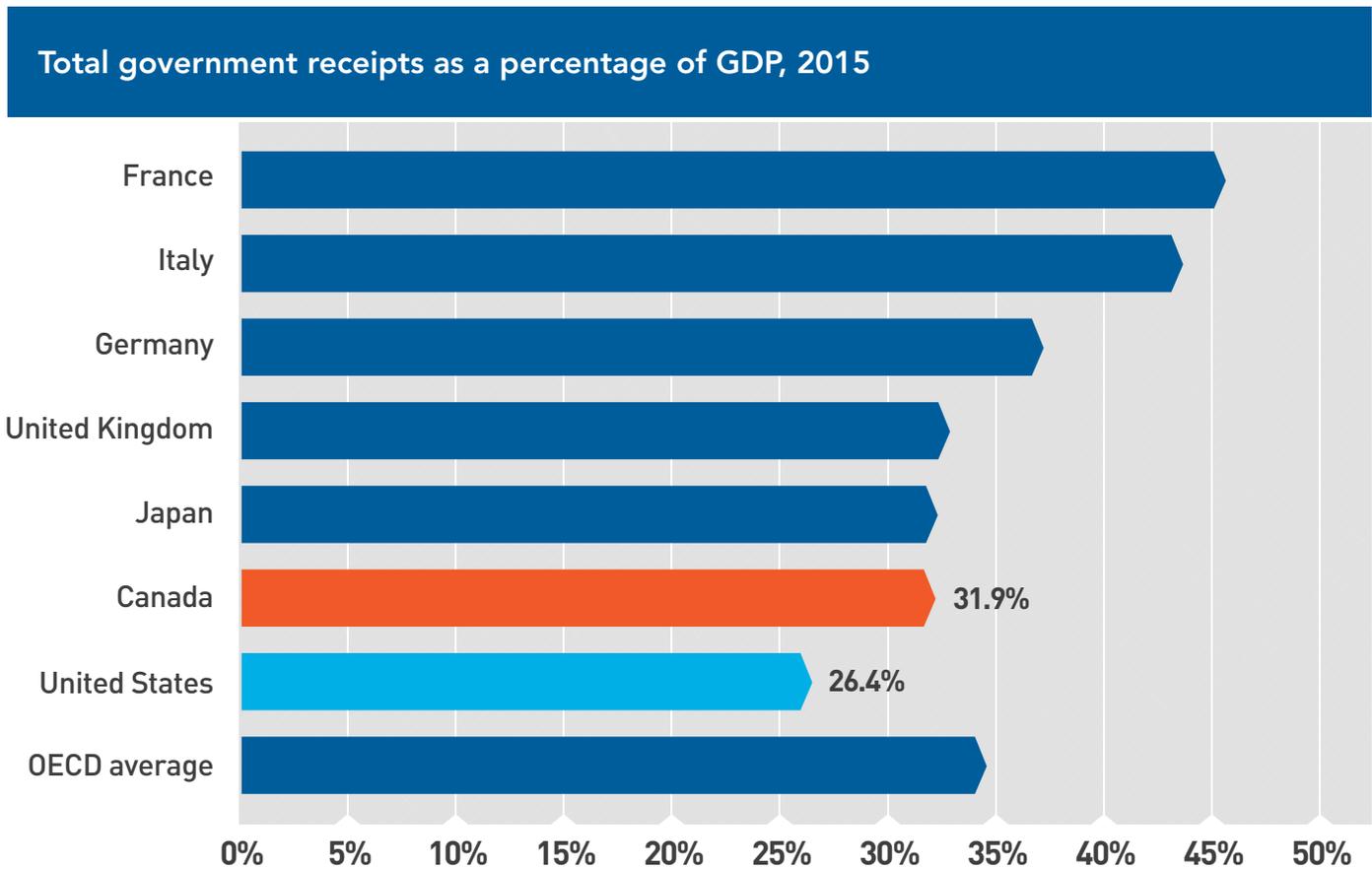
The complexity involved in measuring effective tax rates has a particularly strong effect on the resource sector. Canada's Department of Finance, in a report comparing effective marginal tax rates on investment in Canadian provinces and U.S. states, excludes from the outset the

30. Daria Crisan and Jack Mintz, "Alberta's new royalty regime is a step towards competitiveness: A 2016 update," SPP Research Papers, Vol. 9, No. 35, The School of Public Policy, University of Calgary, October 2016, p. 4; KPMG, "Corporate Tax Rates," 2017, p. 1.

31. Martin Sullivan, "The Truth About Corporate Tax Rates," *Forbes*, March 25, 2015; Reuven S. Avi-Yonah and Yaron Lahav, "The Effective Tax Rates of the Largest U.S. and EU Multinationals," *Tax Law Review*, Vol. 65, No. 3, 2012, pp. 375-389; Duanjie Chen and Jack Mintz, "The U.S. Corporate Effective Tax Rate: Myth and Fact," Special Report No. 214, Tax Foundation, February 2014; Kevin A. Hassett and Aparna Mathur, "Report Card on Effective Tax Rates: United States Gets an F," Tax Policy Outlook No. 1, American Enterprise Institute, February 2011; Kevin S. Markle and Douglas A. Shackelford, "Cross-Country Comparisons of Corporate Income Taxes," *National Tax Journal*, Vol. 65, No. 3, September 2012, pp. 493-528; PricewaterhouseCoopers LLP, "Global Effective Tax Rates," report prepared at the request of the Business Roundtable, April 14, 2011.

32. Duanjie Chen and Jack Mintz, *ibid.*

Figure 2-1



Note: Shows revenues from taxes and contributions for all levels of government. The Japanese rate is for 2014.
Source: OECD, Revenue Statistics – OECD countries: Comparative tables, 2015 database.

mining industry and oil and gas extraction because this sector “raises a number of unique issues.”³³

Despite all of these nuances, estimates seem to converge on two key conclusions. First, the effective rate in the United States is generally much lower than the statutory rate. Second, even in terms of effective rates, Canada maintains a tax advantage, though a smaller one. In a large-scale study, Kevin S. Markle and Douglas A. Shackelford measured average effective tax rates in various countries using financial data from 11,602 publicly traded companies over the period from 1988 to 2009. Their results showed that average effective rates in the United States hovered around 29% to 30% between 2005 and 2009. According to this same method

“The effective rate in the United States is generally much lower than the statutory rate. Even in terms of effective rates, Canada maintains a tax advantage, though a smaller one.”

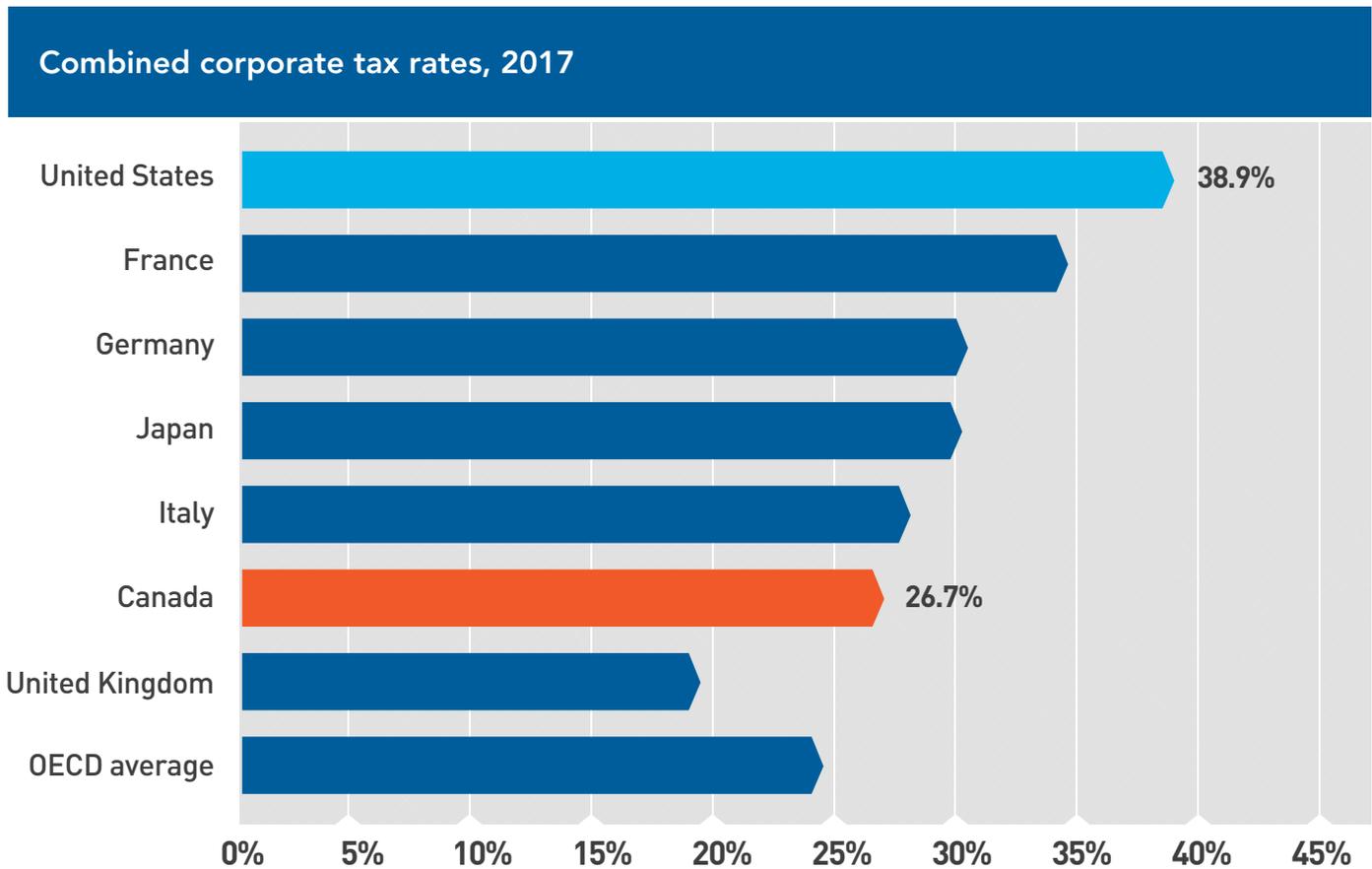
of calculation, they were between 23% and 26% in Canada.³⁴

Their study also includes another particularly interesting result. By measuring effective tax rates by industrial sector, the researchers found that the U.S. mining sector, which includes hydrocarbon extraction, enjoyed a particularly favourable rate of just 6%. In Canada, the rate

33. Department of Finance Canada, *Tax Expenditures and Evaluations 2005*, 2005, p. 44, footnote 5.

34. Rates vary based on the nature of commercial activities, regardless of whether they are national or international. Kevin S. Markle and Douglas A. Shackelford, *op. cit.*, footnote 31, pp. 1 and 504.

Figure 2-2



Source: OECD, Table II.1, Statutory corporate income tax rate, database, 2017.

for this same sector was 9%.³⁵ However, oil and gas extraction is not perfectly aligned with mineral extraction, and tax systems have changed over the past eight years. For example, Canada's corporate tax rate has been lowered in recent years, while the comparable rate in the United States has remained relatively stable.³⁶

A more recent study on the effective corporate marginal tax rate produced by the U.S. Congressional Budget Office shows for its part that the gap between Canada and the United States is broadly favourable to Canada. The rate for 2012 was 18.6% in the United States and 8.5% in Canada.³⁷ Although the data are not broken down by sector, the fact remains that the effective mar-

"In the United States, governments only own the resources located under public land. Even on private land, however, the states collect special taxes that are equivalent to royalties."

ginal U.S. rate is more than double the Canadian rate in this study.

Royalties and Authorized Deductions for Resource Extraction

Determining the levels of taxation specific to the oil and gas extraction sector is no simple matter, whether in Canada or the United States. But royalties, the key tax lever in this sector, as in all natural resource industries, give us a good sense of the differences between the two countries. Also, natural resource exploration and

35. *Ibid.*, p. 513.

36. OECD, Table II.1. Statutory corporate income tax rate, Database, 2006-2017.

37. The effective corporate marginal tax rate is the percentage of net income (income less costs) that must be paid in tax on profits, for an investment that pays just enough to make the investment worthwhile. Congressional Budget Office, *International Comparisons of Corporate Income Tax Rates*, March 2017, p. 2.

development projects receive special tax treatment that requires explanation, since it is too often mistaken for hidden subsidies.

Natural resource royalties, including oil and natural gas royalties, reflect the fact of public ownership of the exploited resources. The province of Alberta owns all sub-surface resources, whether on public or private land. This justifies payment to the province in exchange for the extraction of these resources.³⁸ In the United States, on the other hand, governments only own the resources located under public land. As with Canada's provinces, it is the states that set royalty regimes. Even on private land, however, the states collect special taxes that are equivalent to royalties.

Unlike corporate tax, the various royalty regimes cannot be compared in terms of statutory rates. Each regime has a set of rules that cause royalty rates to vary according to oil prices, production volumes, production costs, and other factors.

An Overview of Royalties

In Canada, the federal government collects direct royalties only on oil and gas development projects located on "public lands," such as drilling at sea. It is the provinces that benefit from royalties, as they are the resource owners. They also set their own royalty regimes.³⁹

In the United States, the federal government collects royalties on projects located on federally owned land. The royalty rate is 12.5% (or 1/8) of production value, except for production at sea, where the royalty rate is 16.7% (or 1/6) of production value.⁴⁰

The royalties paid to private property owners must be taken into consideration, since they are substantial. In North Dakota, 13.4% of the surface area of land leased for oil and gas development is owned by residents of the state, and royalties average 17.1%. The proportion of land leased that belongs to residents is 57.6% in

Pennsylvania, where average royalties are 13.5%.⁴¹ The difference between average royalty rates is due in part to the fact that in North Dakota, the royalties are for the development of oil, which has higher royalty rates. In Pennsylvania, the development of natural gas is more prevalent. For the United States as a whole, over 80% of natural gas production and over 75% of oil production comes from private lands, and the average royalty rates on these lands is estimated at 11.8% for natural gas and 13.5% for oil.⁴²

Alberta's Royalty Regime

Following a review of its royalty regime,⁴³ Alberta adopted a new policy that came fully into force in January 2017 for new wells, while existing oil and gas wells are grandfathered under the previous regime until January 2027.⁴⁴ Royalties on conventional oil and natural gas were redefined and lowered. As for the regime covering oil sands development, it did not undergo any significant change but requires more transparency on the costs of oil sands operations.⁴⁵

"Following a review of its royalty regime, Alberta adopted a new policy that came fully into force in January 2017 for new wells."

Before we draw conclusions about the Alberta regime, it must be recognized that royalty rates vary across the production cycle based on various factors, and that they apply to a benchmarked measure of net revenues specific to each well or oil sands project (see Figure 2-3). Therefore, rates don't apply to a firm as a whole, nor to a site if it contains several wells; rather, a separate calculation is made for each well and each oil sands project. At the start of production, the royalty rate is set at 5% for conventional oil and for natural gas. This rate applies

38. "On behalf of Albertans, the Government of Alberta is the owner of 81% of the mineral rights in the province, which includes oil and gas. When companies develop the resources, they must pay the province—that's called a royalty. As resource owner, the Alberta government sets the terms and conditions for development and the royalty rates." Alberta Energy, About Royalties.

39. Jack M. Mintz and Duanjie Chen, *Capturing Economic Rents from Resources Through Royalties and Taxes*, *The School of Public Policy*, SPP Research Papers, Vol. 5, No. 30, The School of Public Policy, University of Calgary, October 2012, pp. 13-15.

40. *Ibid.*, p. 16.

41. James P. Brown, Timothy Fitzgerald, and Jeremy G. Weber, "Capturing rents from natural resource abundance: Private royalties from U.S. onshore oil & gas production," *Resource and Energy Economics*, Vol. 46, November 2016, p. 27.

42. Timothy Fitzgerald and Randal R. Rucker, "US private oil and natural gas royalties: estimates and policy relevance," *OPEC Energy Review*, Vol. 40, No. 1, March 2016, pp. 11 and 15.

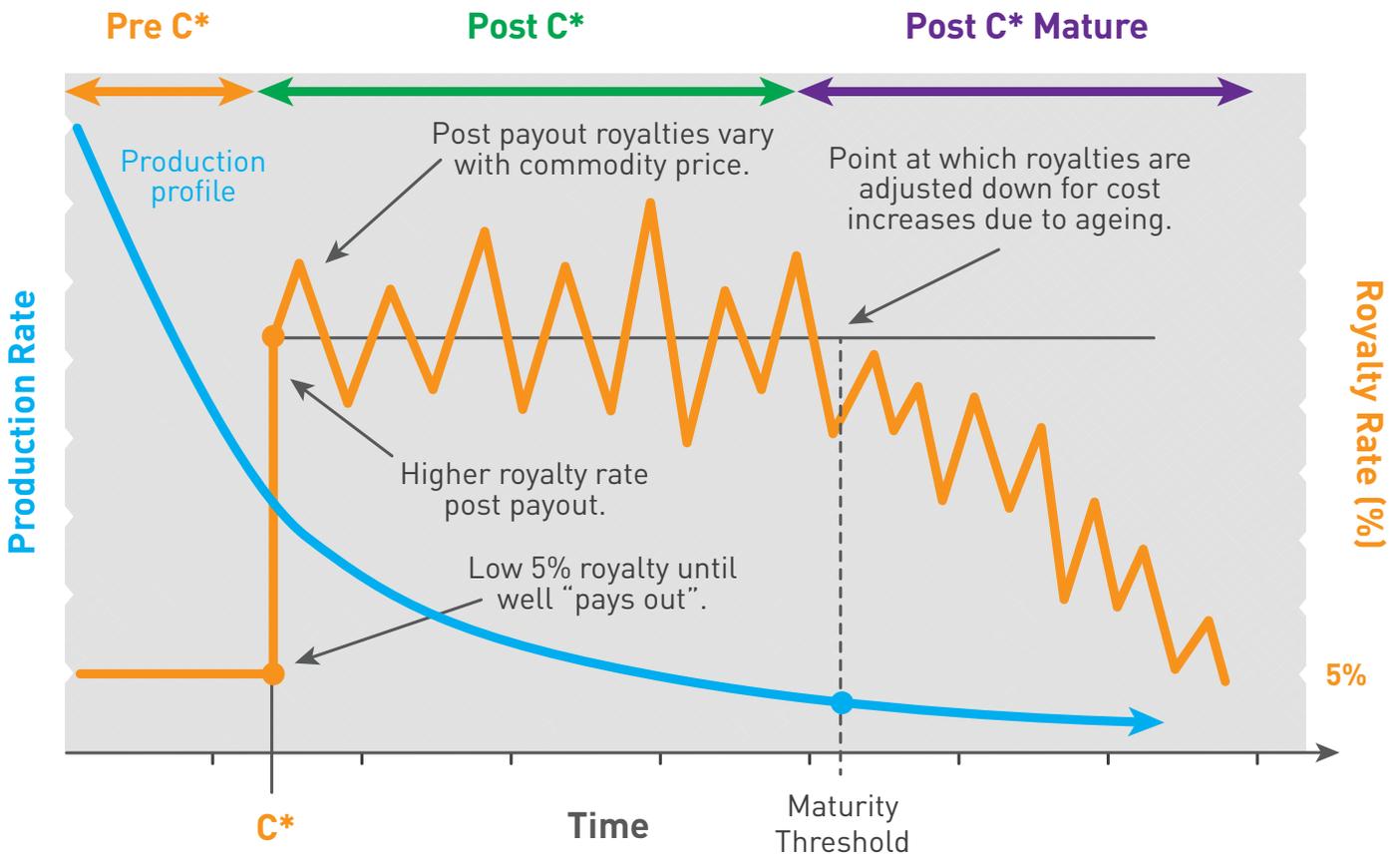
43. Wood Mackenzie, *Alberta at a Crossroads: Royalty Review Advisory Panel Report*, document prepared at the request of Alberta Energy, 2016.

44. Alberta Energy, *Frequently Asked Questions for the Modernized Royalty Framework*, What kind of wells do these new formulas apply to?

45. Daria Crisan and Jack Mintz, *op. cit.*, footnote 30, pp. 7-13; Blake Shaffer, *Lifting the Hood on Alberta's Royalty Review*, SPP Briefing Paper Vol. 9, No. 7, The School of Public Policy, University of Calgary, February 2016.

Figure 2-3

Royalty rate during the production cycle



***Cost recovery threshold**

Source: Government of Alberta, "Alberta's Modernized Royalty Framework Overview," 2017.

"The new regime is much more attractive for the development of conventional oil, helping offset the recent hike in the province's corporate tax rate."

until project revenues have reached a predetermined "drilling and completion cost allowance" threshold. Beyond this point, project revenues are perceived to be sufficient to have offset the expenses involved in setting up the extraction well or project.⁴⁶

Once total revenues exceed this threshold, the royalty rate ranges from 5% to 40% for conventional oil and from 5% to 36% for natural gas. It changes according to the market price of the raw material. Once production reaches maturity (meaning production lower than a specified level, since well production falls over time), the applicable royalty rate varies according to the quantity extracted and can be as low as 5%.⁴⁷

As for the oil sands, a rate of from 1% to 9% applies to a project's gross revenues once it goes into operation and until production covers its costs. After the break-even

46. Government of Alberta, "Alberta's Modernized Royalty Framework Overview," 2017.

47. Alberta Energy, "Modernized Royalty Framework: Formulas, Natural Gas (Methane) and Ethane, For wells spud on or after January 1, 2017"; Alberta Energy, "Modernized Royalty Framework: Formulas Conventional Oil, Pentane Plus (extracted and in-stream component) and Field Condensate, For wells spud on or after January 1, 2017"; Alberta Energy, "About Royalties."

point has been reached, a royalty is applied instead on net revenues. This rate then varies from 25% to 40%, based on the market price of a barrel of oil.⁴⁸

Overall, this new regime attempts to make treatment of the various hydrocarbons uniform with respect to royalties generated. The rates generally apply to net revenues. Interestingly, though, it is not the costs of each operation that are deducted from their revenues, but rather average costs, based on industry experience. This favours highly productive wells with lower-than-average costs. Accordingly, companies have an added incentive to improve their practices and to lower their costs since the resulting savings do not increase the royalties they must pay.⁴⁹

“Overall, Alberta’s royalty regime is seen as being competitive and able to attract new investment.”

These changes make the current regime substantially more competitive than the previous one. According to a recent study analyzing the impact of these changes on the competitiveness of the Alberta regime in drawing in investment, the new regime is much more attractive for the development of conventional oil, helping offset the recent hike in the province’s corporate tax rate, which went from 10% to 12%. Figure 2-4, taken from this study, shows new lower royalty rates when oil is trading below US\$130 a barrel. But when the price is above US\$70 a barrel, this regime is less competitive than those of British Columbia or Pennsylvania, though it remains more attractive than the North Dakota regime.⁵⁰

North Dakota’s Royalty Regime

In the United States, landowners also own their subsurface resources. As such, developers of oil or gas projects need to pay royalties to the owners of the land located above the deposits in compensation for their mineral rights.⁵¹ A typical contract between an owner and a developer “severs” surface property rights from subsurface mining rights. The state government then applies a so-called “severance tax” in lieu of a property tax on land

where oil and gas are extracted. In North Dakota, this separation tax is set at 10% of production value.⁵²

Finally, taking into account total corporate taxation and the royalty rate under various baseline oil price scenarios, it is possible to determine a marginal effective rate that allows for a comparison (see Figure 2-5).

Pennsylvania’s Royalty Regime

Like North Dakota, Pennsylvania also grants mining rights to landowners. However, it does not impose a “severance tax,” although this is currently being debated. A bill imposing such a tax for the extraction of natural gas has been adopted by the Senate, but has not yet been passed by the state’s House of Representatives.⁵³

The other particularity of Pennsylvania is that this state collects no royalties.⁵⁴ However, the state legislated a minimum royalty of 12.5% that has to be paid to landowners, without which their agreements with developers are invalid. Moreover, in February 2012, Pennsylvania imposed an “impact fee” on shale gas producers. This fixed cost is increased annually and must be paid for 15 years to municipalities to compensate them for the environmental damage of drilling operations.⁵⁵

Both in Pennsylvania and in North Dakota, royalties are applied to gross revenues, which is to say the value of production, whereas Alberta imposes royalties on a measure of net revenues. This explains why the rates seem much higher in the case of Alberta. However, when an operation is only marginally profitable, royalties on net revenues will be lower, and royalties on gross revenues could represent more than total profits. Overall, Alberta’s royalty regime is seen as being competitive and able to attract new investment.

48. Government of Alberta, How Royalties Work.

49. Daria Crisan and Jack Mintz, *op. cit.*, footnote 30, pp. 7 and 8.

50. *Ibid.*, p. 12.

51. In some cases, this may be a lump sum. Geology.com, Mineral Rights: Basic information about mineral, surface, oil and gas rights.

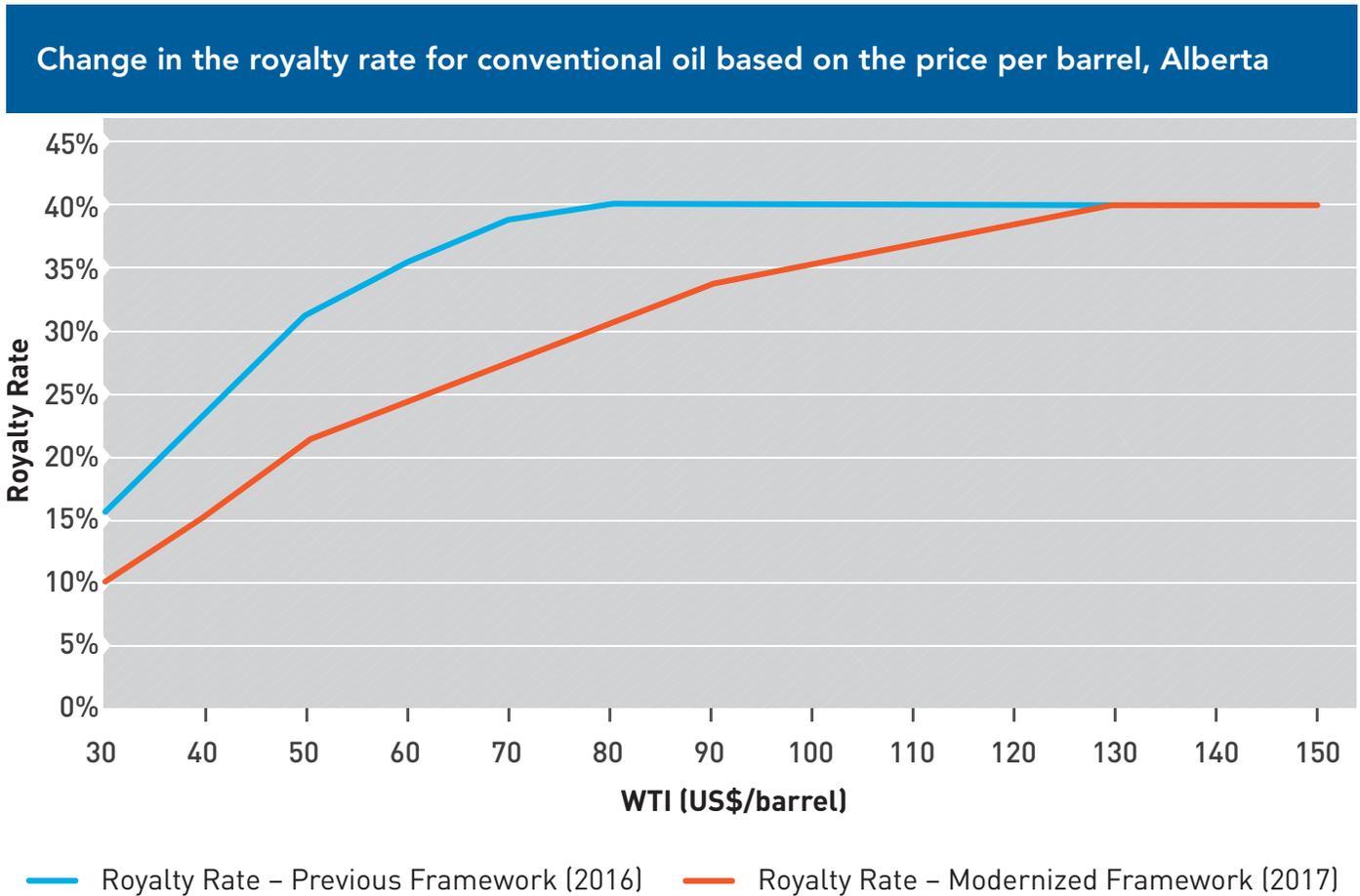
52. Daria Crisan and Jack Mintz, *op. cit.*, footnote 30, p. 10.

53. The severance tax concerns natural gas and could range from US\$0.015 to US\$0.035/Mcf. Pennsylvania General Assembly, *House Bill No. 542—Session of 2017*, July 26, 2017; Colin McNickle, “Natural Gas Severance Tax No Panacea for Pennsylvania Budget Woes,” *Townhall*, September 6, 2017; Daria Crisan and Jack Mintz, *op. cit.*, footnote 30, p. 6.

54. Jack M. Mintz and Duanjie Chen, *op. cit.*, footnote 39, p. 17.

55. Range Resources, “Pennsylvania Impact Fee Summary.”

Figure 2-4



Source: Daria Crisan and Jack Mintz, "Alberta's new royalty regime is a step towards competitiveness: A 2016 update," SPP Research Papers, Vol. 9, No. 35, School of Public Policy, University of Calgary, October 2016, p. 7.

Other Tax Measures and Subsidies

Several environmental groups, and even some politicians, argue that the oil industry is generously subsidized.⁵⁶ This position frequently criticizes tax measures that are favourable to oil and natural gas producers. These assertions are often erroneous or exaggerated.

First of all, it is worth noting that fossil fuel consumption is not subsidized in Canada or in the United States.⁵⁷ However, this type of subsidy is common in many other countries. The International Energy Agency estimated in 2015 that fossil fuel subsidies amounted to US\$325 bil-

"In both Canada and the United States, the tax system takes into account the particular nature of resource development."

lion worldwide.⁵⁸ In Canada, fossil fuel consumption is actually quite heavily taxed, generating revenues for all levels of government totalling \$15.4 billion in 2015, or nearly \$1,100 per household.⁵⁹

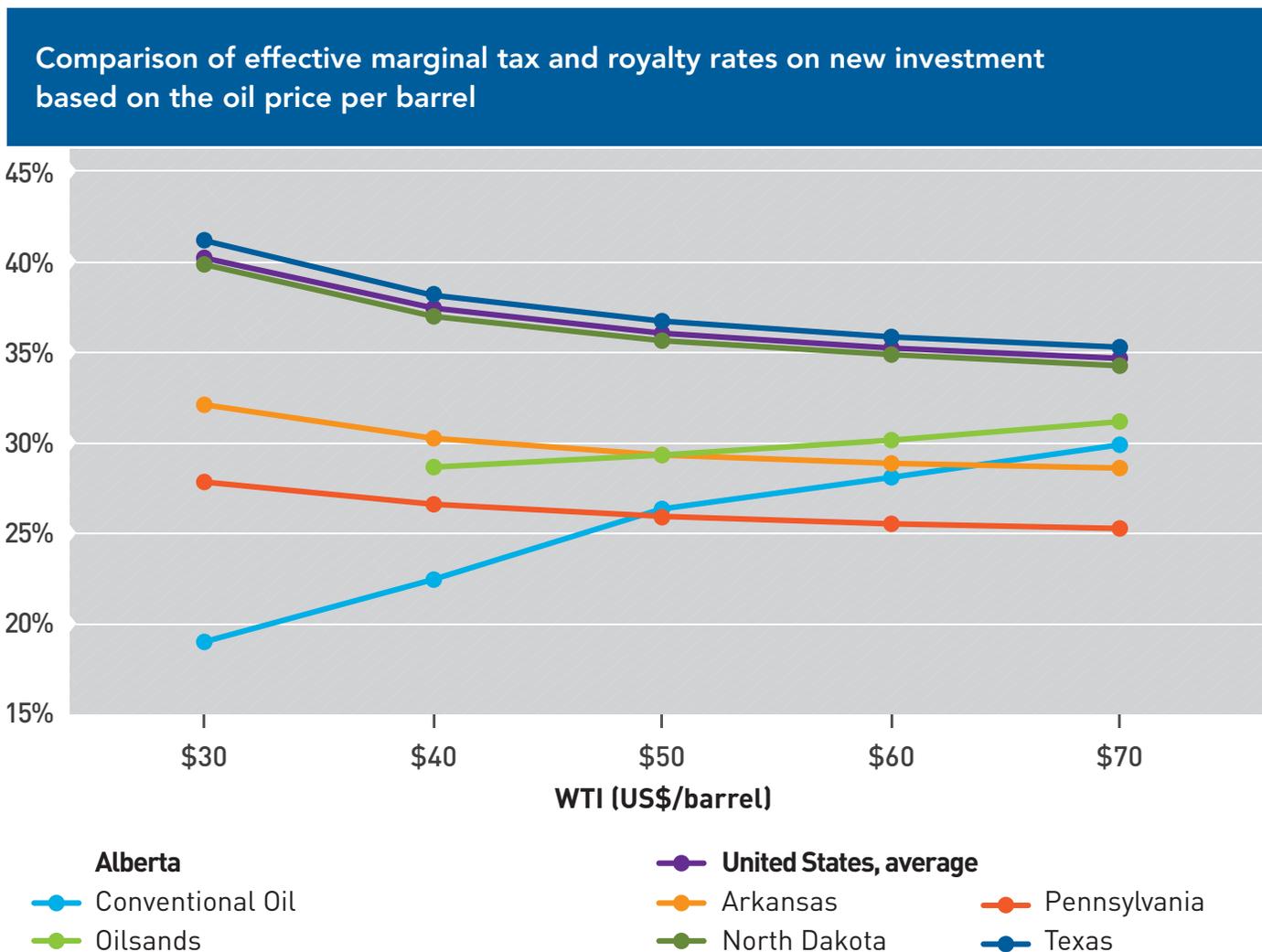
56. Environmental Defence asserted erroneously last year that subsidies to the oil industry amount to US\$3.3 billion annually. Climate Action Network, Environmental Defence, Équiterre and Oil Change International, "The elephant in the room: Canada's fossil fuel subsidies undermine carbon pricing efforts," 2016; Oliver Milman, "Canada gives \$3.3bn subsidies to fossil fuel producers despite climate pledge," *The Guardian*, November 15, 2016.

57. International Energy Agency, *Energy Subsidies by Country*, 2015.

58. International Energy Agency, "Energy Snapshot: Estimates for global fossil-fuel consumption subsidies and subsidies for renewables."

59. Statistics Canada, CANSIM Table 385-0042: Canadian government finance statistics (CGFS), statement of operations and balance sheet for consolidated governments, Gasoline and motive fuel taxes [1142.3], 2015; Statistics Canada, *Private households by household type, 2016 count, Canada, provinces and territories, 2016 Census - Complete data*, July 18, 2017.

Figure 2-5



Note: The marginal effective tax and royalty rate (METRR) is calculated as the amount of taxes and royalties paid as a percentage of the pre-tax-and-royalty, net-of-risk return on capital that would be required to cover taxes, royalties and the financing of capital with debt and equity.

Source: Daria Crisan and Jack Mintz, "Alberta's new royalty regime is a step towards competitiveness: A 2016 update," SPP Research Papers, Vol. 9, No. 35, School of Public Policy, University of Calgary, October 2016, pp. 2 and 12.

It is true that tax measures applicable to the oil and gas industry are sometimes advantageous. In the United States, for example, the federal corporate tax system allows the oil and gas sector the same deductions as the manufacturing sector.⁶⁰ In both Canada and the United States, the tax system also takes into account the particular nature of resource development.

Indeed, this economic sector has an activity cycle that is spread over many years, from initial exploration through to the cessation of activities. Since costs are concentrated mostly in the early years while revenues are generated late in the cycle, tax rules allow costs to be deferred

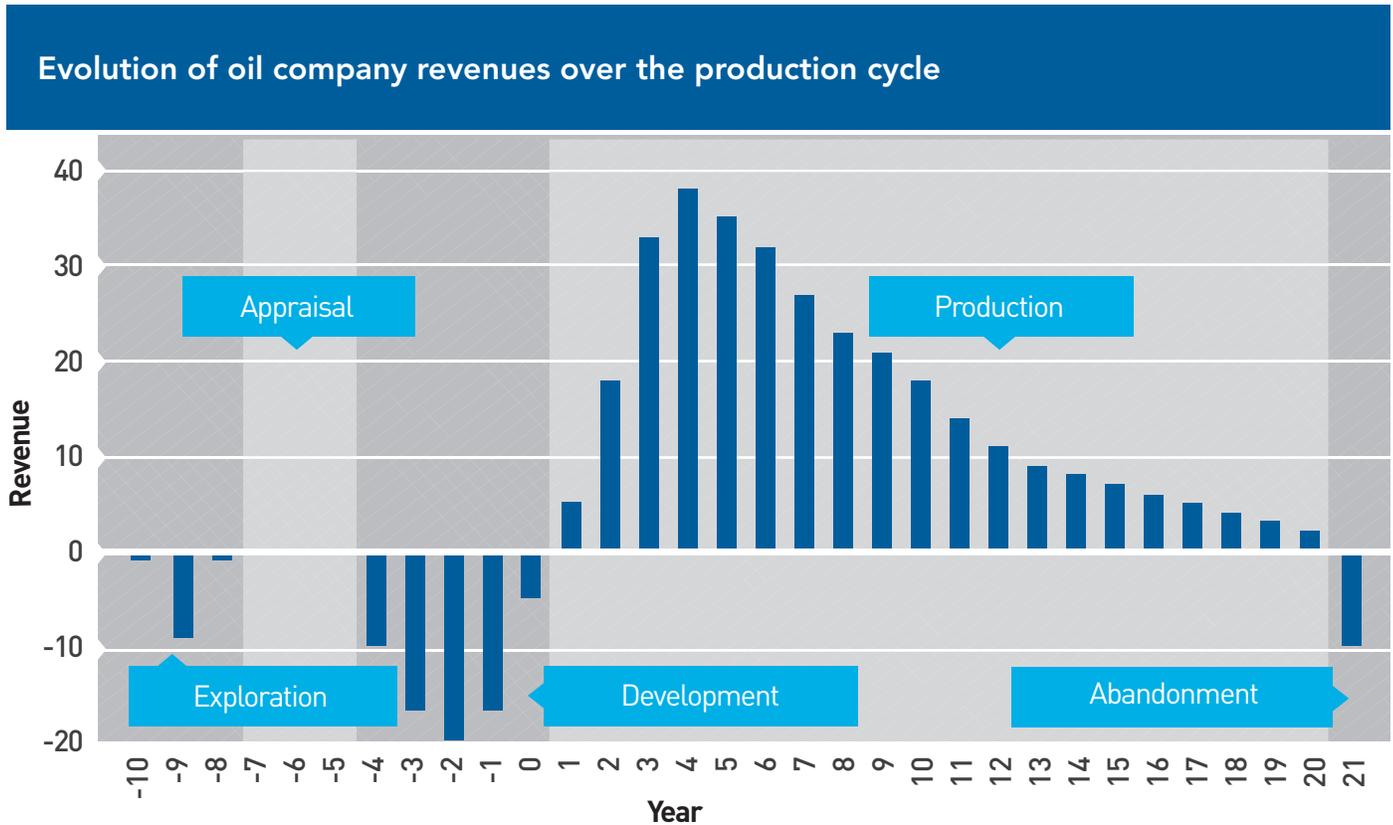
until the years when the revenues come in (see Figure 2-6). In a way, this is meant to avoid penalizing this industry with tax rules that normally apply to companies over a one-year period, whereas the companies in this sector carry out projects over a period that very often exceeds 10 years.

This is not to suggest that there are no oil industry subsidies in Canada. In a comprehensive study, the MEI found that these subsidies amounted to \$71 million annually.⁶¹ The programs that came closest to the traditional definition of a subsidy have all been eliminated,

60. Daria Crisan and Jack Mintz, *op. cit.*, footnote 30, p. 5.

61. Youri Chassin, "Is the Canadian Oil Industry Subsidized?" Economic Note, MEI, May 14, 2014.

Figure 2-6



Source: Fidan Aliyeva, Brief Introduction to Oil & Gas Industry.

in keeping with a 2009 Canadian government commitment with the other G20 countries.⁶² For example, accelerated depreciation of up to 100% of certain mining assets and the tax credit for investments in the Atlantic Provinces have both ended.⁶³

Conclusion

In terms of taxation, Canada appears competitive when it comes to oil and gas activities, especially when we consider Alberta, but less so than at first glance. In the United States, the complexity of the federal tax system and its high statutory rates currently work against the country's competitiveness, and Canada comes out ahead in comparison to its neighbour.

However, a major reform of corporate taxation by the U.S. government would change the situation significantly. Already, many investors' perceptions seem to be less favourable to Alberta. Moreover, Canada generally fares

"A major reform of corporate taxation by the U.S. government would change the situation significantly."

poorly in terms of ease of doing business compared to the United States. According to the World Bank, Canada ranks 22nd in the world, while the U.S. is in 8th place.⁶⁴

Canada cannot rest on its laurels. As we shall see in the following chapters, whether or not it maintains its competitiveness will depend on the tax reform that ends up being adopted in the United States, as well as on the scope of regulatory easing already being implemented on the other side of the border.

62. Trinh Teresa Do, "Justin Trudeau's environment plan: End fossil fuel subsidies, invest in clean tech," CBC, June 29, 2015.

63. Daria Crisan and Jack Mintz, *op. cit.*, footnote 30, p. 4.

64. The ranking is based on Toronto data for Canada and on New York and Los Angeles data for the United States. World Bank, *Doing Business*, Methodology.

CHAPTER 3

Comparing Regulatory Environments

The regulation of economic activity, along with taxation, is a major factor in a country's competitiveness in terms of its ability to attract investment. Laws, regulations, standards and prohibitions, which can all be grouped under the general heading of regulation, place constraints on companies' business decisions and impose costs on them that can be hard to measure. Governments, meanwhile, bear only the cost of application, namely the salaries of civil servants and the costs of the processes involved in ensuring that regulations are enforced. In contrast, the burden of taxation is more explicit, since governments receive however much companies pay. In addition, many regulations also provide benefits to society as a whole that should not be overlooked, even though this does not reduce costs for businesses.

The High Cost of Regulation

In Canada, the reports on paperwork produced by the Canadian Federation of Independent Business (CFIB) are the authoritative source for calculations of companies' compliance costs. The latest CFIB survey found that it would be possible to cut regulations in Canada by 29% without having any effect on their objectives.⁶⁵

Comparing levels of regulation between Canada and the United States is not a simple matter. However, the CFIB has set about measuring the regulatory burden on both sides of the border using the same methodology. While the cost of regulation was evaluated at \$37.1 billion in Canada, it amounted to \$205 billion in the United States, which represents a far lower average cost per employee than in Canada, especially for small and medium-sized enterprises.⁶⁶ All categories of companies, from SMEs to organizations with 100 or more employees, reported a heavier regulatory burden in Canada than in the United States (see Figure 3-1).

In the United States, other assessments have been carried out to measure the regulatory burden, using a different methodology. According to one of the most accurate ones, the various types of federal regulations come at a cost of US\$1.902 trillion in 2017. It is economic regulations (US\$399 billion), environmental regulations

(US\$394 billion), and tax regulations (US\$316 billion) that top the list. This does not take state and local regulations into account.⁶⁷

An estimate calculated by the National Association of Manufacturers for 2012 found that federal regulatory compliance cost businesses US\$2.028 trillion, or 12% of GDP.⁶⁸ This evaluation was criticized, however, in an article by a Stanford University student for failing to take into account the positive impacts of regulation. The article contrasted the association's estimates of the cost of air emissions regulations, which ranged from US\$100 billion to US\$650 billion a year, with the Environmental Protection Agency's evaluation, which found a net economic benefit when the positive impacts are taken into account.⁶⁹ That being said, whether the net social cost is positive or negative does not eliminate the costs for businesses, which are the determining factor when it comes to making an investment decision.

"While the cost of regulation was evaluated at \$37.1 billion in Canada, it amounted to \$205 billion in the United States, which represents a far lower average cost per employee than in Canada."

An excellent reference on U.S. regulatory costs is the Mercatus Center. It estimates not only the costs of complying with regulations but also their dynamic effects, meaning the long-term impact of accumulated regulations on economic growth. From 1980 to 2012, economic growth was thus reduced by 0.8% a year due to the regulatory burden. This may seem low, but over a span of decades, it means that American GDP could have been nearly 25% higher than its current level, or the equivalent of \$13,000 more per capita.⁷⁰ This U.S. assessment makes Canada's more burdensome regulations

65. Marvin Cruz et al., *Canada's Red Tape Report 2015*, 4th edition, Canadian Federation of Independent Business, 2015, pp. 7-9.

66. *Ibid.*, p. 10.

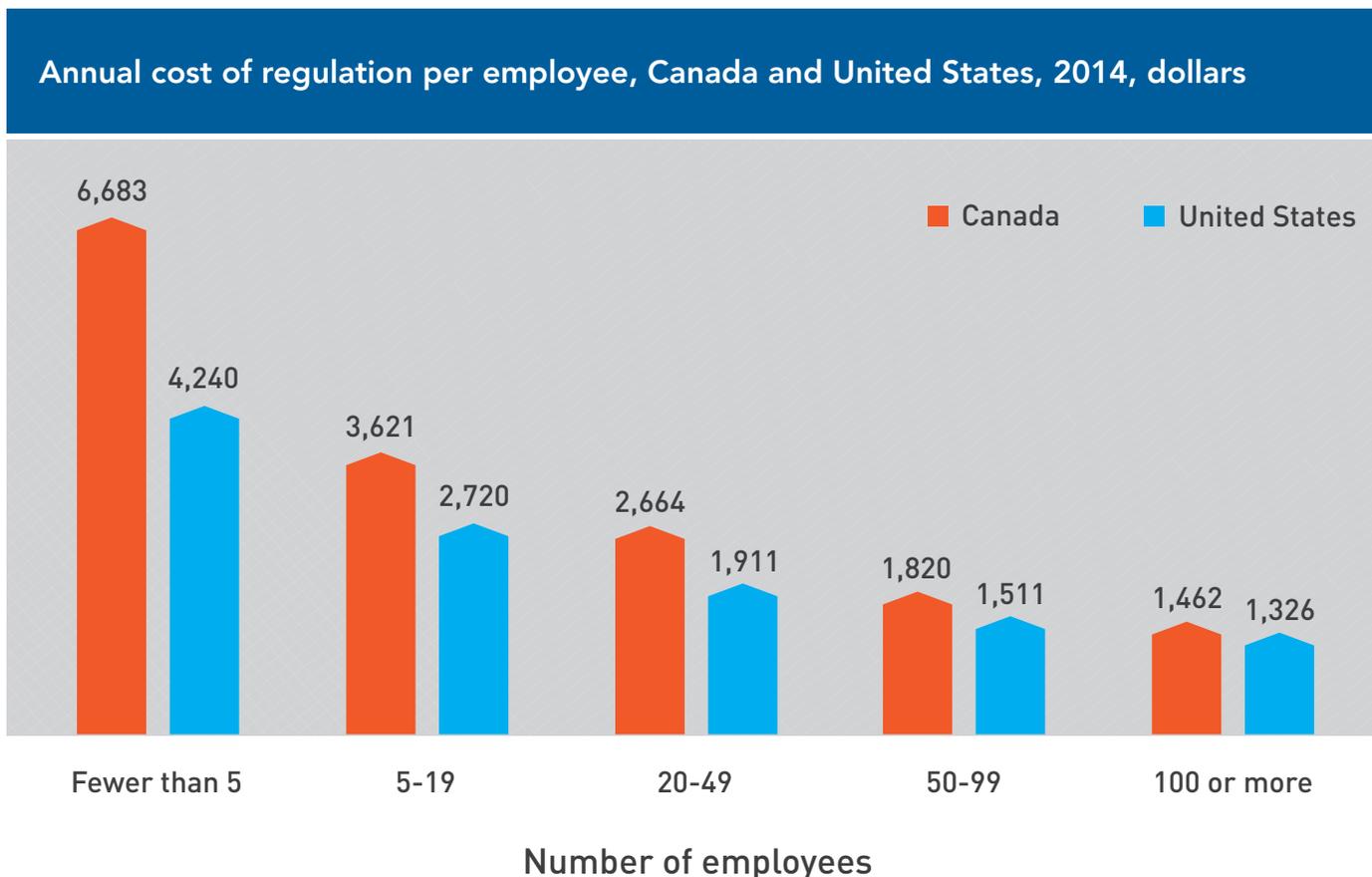
67. Clyde Wayne Crews, *Tip of The Costberg: On the Invalidity of All Cost of Regulation Estimates and the Need to Compile Them Anyway—2017 Edition*, Working Paper, Competitive Enterprise Institute, January 2017, p. 8.

68. In 2014 dollars. W. Mark Crain and Nicole V. Crain, "The Cost of Federal Regulation to the U.S. Economy, Manufacturing and Small Business," *National Association of Manufacturers*, September 10, 2014, pp. 1 and 50.

69. Tony Sang, "Oil and Gas under President Trump," *Stanford Energy Journal*, June 5, 2017.

70. Bentley Coffey, Patrick A. McLaughlin, and Pietro Peretto, *The Cumulative Cost of Regulations*, Mercatus Working Paper, Mercatus Center at George Mason University, April 2016, p. 8.

Figure 3-1



Note: Data are in 2014 Canadian dollars. For the United States, the regulatory burden was measured in 2012 and then indexed.
Source: Marvin Cruz et al., *Canada's Red Tape Report 2015*, 4th edition, Canadian Federation of Independent Business, 2015, p. 9.

all the more troubling, although no equivalent dynamic assessment is available for Canada.

This calculation shows why new regulations must not be considered in isolation from previous regulations. Each added rule runs the risk of leading to duplication, of rendering a regulation obsolete without abolishing it, or of giving rise to contradictions.⁷¹ This is why, on a regular basis, governments attempt to reduce the regulatory burden.

Federal Regulation of the Oil and Gas Sector

There are no comprehensive indices like those applying to the economy as a whole to help us understand the regulation of the oil and gas sector. We do know, however, that the oil and gas sector is among the most heavily regulated.

"In the United States, a compilation of regulatory restrictions ranks oil and gas extraction ninth among the most heavily regulated industries, and the refining of oil and coal into derivative products at the very top."

In the United States, a compilation of regulatory restrictions ranks oil and gas extraction ninth among the most heavily regulated industries, and the refining of oil and coal into derivative products at the very top (see Table 3-1). Both the natural resources sector and the energy sector are tightly controlled, not including downstream regulations on transportation, refining, and fuel consumption.

An interesting analysis of the costs of environmental regulation was carried out by Reuters based on official

71. *Ibid.*, p. 35.

Table 3-1

The most heavily regulated industries in the United States, 2014	
INDUSTRY NAME	NUMBER OF RESTRICTIONS
Petroleum and coal products manufacturing	25,480
Electric power generation, transmission, and distribution	20,960
Motor vehicle manufacturing	16,760
Non-depository credit intermediation	16,580
Depository credit intermediation	16,030
Scheduled air transportation	13,310
Fishing	13,220
Other financial investment activities	12,260
Oil and gas extraction	11,950
Pharmaceutical and medicine manufacturing	11,510

Source: Patrick A. McLaughlin and Oliver Sherouse, *The Impact of Federal Regulation on the 50 States—2016 Edition*, Mercatus Center at George Mason University, 2016, p. 5.

reports filed by American oil and gas companies with the U.S. Securities and Exchange Commission. It shows that regulatory costs represent about 2% of the companies' global revenues. However, in the absence of an objective standard, this analysis can be interpreted as indicating that these costs are either high or low (see Table 3-2 showing the four companies whose costs were broken down).⁷²

Oil and gas development regulations include numerous rules governing the steps for obtaining approval from the public authorities, project operation, and the cessation of activities. Some examples include required authorizations, elements of worker health and safety,

environmental protection, the measurement of pollutants emitted, water use, consultation with local and indigenous communities, taxation, the processes used, site restoration, etc.

Many government departments and agencies are involved in the regulation of oil and gas production. The Bureau of Land Management looks after the leases issued to companies developing hydrocarbon reserves located beneath federal lands. The Environmental Protection Agency handles environmental protection, regulates related industry practices, and oversees spill clean-up operations. The Energy Information Administration compiles a broad series of data on oil and gas and on other forms of energy. The Occupational Safety and Health Administration sets out regulations on worker health and safety in this sector. An array of other

72. Richard Valdmanis, "As Trump targets energy rules, oil companies downplay their impact," Reuters, March 23, 2017.

Table 3-2

Sample estimates of regulatory costs in the oil and gas sector, 2016		
COMPANY	PROPORTION OF GLOBAL REVENUES	COST OF ENVIRONMENTAL REGULATION (BILLIONS OF \$)
Exxon Mobil	2.24%	4.89
Chevron	1.91%	2.10
ConocoPhillips	2.57%	0.63
Occidental	2.82%	0.29

Source: Richard Valdmanis, "As Trump targets energy rules, oil companies downplay their impact," Reuters, March 23, 2017.

public bodies is also involved in various ways in oil and gas regulation, including the Department of Energy, which administers the strategic oil reserve; the Department of the Interior's Office of Natural Resources Revenue, which administers royalties, the Federal Energy Regulatory Commission, which supervises interstate pipelines, and the Bureau of Oceanic Energy Management for offshore drilling.⁷³

"As a general rule, an American landowner possesses not only his or her land, but also all of the mineral and energy resources located below the surface."

The system of subsurface resource ownership in the United States is very different from those in place in Canada and in European countries. As a general rule, an American landowner possesses not only his or her land, but also all of the mineral and energy resources located below the surface. This remains the case whether the owner is an individual, an indigenous band, a company, a municipality, a state or the federal government. However, rights to subsurface resources can be separated from surface ownership and transferred to someone else.⁷⁴

73. Robert A James and Stella Pulman, "Oil Regulation 2017 – United States," Pillsbury Winthrop Shaw Pittman LLP, July 18, 2017.

74. HG.org Legal Resources, Oil and Gas Law.

In Canada, the ownership system allocates subsurface resources to the provincial governments, to the federal government for federal lands and First Nations reserves, and in some cases, to private owners. The extent of private ownership largely depends on when the land was settled. To take the example of a province that was settled later, such as Alberta, the provincial government owns about 81% of the mineral rights, compared to 9% for the federal government and 10% for private owners.⁷⁵

The federal government in Canada is more heavily involved than its counterpart in the United States, where there is no national energy policy to speak of.⁷⁶ However, the Canadian Constitution grants the provinces jurisdiction over natural resources. The federal government maintains a major role due to its jurisdiction over indigenous affairs and interprovincial trade, as well as the environment, an area of shared jurisdiction.⁷⁷ Canada's National Energy Board, a federal body, is the main authority in the approval of interprovincial pipelines, for example. The Canadian Environmental Assessment Agency conducts environmental assessments when these are required at the federal level.⁷⁸

75. Lewis Manning and Bernadita Tamura-O'Connor, "Oil and gas regulation in Canada: overview," Practical Law, Thompson Reuters, June 1, 2017.

76. Michael P. Joy and Sashe D. Dimitroff, "Oil and gas regulation in the United States: overview," Practical Law, Thompson Reuters, June 1, 2016.

77. Graig N. Spurn, Kristen Haines, and Curtis Merry, "Chapter 4: Canada," in Christopher B. Strong (ed.), *The Oil and Gas Law Review – Fourth Edition*, December 2016, p. 32.

78. *Ibid.*, pp. 32-33.

Environmental impact assessments differ somewhat in Canada and the United States. In the U.S., for example, assessments are less comprehensive when drilling takes place on private land. Some generic impact assessments may also shorten delays.⁷⁹

The primary function of an environmental impact assessment in the United States is to determine whether a complete environmental impact statement is necessary. If it is, a more comprehensive assessment is initiated, leading to a more complex, involved, lengthy, and expensive process. The final decision can ultimately be challenged and reviewed before a federal or state court. In the case of a simple environmental impact assessment, the document is made public and announced in newspapers for comment in the regions involved. Based on comments from the parties concerned, a comprehensive assessment may be justified. However, public hearings are not automatically required.⁸⁰

“The federal government in Canada is more heavily involved than its counterpart in the United States, where there is no national energy policy to speak of.”

In Canada, environmental impact assessments are required either by the federal government or by the provincial government. In Alberta, for example, it is the Alberta Energy Regulator that is in charge of conducting impact assessments. At the federal level, the Canadian Environmental Assessment Agency determines whether an impact assessment is required following public consultation. If so, it prepares a report setting out its position and the measures required of the developer, and this report is again submitted for consultation. It is then submitted to the minister responsible, and the final decision is made by the government. The entire process can take up to two years. To be approved, a project must be deemed to be in the public interest.⁸¹

The Canadian Department of Natural Resources has many legislative tools and extensive regulations at its disposal, through among others the National Energy

Board,⁸² the *Canada Oil and Gas Operations Act*,⁸³ and the *Canada Petroleum Resources Act*.⁸⁴ Ten sets of regulations are attached to these two laws alone.⁸⁵ As in the United States, a whole series of laws and regulations may apply in certain cases, such as when the federal government owns the resources or for offshore operations, on matters as varied as worker health and safety, the transportation of hazardous goods, environmental protection, industrial waste, greenhouse gases, and consumer protection.⁸⁶

State and Provincial Regulation

Oil and gas regulation is not just a federal matter, since state and provincial regulations also have a substantial influence on the development of these resources. In the United States, federal laws regulate oil and gas development only on federal or indigenous land, whereas state laws regulate this activity when it involves private owners (individuals or companies) or land owned by a state.⁸⁷ In Canada as well, provincial governments are the source of most regulations.⁸⁸

Pennsylvania

The Pennsylvania government requires developers to take numerous steps before the start of operations. When an extraction project is located near a water source, public park, community, school, or historic site, a developer must show that its project does not pose any environmental risk and must provide the information required by the relevant public authorities. Otherwise, an exploration permit will not be issued. The same applies to the storage and disposal of drilling cuttings.⁸⁹

The state government also requires financial guarantees from developers in the form of deposits. The amount depends on the depth and on the number of wells operated. For example, the operation of 60 wells less than

82. Natural Resources Canada, List of Acts and Regulations, List of acts for which the Minister of Natural Resources is responsible, July 11, 2017.

83. Government of Canada, *Canada Oil and Gas Operations Act* (R.S.C. (1985), Ch. O-7), August 27, 2017.

84. Government of Canada, *Canada Petroleum Resources Act* (R.S.C. (1985), Ch. 36 (2nd Supp.)), August 27, 2017.

85. Natural Resources Canada, List of regulations, January 28, 2015.

86. Lewis Manning and Bernadita Tamura-O'Connor, *op. cit.*, footnote 75; Environment Protection Agency, Oil and Gas Extraction Sector (NAICS 211), October 2016.

87. Robert A James and Stella Pulman, *op. cit.*, footnote 73, p. 2; Michael P. Joy and Sashe D. Dimitroff, *op. cit.*, footnote 76.

88. Lewis Manning and Bernadita Tamura-O'Connor, *op. cit.*, footnote 75.

89. Commonwealth of Pennsylvania, *Title 25 Environmental Protection: Chapter 78a—Unconventional Wells*, Section 78a.15 and Section 78a.61, January 2017.

79. Michael P. Joy and Sashe D. Dimitroff, *op. cit.*, footnote 76.

80. *Idem.*

81. Lewis Manning and Bernadita Tamura-O'Connor, *op. cit.*, footnote 75.

6,000 metres deep requires a \$350,000 deposit. If the operation of a well entails costs for the state, or if regulations are not respected, the deposit is seized.⁹⁰ A wide array of documents, rules, and forms govern the deposit procedure.⁹¹

Once extraction begins, the operator must comply with a series of rules setting out how the well may be operated. For example, the way solid or liquid waste can be disposed of is tightly controlled. A revision of environmental regulations in October 2016 tightened requirements on developers, who can no longer store wastewater at the well site but must ship it to centralized reservoirs that meet higher safety standards, unless they get special permission.⁹² In any event, a plan must be submitted to authorities before extraction begins. Solid waste must be processed in accordance with rules set by the regional branch of the Environmental Protection Agency.⁹³

“Alberta is considered to be a region having regulations as stringent as those in North Dakota, and these two jurisdictions are seen as having regulations that are among the most stringent in the sample examined.”

Well closures and orphan wells are also subject to extensive regulation. Indeed, the state government estimates that between 300,000 and 760,000 wells have been drilled since commercial drilling began in Pennsylvania, dating back to 1859.⁹⁴

It is the Pennsylvania Department of Environmental Protection which is generally responsible for overseeing and enforcing regulations. The department encompasses the Office of Oil and Gas Management and the

Office of Mineral Resource Management.⁹⁵ Among the rules in force, it should be noted that developers must report a certain amount of information to the government, in particular, on hydrocarbon production and on products used in hydraulic fracturing.⁹⁶

North Dakota

In the case of North Dakota, it is the North Dakota Industrial Commission and its Oil and Gas Division that are the main regulatory bodies, backed by the North Dakota Department of Health and the Environmental Health Section on issues involving health and the environment.⁹⁷

The regulations in force are similar to those in Pennsylvania. Chapters 32, 38, and 43 of the state's regulatory code set out most of the obligations of developers. North Dakota's regulations deal with the same topics and control the various stages of approval, operation, and closure of wells. A deposit is also required for each well.⁹⁸

Drilling permits set minimum distances between well-heads and certain facilities such as military bases and airports. However, the director of the North Dakota Industrial Commission has greater latitude in approving submissions from developers than is the case in Pennsylvania.⁹⁹

Alberta

The Alberta government and the Alberta Energy Regulator, the main provincial authority in charge of oil and natural gas development, apply regulations that at first sight appear similar to those in the two states examined here, with regulations governing a system of permits.¹⁰⁰ Environmental protection is also covered by a series of rules governing discharges,¹⁰¹ groundwater protection,¹⁰² the disclosure of any and all spills,¹⁰³ required

90. Pennsylvania General Assembly, Oil and Gas (58 PA.C.S.), Section 3225 – Bonding.

91. Department of Environment Protection of Pennsylvania, Bureau of Oil and Gas Management, *Guidelines for Submitting Oil and Gas Well Bonds: Technical Guidance Number 550-2501-101*, December 2, 2009.

92. Government of Pennsylvania, *Title 25 Environmental Protection*, Pennsylvania Bulletin, Vol. 46, No. 41, October 8, 2016, p. 6438.

93. Drilling Waste Management Information System, State Regulations: Pennsylvania.

94. Pennsylvania Department of Environmental Protection, “Abandoned and Orphan Oil and Gas Wells and the Well Plugging Program,” April 2017; Pennsylvania Department of Environmental Protection, Abandoned and Orphan Well Program.

95. Drilling Waste Management Information System, *op. cit.*, footnote 93.

96. Pennsylvania Department of Environmental Protection, Oil and Gas Frequently Asked Questions.

97. Drilling Waste Management Information System, *op. cit.*, footnote 93.

98. North Dakota Industrial Commission, Department of Mineral Resources, *Rulebook*.

99. North Dakota Industrial Commission, “North Dakota Industrial Commission Drilling Permit Review Policy,” April 4, 2017.

100. Government of Alberta, *Mines and Minerals Act—Oil Sands Tenure Regulation*, 2016.

101. Government of Alberta, *Oil Sands Conservation Act – Oil Sands Conservation Rules*, Part 2 General, 2017.

102. Government of Alberta, *Exploration Regulation*, 2012, Section 45, 2012.

103. Government of Alberta, *op. cit.*, footnote 101, Section 13.

information,¹⁰⁴ etc. Alberta also requires a deposit before a project is authorized, to be returned to the developer only if operations have complied with regulations and there has been no damage to structures, the environment, or renewable resources.¹⁰⁵

According to one comparison between regulations in Alberta and those in force in Australia and Alaska, requirements in all three regions are quite similar.¹⁰⁶ Another comparison, based on a survey, shows that Alberta is considered to be a region having regulations as stringent as those in North Dakota, and that these two jurisdictions are seen as having regulations that are among the most stringent in the sample examined.¹⁰⁷

However, a significant policy shift now differentiates Alberta from the U.S. states. In 2015, the Alberta government adopted a plan to fight climate change that does more than previous regulations to control emissions from the oil and gas sector. The new regulations cap GHG emissions at 100 megatonnes for all oil sands development.¹⁰⁸ They also create a carbon tax of \$20 a tonne in 2017 and \$30 a tonne in 2018.¹⁰⁹ Taking account of federal regulations that set a rising price floor for carbon taxes, the Alberta tax should reach at least \$50 a tonne in 2022.¹¹⁰

As we have seen, state and provincial regulations on hydrocarbon exploration and extraction are comprehensive, and are on top of federal regulations. In addition, lack of access to foreign markets is currently costing the Canadian economy about \$2 billion a year.¹¹¹ Alberta thus stands out from the two U.S. states examined here with its adoption of a plan to fight climate change. This additional constraint is broadly in line with a basic trend over the last two years: Canada's regulatory burden is becoming increasingly onerous.

104. Government of Alberta, *Gas Resources Preservation Act—Gas Resources Preservation Regulation*, Section 3; Government of Alberta, *op. cit.*, footnote 102, Sections 54 to 58.

105. Government of Alberta, *op. cit.*, footnote 102, Sections 27 to 29.

106. Jackie Forrest, "Oil sands regulations stack up well against global peers," *Alberta Oil*, March 23, 2012.

107. Worley Parsons, "An International Comparison of Leading Oil and Gas Producing Regions: Environmental Regulation," Report commissioned by the Canadian Association of Petroleum Producers, 2014, p. 12.

108. Government of Alberta, *Climate Leadership Plan*.

109. Government of Alberta, *Carbon Levy and rebates*.

110. Government of Canada, *Pricing carbon pollution for clean growth*, April 21, 2017.

111. Estimate based on a price of US\$40 a barrel. Gerry Angevine and Kenneth P. Green, *The Costs of Pipeline Obstructionism*, Fraser Institute, July 2016, p. 10.

A Loss of Competitiveness in Canada and Alberta

The control of GHG emissions through a carbon tax carries a financial cost. Alberta altered its royalty system in 2017 to make it more competitive,¹¹² but the carbon tax adds a further regulatory burden. Companies will have to issue accounts, familiarize themselves with new regulations, acquire emissions rights while assessing their own emissions, and obtain free emission allocations from governments based on rules for protecting sectors in competition with countries where no similar regulations exist.

Moreover, in June 2016, the Government of Canada announced a revision of regulatory and environmental processes, primarily through a review of the National Energy Board's mandate and environmental assessments. Two reports were thus submitted to the government, in April and in May 2017.¹¹³

"Alberta stands out from the two U.S. states examined here with its adoption of a plan to fight climate change."

The expected changes are definitely increasing investor uncertainty, especially since there might be a long wait before knowing what direction the government will take.¹¹⁴ For example, the National Energy Board may have to take into account not only GHG emissions from a pipeline project, but also of the upstream and downstream emissions from the fuels to be transported.¹¹⁵ Moreover, a new regulatory body, the Canadian Energy Transmission Commission, could be established to replace the National Energy Board and specifically evaluate pipeline projects.¹¹⁶

The consultation process could also place greater emphasis on social acceptability or the notion of national interest, two controversial concepts.¹¹⁷ This entails

112. Government of Alberta, "Modernized royalty system will promote jobs and investment activity, while increasing revenue to Albertans over time," News release, January 29, 2016.

113. Lewis Manning and Bernadita Tamura-O'Connor, *op. cit.*, footnote 75.

114. Fannie Olivier, "Environnement : Ottawa revoit comment les projets sont évalués," *La Presse*, June 20, 2016.

115. *La Presse canadienne*, "L'évaluation d'Énergie Est tiendra compte des émissions de gaz à effet de serre," *Radio-Canada*, August 23, 2017.

116. Lewis Manning and Bernadita Tamura-O'Connor, *op. cit.*, footnote 75.

117. See, for example, Yuri Chassin and Germain Belzile, "The Three Pitfalls of Social Licence," *Economic Note*, MEI, March 1st, 2017.

significant risk of longer approval times: Several public bodies would be jointly responsible for approving projects, the examination of major projects would be prolonged, and all parties interested in being heard would have to be heard, not just the relevant stakeholders, opening the door wider to pressure groups.¹¹⁸ The need to make more room for indigenous communities was also imposed recently in a Supreme Court of Canada ruling.¹¹⁹

Even at present, timelines for approval are not especially short, and processes are not particularly efficient. Environmental assessments in Alberta took an average of 75.6 weeks to be completed in 2014.¹²⁰ A survey of oil and gas companies found that average approval times for major projects in Alberta range between six and 18 months, while in North Dakota they exceed 18 months and are among the longest. However, average costs for the entire approval process exceed \$2 million in Alberta, whereas they are lower than this in North Dakota.¹²¹

“Average costs for the entire approval process exceed \$2 million in Alberta, whereas they are lower than this in North Dakota.”

While not strictly speaking projects that are hydrocarbon-related, approval times for mining exploration are an interesting indicator of regulatory trends in recent years. These approval times have tended to increase in Canada, according to two-thirds of respondents in a Fraser Institute survey of mining company senior managers.¹²²

Some oil and gas industry players are speaking out to denounce this trend. The chief operating officer of Ensign Energy Services, Bob Geddes, told a specialized magazine in May 2017 that Alberta is “arguably the highest-cost basin in the world, and it’s not because of inefficient operators or equipment. It’s the high royalty

structure, the high tax rates and the uncertainty.”¹²³ While Ensign operates in seven countries—including Venezuela—according to its COO, Alberta (and Canada more generally) is among the “most geopolitically unstable” places in the world. Investors are worried about the government raising royalties and taxes. He estimated that compared to seven or eight years ago, Canada has lost some \$10 billion in annual investments, which translates to around 100,000 jobs. At the moment, he said, “no one is making earnings [or] covering depreciation, which means we’re slowly dying, unless we get to positive earnings.”

In July 2017, Perrin Beatty, the President of the Canadian Chamber of Commerce, wrote a letter to Prime Minister Justin Trudeau showing concern over the adoption of a carbon tax which is in addition to an array of regulatory changes increasing the burden of companies and threatening their competitiveness, especially compared to their U.S. rivals.¹²⁴

The same month, former senior TransCanada executive Dennis McConaghy expressed dismay in the pages of the *Financial Post* over the cancellation of a \$36-billion investment by Petronas in the liquefied natural gas sector in British Columbia. He called the decision “a tragedy for Canada” and “a real condemnation of this country and the utterly unproductive entities in it that simply make any development virtually impossible.” The failure of this project comes as international companies are leaving Alberta’s oil and gas sector due to high costs and a slow regulatory process.¹²⁵

Columnist and former Encana CEO Gwyn Morgan for his part expressed concern for the supremacy of the rule of law in Canada, as well as Canada’s declining competitiveness in relation to its southern neighbour.¹²⁶

And it gets worse. While the Trump administration streamlines regulatory approvals for the construction of American oil pipelines and LNG export facilities, Canada has done the opposite. This has led Canadian oil and gas producers, including my former company Encana, to move tens of billions of investment dollars and many jobs south of the border. And Enbridge’s recent \$37-billion acquisition

118. Lewis Manning and Bernadita Tamura-O’Connor, *op. cit.*, footnote 75.

119. Mélanie Marquis (La Presse canadienne), “L’ONE doit consulter les autochtones sur les projets pétroliers, dit la Cour suprême,” *Le Devoir*, July 27, 2017.

120. Lewis Manning and Bernadita Tamura-O’Connor, *op. cit.*, footnote 75.

121. Worley Parsons, “An International Comparison of Leading Oil and Gas Producing Regions: Environmental Regulation,” 2014, p. 13.

122. Kenneth P. Green and Taylor Jackson, *Permit Times for Mining Exploration: How Long Are They?* Fraser Institute, February 2016, pp. 4-5.

123. James Mahony, “Canada one of the most geopolitically unstable places for oil and gas: Ensign exec,” *JWN Energy*, May 8, 2017.

124. Josh Wingrove, “Canada’s climate-change plan threatens business competitiveness, Trudeau warned,” *The Globe and Mail*, July 25, 2017.

125. Claudia Cattaneo, “A tragedy for Canada: Petronas cancels \$36B LNG project as B.C. jacks up demands,” *Financial Post*, July 25, 2017.

126. Gwyn Morgan, “If they kill Trans Mountain, Canada’s rule of law is broken,” *Financial Post*, July 13, 2017.

of Houston-based Spectra Energy demonstrates that Canadian pipeline companies are also looking to the U.S. for [a growth-friendly regulatory environment].

In the U.S. states, concerns are also sometimes expressed over excessively long approval times. One of the major risks identified by the mining sector is specifically the long delays due to environmental assessments, to regulatory compliance requirements, and to obtaining the required permits. These procedures, costly in terms of time and money, can sometimes lead to delays of more than 10 years to gain approval for mining projects.¹²⁷ Yet Mr. Morgan is not wrong. The direction in which the new U.S. administration is moving leads clearly toward a lighter regulatory and tax regime for the oil and gas sector, as we shall see in the next chapter.

127. Karol Kahalley, Kristin A. Nichols, and Robert A. Bassett, "Mining – United States," in Erik Richer La Flèche (ed.), *The Mining Law Review*, 5th edition, December 2016, p. 233.

CHAPTER 4

The Trump Administration's Reforms: Lowering Taxes and Cutting Regulations

As governments in Canada increase the regulatory burden and corporate taxes in the oil and gas sector, the U.S. government is moving in the opposite direction. Without prejudging the merit of the Trump administration's actions, we need to recognize that they generally favour increased economic activity in these sectors by making the United States a more attractive destination for investment. Some changes have already been implemented, while others are still at the intentions stage.

While we must be cautious about the Trump administration's ability to implement all of its projects, Canadians should be aware that Canadian competitiveness is already being affected by measures that have been adopted, and could be affected even more if other reforms succeed. The relative equilibrium we've enjoyed with our southern neighbour will be thrown off kilter, and will only be re-established if governments in Canada follow suit.

During the 2016 presidential race, candidate Donald Trump promised to cut the federal corporate tax rate. He also promised a substantial reduction in government-imposed regulations and red tape for businesses.¹²⁸ And during the Republican primaries, he came out in favour of increased development of energy resources in the United States, along with pipeline projects.¹²⁹ Among these proposals, we shall see which measures have already been adopted and which ones could be implemented soon.

A Quick, Substantial Reduction in the Regulatory Burden

President Trump's most ambitious plan is to repeal three-quarters of federal regulations.¹³⁰ According to the Competitive Enterprise Institute, these regulations cost \$1.902 trillion a year, a heavy burden on many sectors, as shown in Figure 4-1.

128. Bourree Lam, "Trump's Promises to Corporate Leaders: Lower Taxes and Fewer Regulations," *The Atlantic*, January 23, 2017.

129. Brigham A. McCown, "Energy and Election 2016: Where the Presidential Candidates Stand," *Forbes*, October 29, 2015.

130. Jacob Pramuk, "Trump signs another executive order in push to slash regulations," *CNBC*, February 24, 2017.

President Trump has embarked on the biggest deregulatory operation since the days of Ronald Reagan (see Figure 4-2). According to a *Washington Post* survey, after just 10 days in office, the new administration had already issued 37 different resolutions through Congress aimed at repealing dozens of regulations. This topped what the House of Representatives had undertaken in any of its two-year mandates during the Clinton, Bush Jr., and Obama presidencies.¹³¹ Much of this deregulatory drive targets the energy sector.

Starting in the early days of his presidency, Trump relaunched two pipeline projects, Keystone XL and Dakota Access,¹³² even though they do not comply fully with his requirement that they be made of American steel.¹³³

"Canadian competitiveness is already being affected by measures that have been adopted, and could be affected even more if other reforms succeed."

President Trump also issued an executive order expediting infrastructure projects seen as priorities, especially in terms of environmental rules. The White House Council on Environmental Quality can thus, within 30 days, deem projects to be "high priority." These include electrical grids, airports, port facilities, bridges, highways, and pipelines.¹³⁴

Another measure greatly expands the U.S. energy sector's development prospects. It ends the ban on exporting oil produced in the United States to anywhere except Canada, which had been in effect for 40 years. This measure was adopted not under Donald Trump,

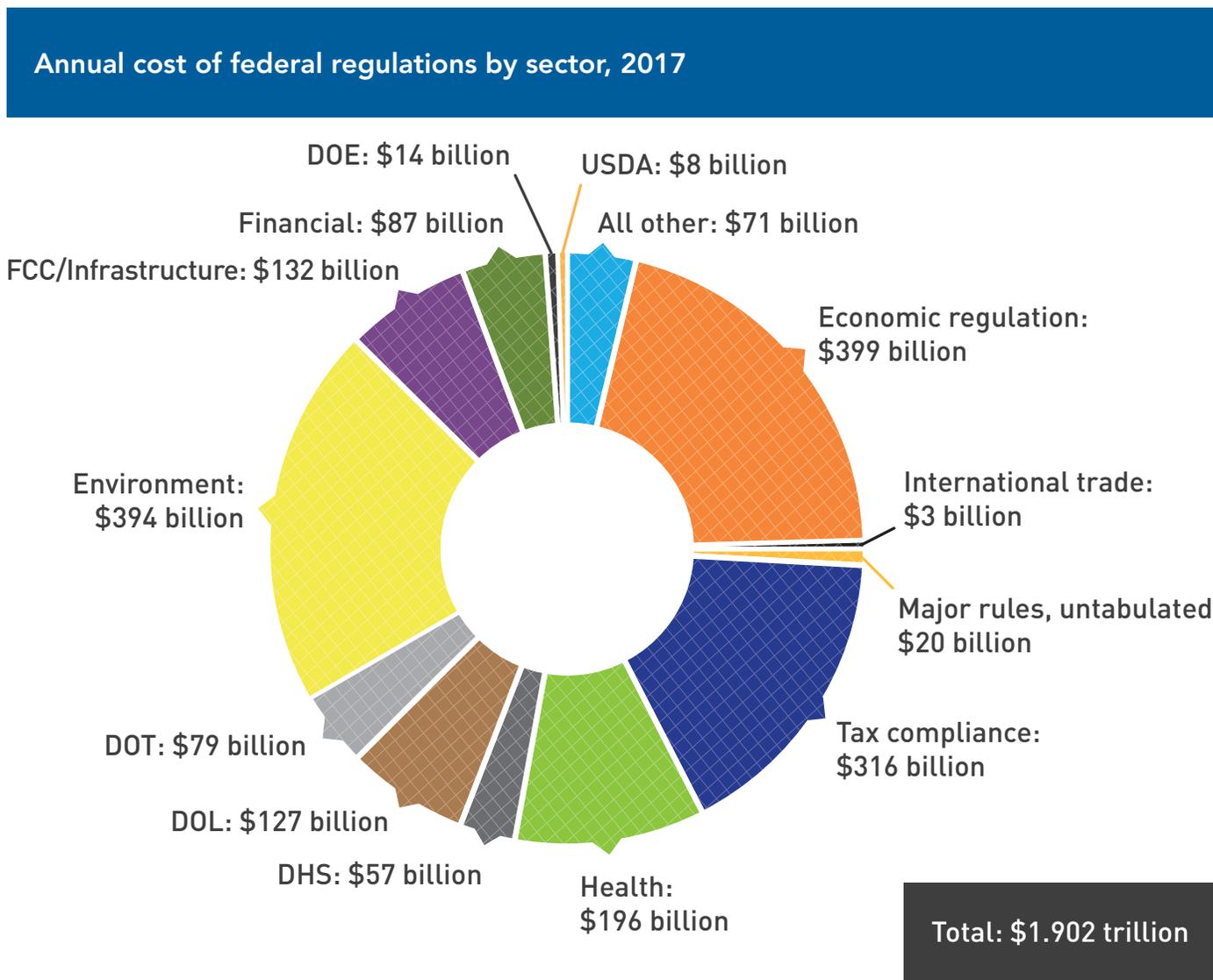
131. The White House, Office of the Press Secretary, "Presidential Executive Order on Reducing Regulation and Controlling Regulatory Costs," Press release, January 30, 2017; The White House, Office of the Press Secretary, "Presidential Executive Order on Enforcing the Regulatory Reform Agenda," Press release, February 24, 2017; The White House, Office of the Press Secretary, "Executive Order Expediting Environmental Reviews and Approvals For High Priority Infrastructure Projects," Press release, January 24, 2017.

132. Steve Holland and Valerie Volcovici, "Trump clears way for controversial oil pipelines," *Reuters*, January 24, 2017.

133. Jennifer A. Dlouhy, "Trump Administration Grants Pipeline Permits without All His Promised Conditions," *Bloomberg*, March 24, 2017.

134. The White House, Office of the Press Secretary, "Executive Order Expediting Environmental Reviews and Approvals for High Priority Infrastructure Projects," Press release, January 24, 2017.

Figure 4-1



Note: DHS = Department of Homeland Security; DOE = Department of Education; DOL = Department of Labor; DOT = Department of Transportation; FCC = Federal Communications Commission; USDA = U.S. Department of Agriculture.

Source: Clyde Wayne Crews, *Tip of The Costberg: On the Invalidity of All Cost of Regulation Estimates and the Need to Compile Them Anyway—2017 Edition*, Working Paper, Competitive Enterprise Institute, January 2017, p. 8.

but in the final year of the Obama administration.¹³⁵ However, the result is in line with the resurgence in the U.S. energy sector promised by Trump.¹³⁶

Growth in U.S. domestic energy production, due mostly to the hydraulic fracturing revolution, has alleviated fears of reliance on imports. The effects are increasingly evident. New horizons have opened up for companies developing U.S. energy resources, since they are no

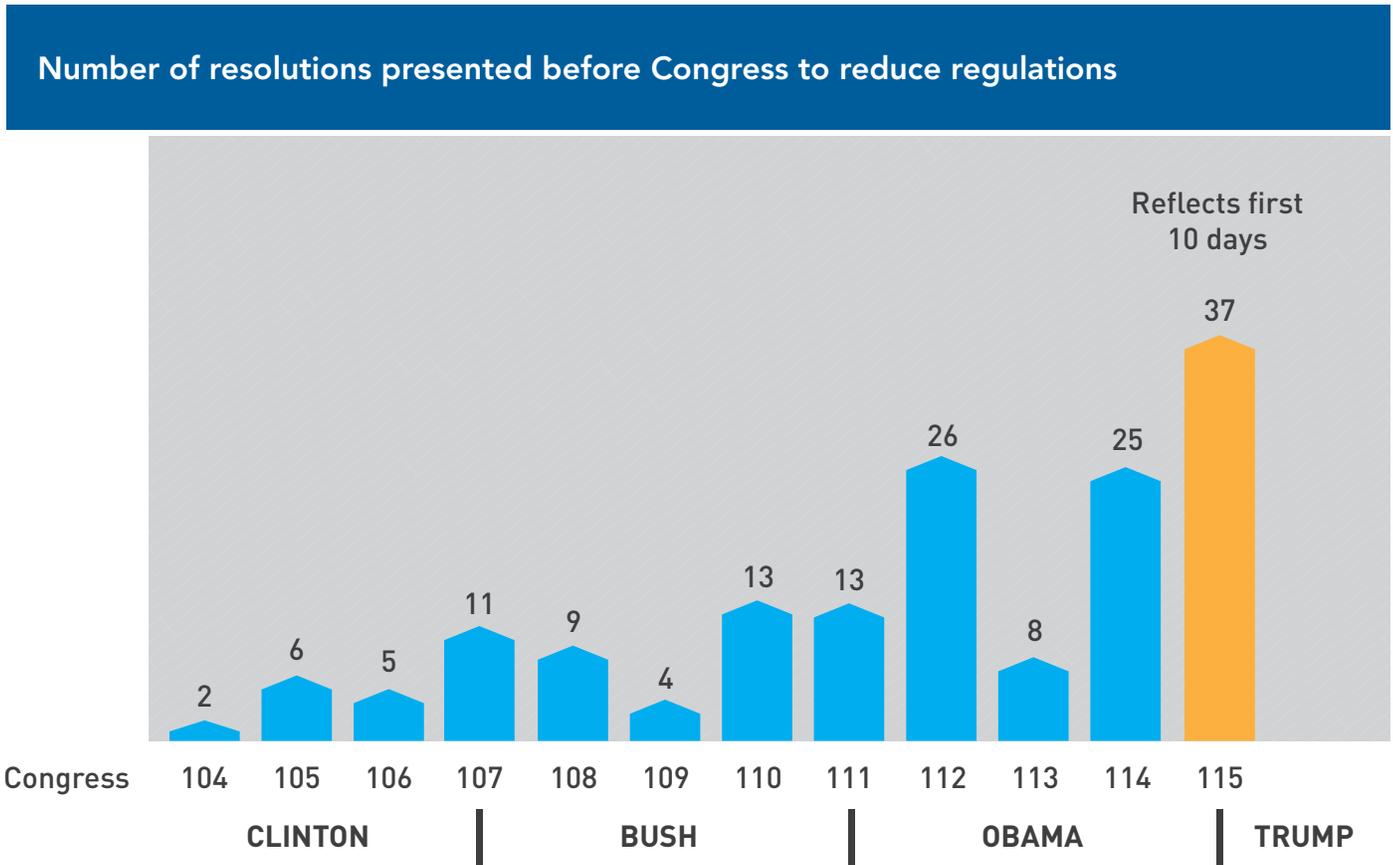
longer limited to the domestic market and can therefore benefit from higher prices in other markets. Decisions to invest in the United States thus no longer have to take into account this anachronistic constraint, which dated back to a 1975 conflict with OPEC.

As for taxation, the Department of the Interior has repealed a rule setting the value of royalties paid on oil, gas, and coal extracted from federal lands. This rule, adopted under the Obama administration, contained

135. "America lifts its ban on oil exports," *The Economist*, December 18, 2015.

136. Clifford Krauss, "Oil Exports, Illegal for Decades, Now Fuel a Texas Port Boom," *The New York Times*, July 5, 2017.

Figure 4-2



Source: Juliet Eilperin, "Trump undertakes most ambitious regulatory rollback since Reagan," *The Washington Post*, February 12, 2017.

numerous flaws, according to the Office of Natural Resources Revenue.¹³⁷

Upon entering the White House, President Trump signed an executive order stipulating that two regulations had to be repealed for each new regulation adopted, excluding independent regulatory agencies such as the Securities and Exchange Commission or regulations involving the army or national security, among others. The costs of compliance with new regulations will also be evaluated and capped, limiting the total cost of regulations adopted over the course of a year.¹³⁸

"President Trump issued an executive order expediting infrastructure projects seen as priorities, especially in terms of environmental rules."

This directive could have a significant and dynamic effect in time by simplifying the rules of various government departments and by establishing a habit of regularly assessing the relevance of old regulations. It is possible, however, that this practice could lead in some cases to the elimination of two minor, obsolete rules that nobody knows about or uses any longer while allowing for the adoption of a tough and wide-ranging regulation. If this happens, regulation would not necessarily be diminished overall.

Another significant limit on the adoption of new regulations is in the process of being adopted. This is the REINS Act (Regulations from the Executive in Need of

137. John Siciliano, "Trump's Interior Department dismantles Obama rule on coal and oil fees," *The Washington Examiner*, August 7, 2017; Department of the Interior, Office of Natural Resources Revenue, *Repeal of Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform*, Federal Register, Vol. 82, No. 150, August 7, 2017, pp. 36934-36989.

138. The White House, Office of the Press Secretary, "Presidential Executive Order on Reducing Regulation and Controlling Regulatory Costs," Press release, January 30, 2017; Ayesha Rascoe and Amanda Becker, "Trump order targeting business rules leaves key regulations untouched," Reuters, January 30, 2017.

Scrutiny), under which congressional approval would be required to implement a regulation with an economic cost exceeding \$100 million, designated a "major regulation." In addition, the economic costs of a major regulation must be offset. This act also triggers an automatic review after 10 years, without which the regulation would no longer be in force. By adding a step to the regulatory adoption process, the REINS Act makes use of the usual counterweights in the U.S. political system, often resulting in gridlock that prevents new measures from being adopted.¹³⁹

Another presidential order instructed the various federal agencies to establish working groups to evaluate federal rules and to recommend maintaining, revising, or repealing them. In addition to imposing a freeze on the adoption of new regulations for 60 days,¹⁴⁰ this provided an opportunity for voices to be heard from industries that have enumerated many instances of red tape and regulatory obstacles, especially due to rules established by the Environmental Protection Agency (EPA).¹⁴¹

This agency, a bugbear of the Republican Party, is very much in Trump's sights. Abolishing the EPA no longer seems to be among the president's priorities, but its staff, budget, and scope could still be trimmed considerably in the coming years.¹⁴²

In an interview, Myron Ebel, head of the transition team at the EPA, spoke of heavy cuts to budget and staff. He said he personally envisioned a 50% reduction in the size of the agency, which has 15,000 employees and an annual budget of \$8 billion.¹⁴³ An agency's budget is highly correlated with the number of regulations it produces, as shown in Figure 4-3.

Furthermore, according to Sofie Miller of the Regulatory Studies Center at George Washington University, one-third of the 66 actions taken by the EPA since the Trump administration took office have consisted of repealing

regulations.¹⁴⁴ Also, the effective date of 30 regulations emanating from this agency has been pushed back.¹⁴⁵

From the very start of the new presidency, a little-known law has been used, which allows regulations adopted by the previous administration to be overturned when there is a change of government: the *Congressional Review Act*. The Trump administration has used it 14 times over the past few months to avoid applying various regulations, some of which involved the environment and the natural resources sector. A think tank has calculated that cancelling these 14 regulations has saved \$3.7 billion in federal agencies' administrative costs and about \$35 billion in compliance costs for businesses.¹⁴⁶

"President Trump signed an executive order stipulating that two regulations had to be repealed for each new regulation adopted."

A fifteenth regulation targeted methane emissions. Senator John McCain blocked its repeal by Congress, but the Trump administration is still considering its abolition, as we shall see below.

The president also announced the withdrawal of the United States from the Paris climate agreement. His intention is to renegotiate its conditions or to enter into another agreement that would be less harmful to the U.S. economy. The White House estimated that the Paris Agreement would have cost the U.S. economy \$3 trillion and jeopardized six million industrial jobs.¹⁴⁷ These estimates include a degree of uncertainty, and remain controversial.¹⁴⁸ However, the agreement set targets that would have imposed binding constraints on the development of the energy sector. Such limits are no longer a concern.

139. United States Congress, *H.R.26 - Regulations from the Executive in Need of Scrutiny Act of 2017*, May 2017.

140. The White House, Office of the Press Secretary, "Presidential Executive Order on Enforcing the Regulatory Reform Agenda," Press release, February 24, 2017; Reuters, "In sweeping move, Trump puts regulation monitors in U.S. agencies," CNBC, February 25, 2017.

141. Valerie Volcovici and Timothy Gardner, "U.S. industry seeks faster permits, simpler rules in Trump regulation reset," Reuters, May 17, 2017.

142. Coral Davenport, "Scott Pruitt Is Seen Cutting the E.P.A. With a Scalpel, Not a Cleaver," *The New York Times*, February 5, 2017; Robinson Meyer, "Congress and Trump Won't 'Terminate the EPA,'" *The Atlantic*, February 16, 2017.

143. Associated Press, "Trump wants to slash the EPA's \$8 billion budget and 15,000-strong workforce says aide—who accuses it of 'junk science' on climate change," *Daily Mail*, January 26, 2017.

144. Greg Ip, "The Myth of Trump's Do-Nothing Presidency," *The Wall Street Journal*, July 26, 2017.

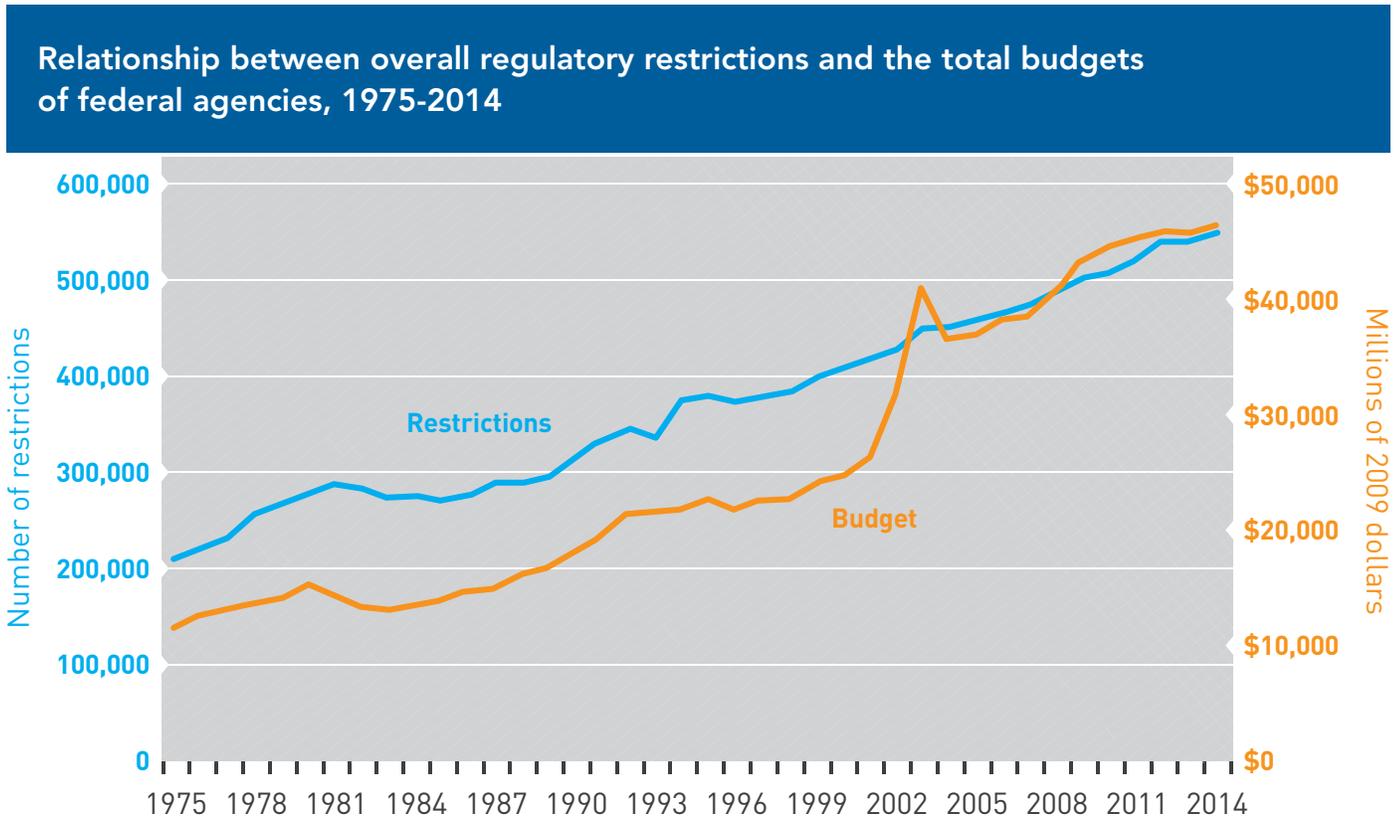
145. Juliet Eilperin, "Trump undertakes most ambitious regulatory rollback since Reagan," *The Washington Post*, February 12, 2017.

146. Michael Grunwald, "Trump's Secret Weapon Against Obama's Legacy," *Politico*, April 10, 2017; Stephen Dinan, "GOP rolled back 14 of 15 Obama rules using Congressional Review Act," *The Washington Times*, May 15, 2017.

147. The White House, "President Trump Announces U.S. Withdrawal from the Paris Climate Accord," June 1, 2017.

148. Vanessa Schipani, Eugene Kiely, Lori Robertson, and Robert Farley, "Fact-checking Trump's speech on Paris climate agreement," *USA Today*, June 2, 2017.

Figure 4-3



Source: Patrick McLaughlin and Oliver Sherouse, The High Correlation Between Agency Budgets and Agency Regulations, Mercatus Center, September 29, 2015.

Other Measures Currently Being Studied

President Trump’s stated intentions include several measures that are still under study. The flagship measure, with the greatest potential impact on the ability of the United States to attract investment, consists of lowering the corporate tax rate from 35% to 20%.¹⁴⁹

The plan includes other tax measures designed to reduce the corporate tax burden. The administration thus announced its intention to reduce taxation of the extra-territorial profits of American companies. Another promise was a lower tax rate, applied only once, on profits repatriated from abroad.¹⁵⁰ One of the most significant proposals would be to allow businesses to write off capital expenditures immediately rather than doing so over

“One-third of the 66 actions taken by the EPA since the Trump administration took office have consisted of repealing regulations.”

a period of several years, a tax break that would have a major impact on their cash flow.¹⁵¹

To partially offset the reduction in government revenues stemming from these tax cuts, a number of tax credits would be eliminated. In addition, the Trump administration believes that the economic growth generated by its tax reform would significantly limit the decline in federal government revenues. Other bills and electoral promises have hit congressional roadblocks, among them attempts to replace Obamacare, which suggests that a

149. Anna Edgerton, Ben Brody and Sahil Kapur, “Trump Calls 20% Corporate Tax Rate in Plan a ‘Perfect Number’,” Bloomberg, September 26, 2017.

150. Treasury Department, Unified Framework for Fixing our Broken Tax Code, September 27, 2017.

151. Jesse Snyner, “Canadian business faces more serious threat in Trump’s tax plan than just cuts,” *Financial Post*, October 2, 2017.

far-reaching reform of corporate taxation would not be easy to guide through the legislative process.¹⁵²

On the regulatory front, the Trump administration seeks to open more federal lands to oil development, including offshore areas in the Arctic and the Atlantic. This would facilitate oil production, whether from underground or undersea deposits.¹⁵³

“The changes already adopted by the Trump administration favour reduced tax and regulatory burdens along with sustained development of oil and natural gas production.”

The U.S. government has also suspended the application of various regulations adopted under the Obama administration, although without repealing them. Pending assessments or court rulings, 39 regulations are thus suspended indefinitely, while others are being assessed with a view to reducing their scope. Many of them cover environmental issues. However, this tactic has run up against a recent appeals court ruling regarding the suspension of the methane emissions regulation, the court seeing it as a “capricious” manoeuvre.¹⁵⁴

The methane emissions regulation applies above all to oil and natural gas development sites on federal land. Its abandonment could lead, however, to an easing of CAFE fuel economy standards for cars and trucks.¹⁵⁵

A related regulation on flaring that sets standards for burning unwanted methane in wells, as well as a requirement to report methane emissions, could both come under review, according to the Department of the Interior. The department also plans to revise or repeal a regulation requiring certain precautions to avoid contaminating groundwater when hydraulic fracturing is used.¹⁵⁶

Other regulations currently under review include the Clean Power Plan, adopted by the Obama administra-

tion in the fall of 2015 to cut emissions from thermal power plants that use fossil fuels.¹⁵⁷ A key measure in President Obama's plan to fight climate change, the Clean Power Plan had already been suspended by the U.S. Supreme Court following a motion by 27 states and various interest groups and companies.¹⁵⁸ The court review should be completed on October 7, 2017, unless the Environmental Protection Agency simply decides to repeal it.¹⁵⁹

A Worrisome Situation for Canada

The changes already adopted by the Trump administration favour reduced tax and regulatory burdens along with sustained development of oil and natural gas production. Not only has energy sector regulation been reduced significantly, but rules have also been instituted to limit the future scope of regulation.

The requirement to repeal two regulations each time a new one is adopted, as well as the power conferred on Congress regarding the approval of regulations that cost more than \$100 million, seem especially significant in this regard. Accelerated approval of high-priority projects also favours an increase in pipeline capacity and the construction of necessary infrastructure, such as port facilities. Tax and regulatory changes still being studied would also lead to a substantially reduced burden for companies in the energy sector.

This makes the situation particularly worrisome for neighbouring Canada. As we shall see in the next chapter, Canada can stay in the race if it too gives itself the means to increase its competitiveness.

152. “Cutting taxes will not be easy,” *The Economist*, August 3, 2017.

153. Velda Addison, “Trump Takes Step to Change Offshore Oil, Gas Leasing Program,” *E&P*, June 29, 2017.

154. John McQuaid, “Make America Wait Again: Trump Tries to Delay Regulations out of Existence,” *Scientific American*, July 24, 2017.

155. Deborah Jaremko, “The oil and gas implications of President Trump,” *JWN*, November 9, 2016.

156. Hiroko Tabuchi and Eric Lipton, “How Rollbacks at Scott Pruitt's E.P.A. Are a Boon to Oil and Gas,” *The New York Times*, May 20, 2017.

157. Environmental Protection Agency, “Review of the Clean Power Plan,” *Federal Register*, Vol. 82, No. 63, April 4, 2017, pp. 16329-16330.

158. Lawrence Hurley and Valerie Volcovici, “U.S. Supreme Court Blocks Obama's Clean Power Plan,” *Scientific American*, February 9, 2016.

159. United States Court of Appeals for the District of Columbia Circuit, “State of West Virginia, et al., v. Environmental Protection Agency and E. Scott Pruitt, Administrator, United States Environmental Protection Agency,” No. 15-1363, August 8, 2017.

CHAPTER 5

Ways to Boost Canada's Competitiveness

The Trump administration's clear intention of reducing the tax and regulatory burdens is threatening the competitiveness of Canada's business environment. Compared to its southern neighbour, Canada could well become less attractive in the eyes of investors. Indeed, as noted in Chapter 1, all signs indicate that this is already the case.

It is therefore essential to consider what should be done to enhance our competitiveness in order to avoid losing ground to the United States. Otherwise, Canada's future economic growth, especially in the oil and natural gas sector, could suffer lasting damage.

At least six possible solutions should be implemented:

- Reduce the overall corporate tax burden;
- Reduce the regulatory burden, with particular attention to the oil and gas sector;
- Ensure predictable and reasonable timeframes for obtaining authorizations, including environmental impact studies;
- Delimit the notion of social licence to encourage rational decision-making;
- Minimize arbitrary political decisions;
- Reconsider the imposition of a carbon tax.

1. Reduce the Tax Burden

Despite continuing uncertainty over the reforms being considered by the Trump administration, the general direction chosen by the U.S. government is clear. One way or another, the tax burden should be reduced over the coming years, corporate taxes in particular.

Currently, the United States has one of the world's highest statutory corporate tax rates.¹⁶⁰ As explained in Chapter 2, however, the fiscal pressure on companies is not as onerous as it seems at first glance. Any tax reduction in the United States would have the effect of worsening Canada's relative position.

Although the Canadian government has made significant efforts to reduce the corporate tax burden in recent years, this new risk needs to be taken seriously. The best way to maintain a certain advantage is to reduce taxes further.

A particularly effective reform option would be to adopt a proportional tax rate of 10.5% for all businesses, instead of this rate being reserved for SMEs and a higher rate of 15% applying to large companies. Having two different rates is a disincentive to business growth. By applying a proportional rate to the taxable income of corporations, regardless of the size of this income, the federal government would enhance the efficiency of the corporate tax system while reducing companies' total tax burden.¹⁶¹

"A particularly effective reform option would be to adopt a proportional tax rate of 10.5% for all businesses, instead of this rate being reserved for SMEs and a higher rate of 15% applying to large companies."

Does the expected 2017-2018 federal deficit of \$28.5 billion¹⁶² allow for such a reduction in corporate tax receipts? The current deficit is largely due to the federal government's desire to increase public investment as a way of stimulating the economy. Reducing the tax burden would also help reach this goal, but it would do so by favouring private rather than public investment. The goal remains the same, but the means would be better suited to the current Canadian context.

Canada's provinces should also consider reducing the corporate tax burden. In addition, they could enhance the competitiveness of their royalty regimes. In the oil and natural gas sector, certain provinces are more competitive than others in terms of royalties. Alberta in particular must ensure that it remains attractive in this regard.

160. The White House, Office of Management and Budget, *Budget of the U.S. Government: A New Foundation for American Greatness—Fiscal Year 2018*, 2017, p. 7.

161. Mathieu Bédard, "To Stay Competitive, Canada Needs a Low, Proportional Corporate Tax Rate," *Viewpoint*, MEI, September 2017.

162. Canadian Department of Finance, *Building a Strong Middle Class: Budget 2017*, March 22, 2017, p. 251.

2. Reduce the Regulatory Burden

Governments regularly grapple with the task of reducing the regulatory burden. However, these episodes produce limited results that do not sustainably prevent the proliferation of laws, regulations, directives, and requirements.

In 2015, the federal government adopted a “one-for-one” rule which consists of abolishing one regulation each time a new regulation is adopted.¹⁶³ Enforcement of this law should be entrusted to a permanent body with the job of reducing the regulatory burden. Rather than conduct sporadic exercises, this body would endeavour to cut back regulation on a permanent basis by aiming to eliminate regulations that achieve little and cost a lot, and by ensuring that processes are as simple and as quick as possible. This body should also look into regulations that apply to key sectors of the Canadian economy. For example, it should act quickly with respect to regulations applicable to the oil and gas sector, which is heavily regulated.

“This body would endeavour to cut back regulation on a permanent basis by aiming to eliminate regulations that achieve little and cost a lot, and by ensuring that processes are as simple and as quick as possible.”

In the context of the review of the mandate of the National Energy Board (NEB), some have suggested that studies of oil or gas transportation projects should include upstream and downstream greenhouse gas emissions from the hydrocarbons to be transported. The NEB decided to apply this analytical framework to Energy East, which finally killed the project.¹⁶⁴ Moreover, from an economic standpoint, this criterion makes no sense, for at least three reasons.

First, all economic development projects are connected to other activities, both upstream and downstream. An assessment of a project must necessarily limit the scope of its study to that particular project. Without such limits, the study of a pipeline would have to take into

account all greenhouse gases emitted in the construction itself, and also in the manufacture of the construction boots worn by the workers! No economic activity is completely independent of others, but the evaluation of any one of them cannot be conducted rationally unless only the new project is considered.

Second, an economic project that is not undertaken may be replaced by another project providing a different solution to the same need. For example, not building a pipeline is likely to increase the shipment of oil by train. The same quantity of oil can theoretically be shipped either way, but no environmental assessment needs to be conducted in the latter case. To imagine that the default option is that the oil will simply not be transported is to engage in magical thinking. If the NEB were to fall into this trap, this would amount to nothing less than a prescriptive bias underlying the entire exercise, removing all objectivity from the study being conducted.

Third, alternatives also exist when it comes to final consumption. Even if there were no other options for the shipment of Canadian oil, the unconsumed barrels of Canadian oil would be replaced by barrels of oil from abroad. This foreign oil may well have produced higher GHG emissions in its extraction and refining. Since Canadian oil is especially efficient in terms of GHG emissions, this substitution will in all likelihood exacerbate the problem it is meant to address. Better to be pragmatic rather than to shift an environmental problem to other producing countries while harming the Canadian economy.¹⁶⁵

3. Ensure Predictable and Reasonable Timeframes

In connection with regulatory relief, the time needed for governments to issue permits or authorizations and to conduct environmental studies should be considered in its entirety. Each step may seem justified in itself, but when the various steps to be taken in carrying out an economic project accumulate and produce unreasonable delays, these requirements end up unduly hampering economic development.

This concern is already being felt in the oil and gas sector. Some projects succeed in moving ahead quickly, or at least in finding out within a reasonable timeframe what conditions they have to meet. This is not always the case, however. Useless duplications, provincial demands on top of federal requirements, and the many agencies

163. Government of Canada, Federal regulatory management, One-for-One Rule, July 8, 2016.

164. “TransCanada demande une suspension temporaire de l’examen d’Énergie Est,” Radio-Canada, September 7, 2017; “TransCanada abandonne le projet d’oléoduc Énergie Est,” Radio-Canada, October 5, 2017.

165. Martha Hall Finley and Trevor McLeod, “Environmentalists should end the charade over the oil sands,” *The Globe and Mail*, February 28, 2017.

and government departments that are involved end up making some approval processes look like highly uncertain obstacle courses.

In the face of such uncertainty regarding the results obtained and the delays involved, many investors will choose to abandon their projects or shift them to countries where the processes are more transparent, the decisions more rational, and the timeframes more predictable. Yet it should be possible for Canada to meet its regulatory goals all while being more efficient in this regard. One concrete solution could be to ensure that only a single environmental assessment is required, in order to avoid having the federal government and a provincial government each imposing one, with the resulting duplication of efforts, higher compliance costs for developers, and longer timeframes.

This objective assumes substantial transparency on the part of all government bodies involved, something which Canada does rather well. The harmonization of as many regulations as possible and the coordination of the authorities could certainly be improved, however.

The federal and provincial governments should agree on maximum timeframes within which a project would receive all necessary authorizations so as to avoid ridiculous delays. Limits on the duration of environmental examination processes should be established for each step in the assessment process. The time required should be long enough to allow for analysis without imposing undue constraints on project developers.¹⁶⁶ In other words, a project for which every step has to be examined in 24 months or less could thus be ensured of getting all necessary authorizations, or of receiving a justified rejection, within that timeframe.

4. Delimit the Notion of Social Licence

One of the factors that unduly lengthen approval times is certainly the fuzzy notion of social licence.¹⁶⁷ In recent years, various projects have been suspended or abandoned for a supposed lack of social licence, without this criterion being operationally defined. Investors have been forced to take part in consultation procedures open to participants with no direct interest related to the projects at issue.

It is therefore important to delimit the notion of social licence more precisely. While there is no doubt about its

166. World Bank, *Getting to Green: A Sourcebook of Pollution Management Policy Tools for Growth and Competitiveness*, 2012, pp. 87-88.

167. Youri Chassin and Germain Belzile, "The Three Pitfalls of Social Licence," *Economic Note*, MEI, March 1, 2017.

importance in certain cases, the circumstances requiring consultations with the affected communities must be defined more clearly, and all information in this regard must be adequately conveyed. Consultations should be limited to the communities directly affected and not open to all organized pressure groups that wish to insinuate themselves into the debate.

The current environmental assessment process, as it is conducted by independent institutions, already allows for irritants to be assessed and minimized. Once all the steps have been completed, analysis of the project allows for the divergent interests to be weighed, by imposing conditions on the developers. The existing regulatory and decision-making processes in place are intended to ensure that only well designed projects that minimize adverse effects can proceed.

"The federal and provincial governments should agree on maximum timeframes within which a project would receive all necessary authorizations so as to avoid ridiculous delays."

Adding a further process specifically looking at social licence threatens the balance between the need for rigour and the need for predictability. The risk for an investor is to see a project receive all the required approvals, obtain all the necessary permits, fulfil all the conditions demanded, and still be rejected. The initial process would then lose much of its relevance. Finally, the too frequent accusation that a project lacks social licence must not be a screen behind which governments can make arbitrary decisions.

5. Minimize Arbitrary Political Decisions

Limiting arbitrary decisions and guaranteeing rational political decision-making form the very basis of the rule of law that characterizes advanced economies, without which sustainable economic development is jeopardized. This requires curbing the possibility for elected officials to interfere in formal project approval processes.

A recent Canadian example illustrates this problem. In December 2013, the Joint Review Panel established by the National Energy Board and the federal environment department recommended conditional approval of the Northern Gateway pipeline project. In June 2014, the

government officially approved the project.¹⁶⁸ The developers therefore had the necessary authorizations in hand and, subject to the stated conditions, could begin work.

Then on June 30, 2016, the Federal Court of Appeal cancelled the certificates of approval and ordered a new consultation with the First Nations concerned,¹⁶⁹ even though most of them had approved it.¹⁷⁰ This new pitfall, however, could not even be overcome. In effect, the new federal government decided to end the process by withdrawing its approval of the project.¹⁷¹

According to a World Bank guide on best practices for managing environmental issues, the role of private companies is to decide *which* projects are feasible. The role of government bodies in charge of environmental assessment processes is to decide *where* and *how* these projects can be carried out, minimizing problems.¹⁷² The Canadian practice by which the federal government has the last word on the approval of a project goes much further. This approach introduces an element of political arbitrariness and allows politicians to make partisan calculations involving the votes potentially won or lost following a political decision. This uncertainty makes the Canadian business environment less attractive to investors. Once the environmental assessment is completed, the government should no longer interfere in the matter.

6. Reconsider the Imposition of a Carbon Tax

In theory, imposing a carbon tax relies on the use of an effective and efficient mechanism for reducing GHG emissions. In practice, however, many conditions must be met for this type of policy to achieve its goals without creating significant economic distortions. First of all, it should be a revenue neutral measure to avoid increasing the overall tax burden. This tax must also be the only means used, and should not be added on top of an

approach of economic micromanagement by the government.¹⁷³

In addition, the carbon tax should be universal. Otherwise, countries adopting it will simply provoke "carbon leakage." This is what happens when a project is set up in a country with no such tax as a way of avoiding it. In this case, GHG emissions will occur anyway, and will affect the global climate.

In Canada, most provinces have adopted GHG reduction plans, with some opting for the taxation of carbon and others for a carbon market which has a similar impact. In the United States, there is no such constraint in the vast majority of states. This may attract investors toward those states and generate carbon leakage.

"Consultations should be limited to the communities directly affected and not open to all organized pressure groups that wish to insinuate themselves into the debate."

In this context, is maintaining a carbon tax in Canada still justified? To answer this question, we must understand that taxing carbon in Canada will produce very weak results in terms of climate change unless the United States and the other leading GHG emitters adopt the same approach. While the benefits may be low, the costs will be substantial. A recent study by the Conference Board of Canada estimates that a carbon tax of \$50 a tonne, as planned by the federal government, would raise the price of natural gas by 20%. Meeting the greenhouse gas reduction goals set by the federal government would require investments of from \$1.5 trillion to \$3.4 trillion between 2017 and 2050.¹⁷⁴

Realistically, it is unlikely that carbon taxation will be completely abandoned. However, if this goal is considered a priority, governments should at the very least abandon other goals that are less of a priority so as to offset cost increases for businesses and consumers. A substantial reduction in the regulatory burden would be necessary. This is in fact what many in the business community are demanding since they can see that at the

168. National Energy Board, *Canada's Pipeline Transportation System 2016, Proposed Export Pipelines*, June 2, 2017.

169. Shawn McCarthy and Jeff Lewis, "Court overturns Ottawa's approval of Northern Gateway pipeline," *The Globe and Mail*, June 30, 2016.

170. Claudia Cattaneo, " 'We are very disappointed': Loss of Northern Gateway devastating for many First Nations, chiefs say," *The Financial Post*, April 10, 2017.

171. Presse canadienne, "Ottawa dit non à Northern Gateway, mais approuve Trans Mountain," Radio-Canada, November 29, 2016.

172. World Bank, *op. cit.*, footnote 166, p. 85.

173. Youri Chassin and Guillaume Tremblay, *Practical Guide to the Economics of Climate Change: The Paris Conference and Its Aftermath*, Research Paper, MEI, November 12, 2015, pp. 29-37.

174. Conference Board of Canada, *The Cost of a Cleaner Future: Examining the Economic Impacts of Reducing GHG Emissions*, September 2017, pp. 18 and 70.

moment, on the contrary, carbon taxation goes hand in hand with increased regulation.¹⁷⁵

Conclusion: The Need to Act Now to Maintain Canadian Competitiveness

The solutions proposed here are possible solutions, and do not claim to be exhaustive. Other solutions may also exist. What is crucial, however, is the urgency of acting.

Remember that the oil and natural gas sector is central to our prosperity, with production valued at \$100 billion and nearly 200,000 jobs. Since all signs indicate that investors are already turning away from Canada in favour of the United States, many of whose policies are more welcoming and could become even more so, time is of the essence.

“Limiting arbitrary decisions and guaranteeing rational political decision-making form the very basis of the rule of law that characterizes advanced economies.”

If Canada enjoyed a major competitive advantage because of its tax and regulatory environment, then tax cuts and reduced regulation in the United States would be less threatening. As we have seen, however, this is not really the case.

Canada cannot allow itself to remain passive in the face of the Trump administration's ambitious intentions. The federal government has taken the threats to the North American Free Trade Agreement very seriously. It is distressing to see that this is still not the case when it comes to the threats that are already undermining the essential oil and gas sector. It is high time to get back on track.

175. Josh Wingrove, “Canada's climate-change plan threatens business competitiveness, Trudeau warned,” *The Globe and Mail*, July 25, 2017.

ANNEX

The Choice of One Province and Two States for Purposes of Comparison

To compare the tax and regulatory policies of the United States and Canada, we must not limit ourselves to the federal level. The states and provinces also play a substantial role. It would nonetheless be overly ambitious for this Research Paper to review the multiple differences between all the American states and all the Canadian provinces that produce oil and natural gas.

In order to obtain an accurate picture of the situation without considerably complicating the task at hand, one province and two American states were selected for purposes of comparison: Alberta, the primary oil and gas producing province; Pennsylvania, the second largest natural gas producing state after Texas; and North Dakota, the second largest oil producing state, also after Texas.

Texas is in a class of its own, both due to the size of its production and its refining capacity and due to its very long oil and gas history. It is also further from Canada, both geographically speaking and in terms of culture, taxation, and regulations. It therefore seems appropriate to choose other states for purposes of comparison.

The two American states chosen have some interesting characteristics, more directly comparable with the Canadian provinces. Their royalty regimes and their regulatory frameworks also reflect the most recent developments in hydrocarbon production in the United States. A mere ten years ago, neither of these two states was in a situation comparable to today's in terms of production (see Figures A-1 and A-2).

Here is some additional information on the province and the states selected.

Alberta

The province of Alberta has an area of 661,848 km² and a population of nearly 4.3 million.¹⁷⁶ It is a province where the regulatory framework and the tax system have undergone major transformations in recent years. It is all the more important, in this context, to make comparisons in order to keep from undermining the competitiveness of the industry in this province.

176. Canadian Encyclopedia, Alberta; Statistics Canada, CANSIM Table 051-001: Estimates of population, by age group and sex for July 1, Canada, provinces and territories, 2016.

Its production of oil represents 80% of total Canadian production (see Figure A-3). Despite some decreases in recent years, it still produces over two thirds of natural gas. In the early 2000s, this proportion was over 80% (see Figures A-4 and A-5). The substantial increase in natural gas production in British Columbia has compensated in part for the decreased production in Alberta.¹⁷⁷

Pennsylvania

The state of Pennsylvania is the second largest US producer of natural gas after Texas (see Figure A-6). It shares a border with the province of Ontario, on Lake Erie. With an area of 119,280 km² and a population of nearly 12.8 million,¹⁷⁸ Pennsylvania is located on the Marcellus formation, which contains a substantial amount of shale gas.

North Dakota

The state of North Dakota is the second largest US oil producer after Texas (see Figure A-7). This state suffers from the same continental isolation as Alberta. Its oil production has reached record levels mainly due to new extraction techniques.

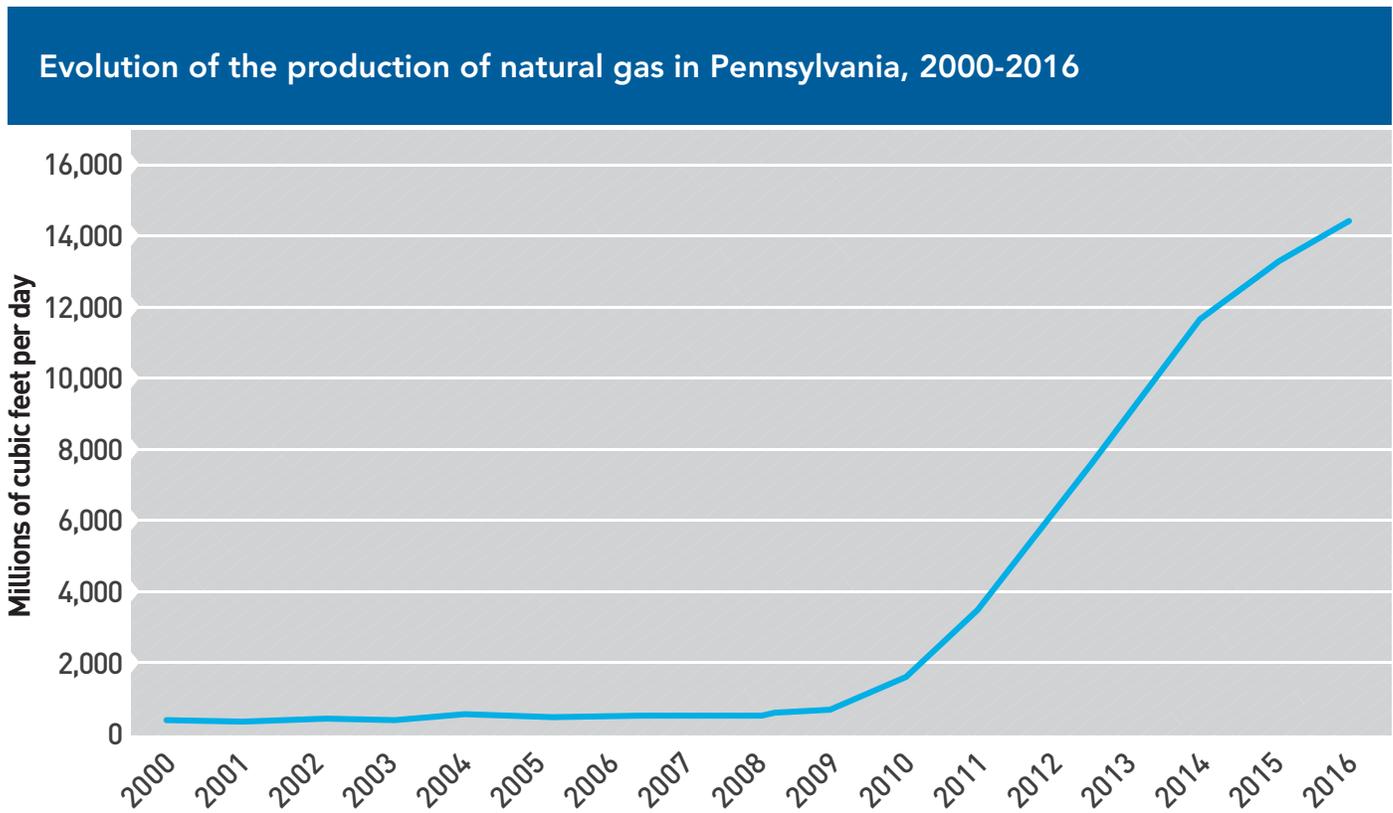
With an area of 183,108 km² and a population of nearly 758,000 inhabitants,¹⁷⁹ North Dakota shares a border with the Canadian provinces of Saskatchewan and Manitoba. This state draws its unconventional oil from the Bakken formation.

177. National Energy Board, Marketable Natural Gas Production in Canada, 2017.

178. U.S. Census Bureau, Geography, State Area Measurements and Internal Point Coordinates, Pennsylvania; U.S. Census Bureau, State Population Totals Tables: 2010-2016, Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2016, Pennsylvania.

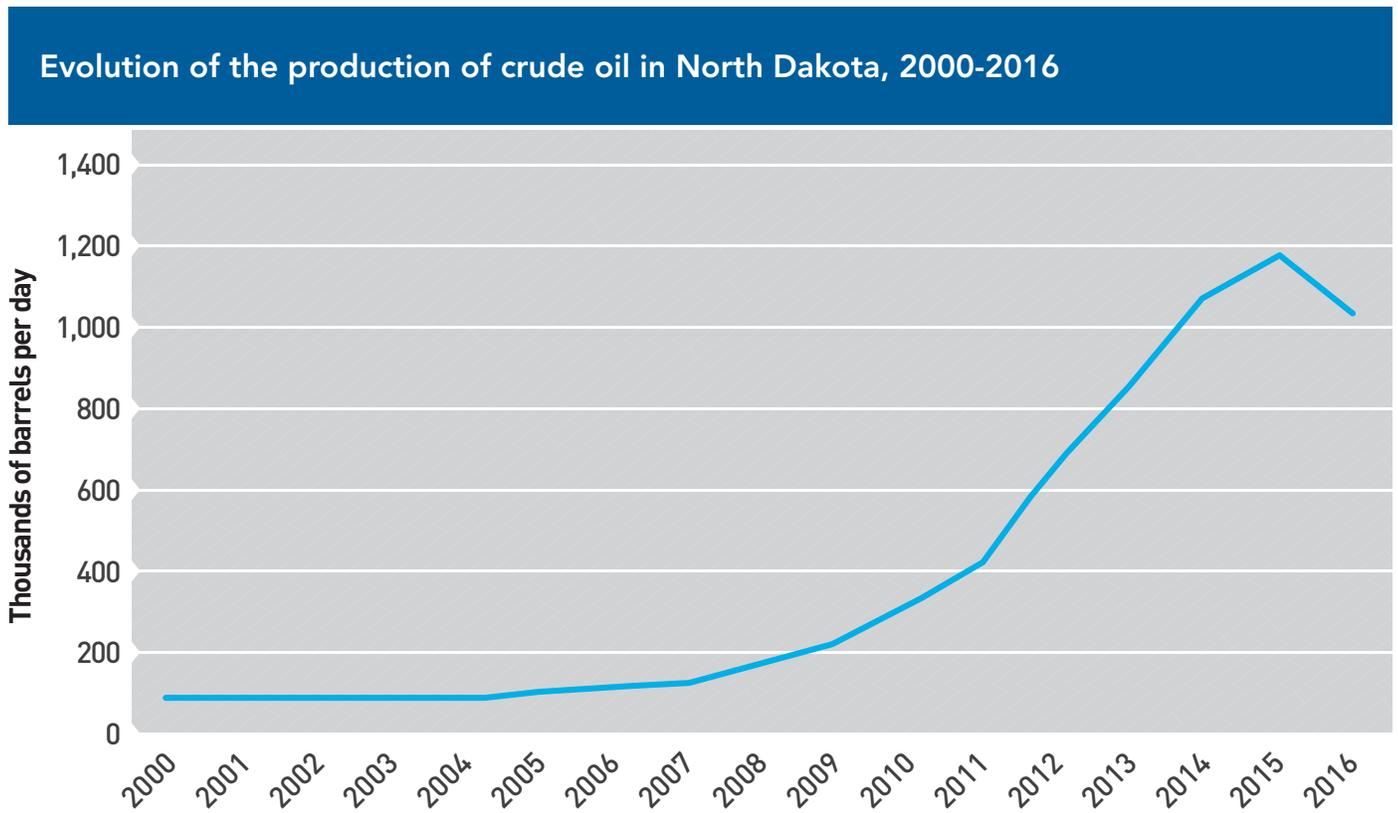
179. *Ibid.*, North Dakota.

Figure A-1



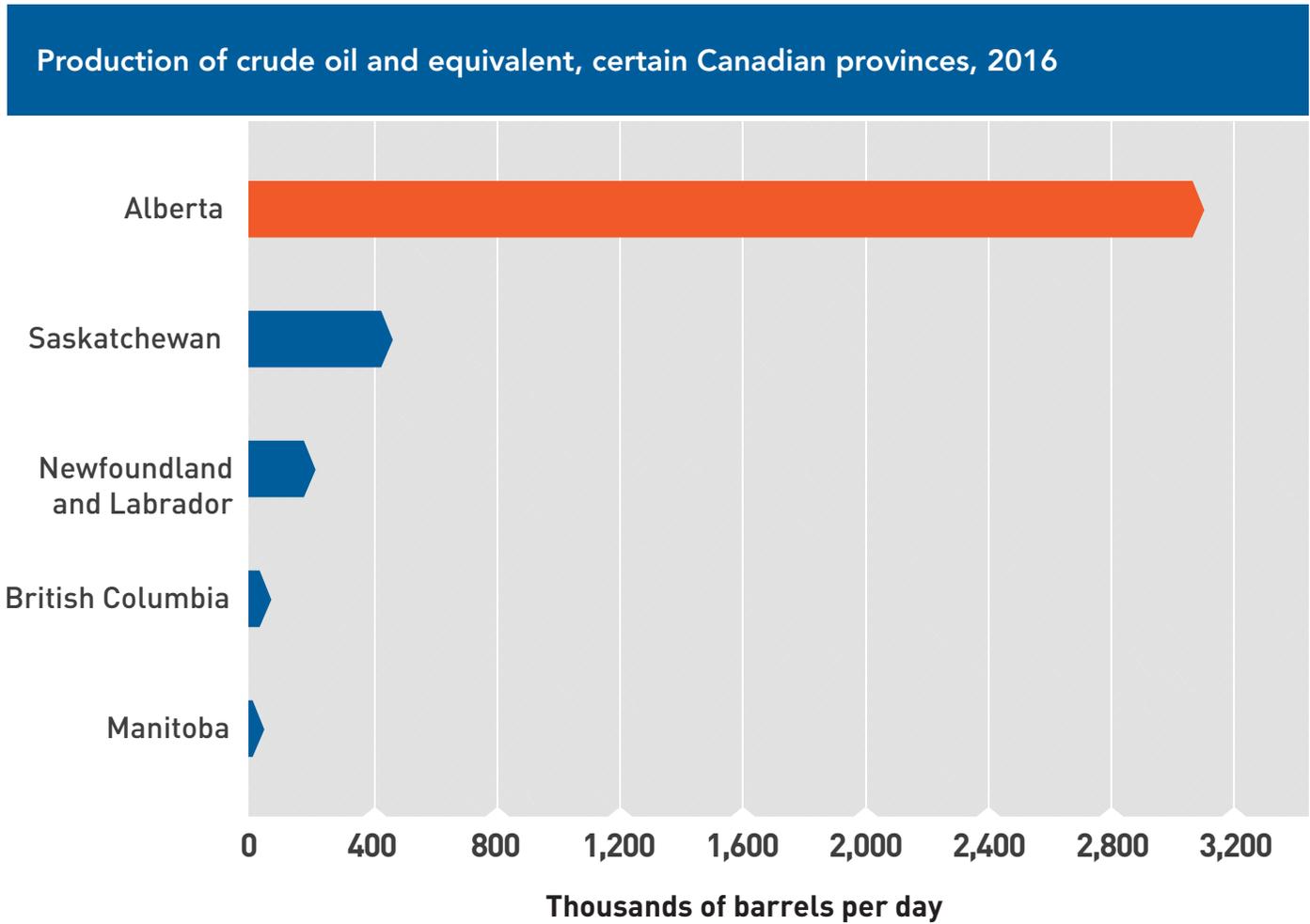
Source: U.S. Energy Information Administration, Natural Gas, Pennsylvania Natural Gas Marketed Production (MMcf), August 31, 2017.

Figure A-2



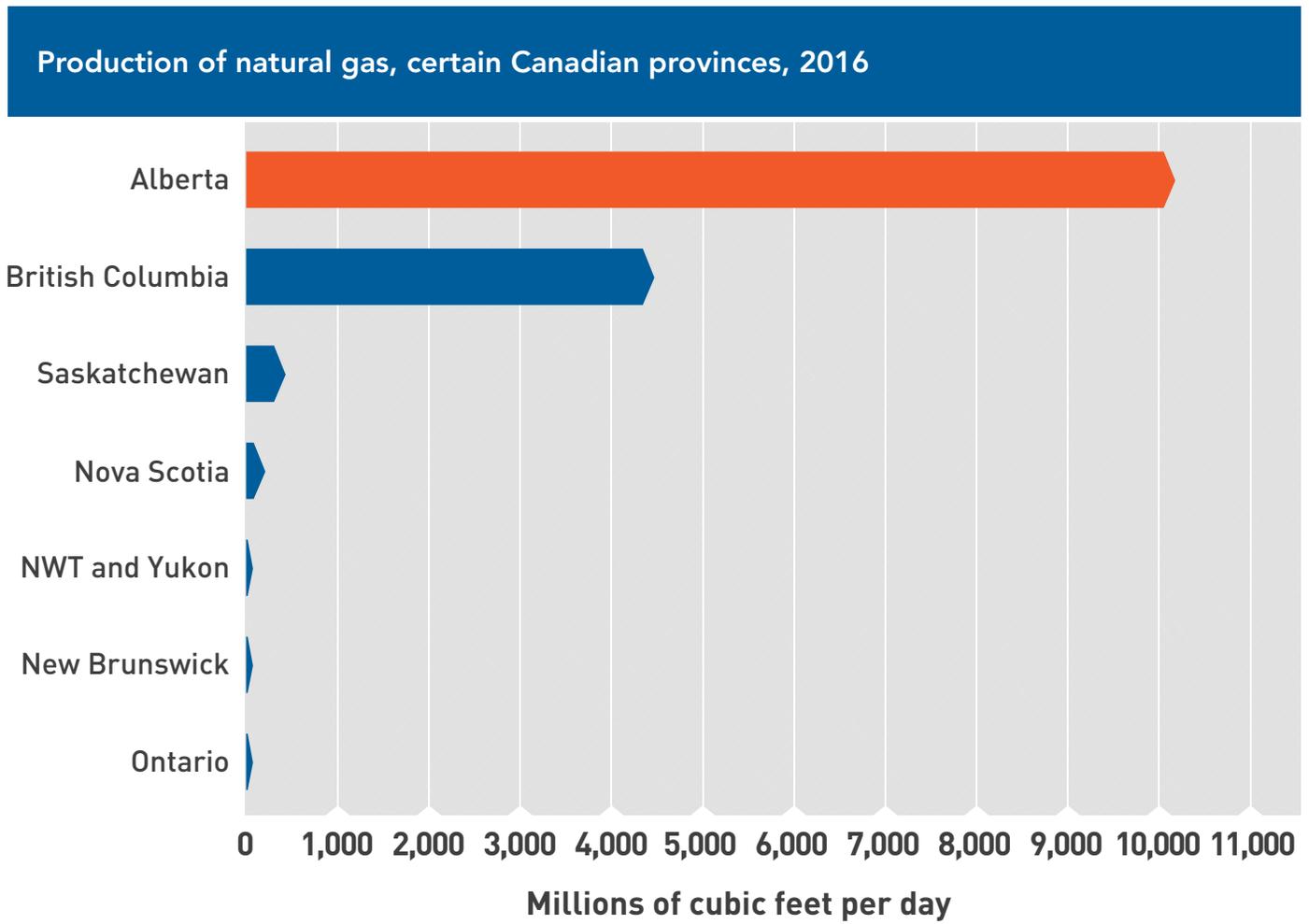
Source: U.S. Energy Information Administration, Crude Oil Production, North Dakota Field Production of Crude Oil Annual, September 13, 2017.

Figure A-3



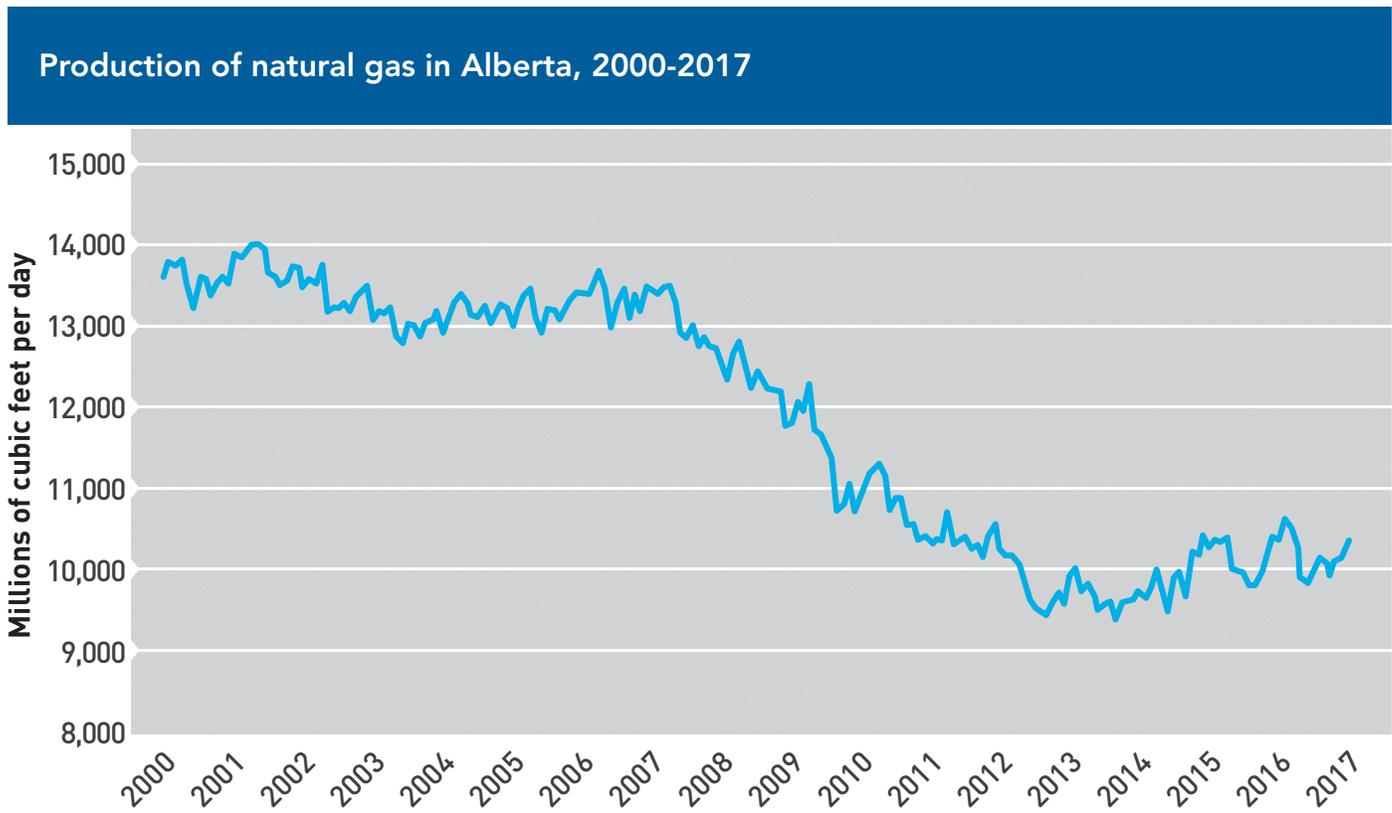
Source: National Energy Board, Estimated Production of Canadian Crude Oil and Equivalent, July 7, 2017.

Figure A-4



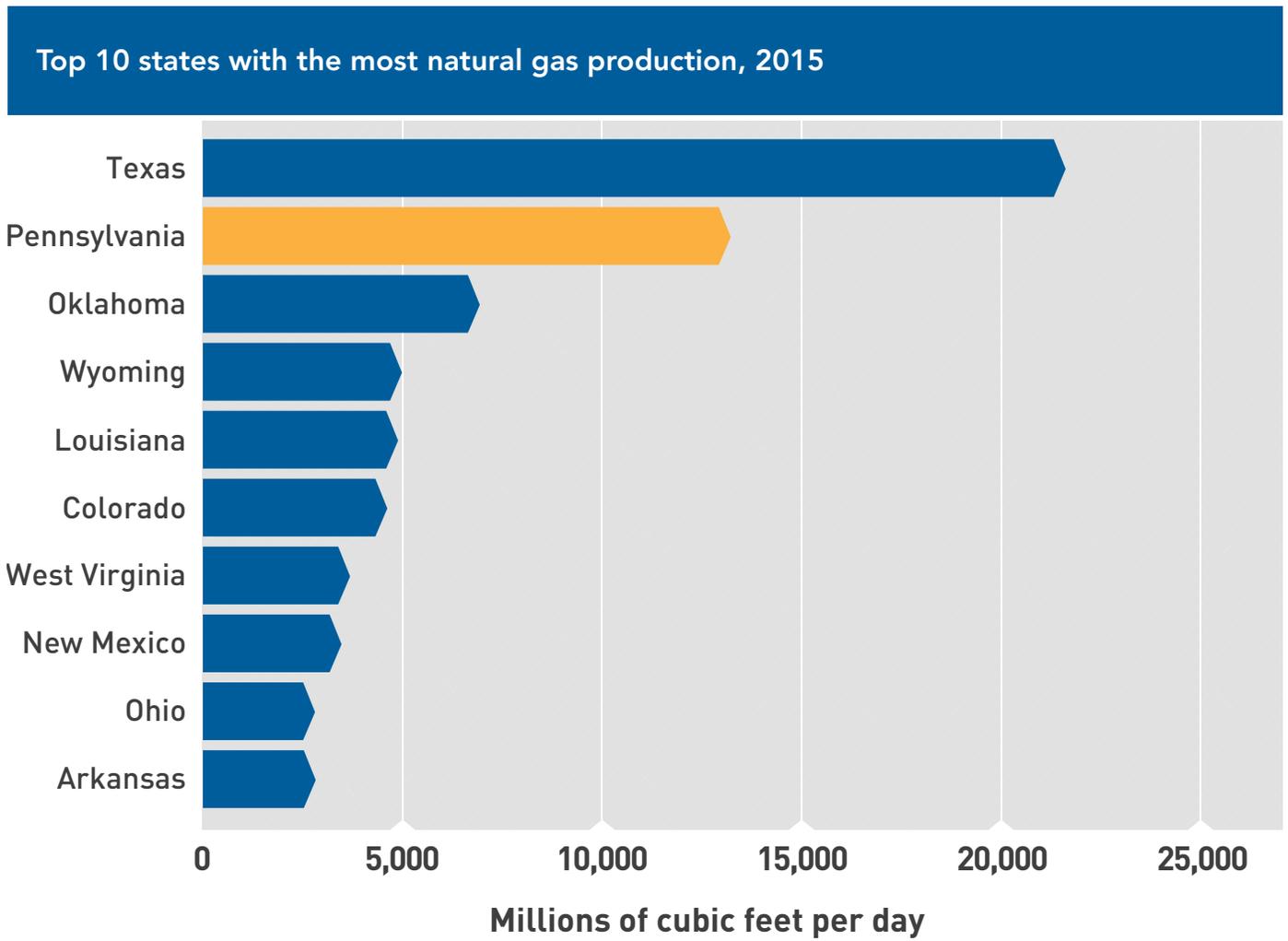
Source: National Energy Board, Marketable Natural Gas Production in Canada, September 25, 2017.

Figure A-5



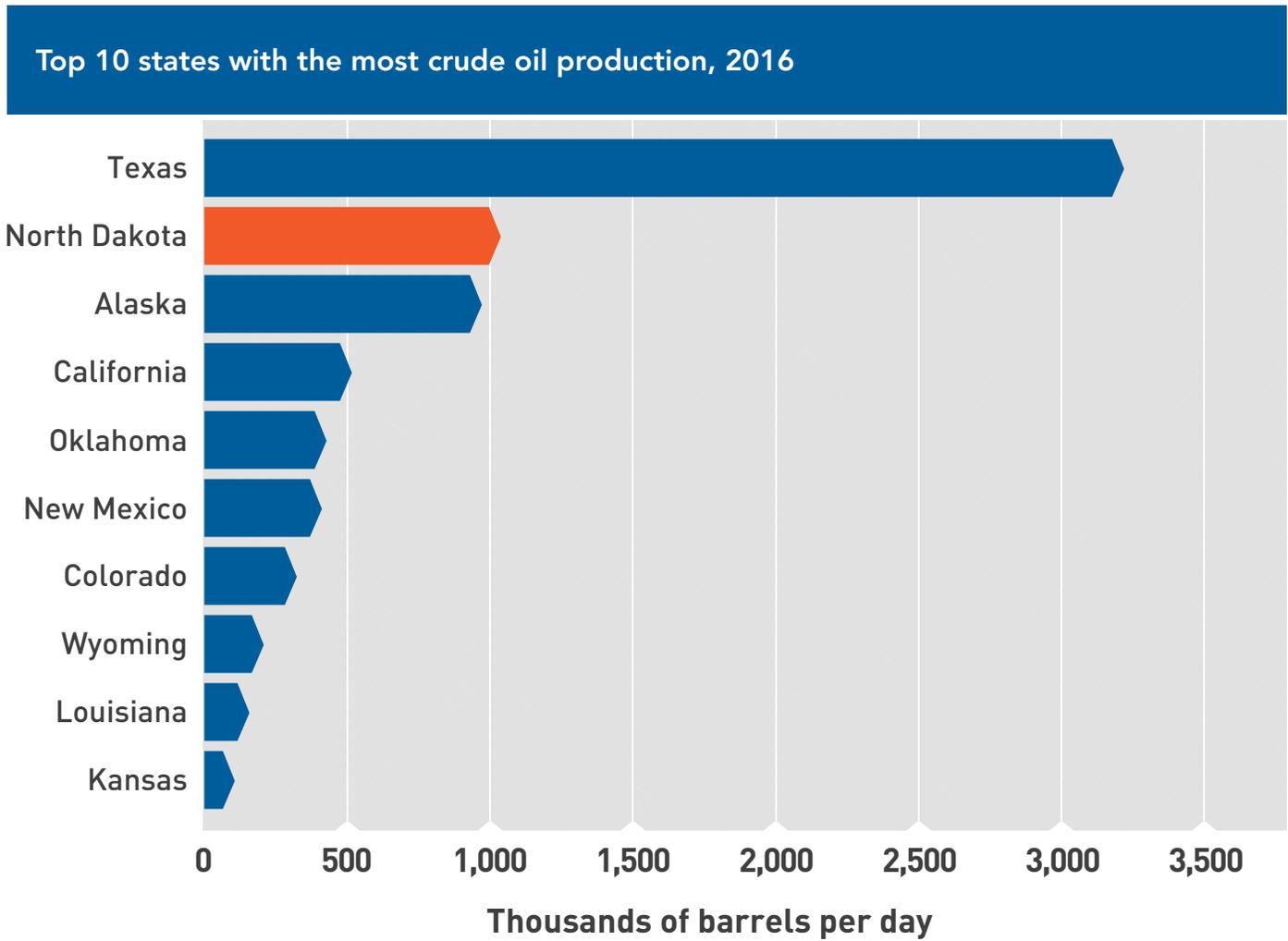
Source: National Energy Board, Marketable Natural Gas Production in Canada, September 25, 2017.

Figure A-6



Source: U.S. Energy Information Administration, Rankings: Natural Gas Marketed Production, 2015.

Figure A-7



Source: U.S. Energy Information Administration, Petroleum & Other Liquids, Crude Oil Production, September 13, 2017.

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