

How Oil-Exporting Countries Navigate Low Price Environments

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Introduction

Since the summer of 2014, the global oil industry has been grappling with a prolonged period of low oil prices. Following a period of high prices, oil prices have fallen dramatically as a result of surplus supply and waning demand. With falling investment and uncertain demand growth, the current outlook is difficult for oil producers. This has triggered a greater sense of urgency in oil producing countries to reduce the reliance on this resource. However, this is not the first time prices have fallen so dramatically. The oil gluts in the 1980s and the 1990s have significant similarities to the current weak market conditions especially from the third quarter of 2014 to the first quarter of 2016.

The purpose of this study is to explore the policy reactions taken in major oil producing countries during these historical oil price collapses to understand what actions can be taken to navigate the current period of low prices. In Section 1, the effects of low prices on fiscal balance, macro economy, and the oil industry will be explored. Section 2 provides background information on the 1980s, 1990s and 2010s price collapses in addition to discussing macroeconomic impacts on four major oil-exporting countries. These countries are Saudi Arabia, Russia, Canada and Nigeria. Although each country approached the price collapses differently due to their varying domestic conditions, there are five commonly adopted mitigation strategies. These strategies, which will be explored in Section 3, include economic diversification, deregulation and privatization, restoring fiscal balance, and vertical integration. We find the effectiveness of these strategies has yielded mixed results. As such, areas of improvements and recommendations will be detailed in the final section.

Section 1: Effects of Low Price Environments

1.1. Macro Economy

The GDP and government revenues in most Middle-East and Africa oil producing countries are strongly linked to oil prices. These countries have high elasticity of government revenues to oil prices, indicating high specialization and reliance on oil with low diversification for other sectors. As a result, these countries are exceptionally vulnerable to downturns in the oil market. Unless governments have large enough buffers to protect spending, sustained low price environments will trigger fiscal aggravation. These buffers include sovereign wealth funds and

foreign currency reserves. The size and management of these factors have a direct impact on the magnitude of fiscal adjustments that can be taken.

Countries with high dependence on oil revenues are unable to reduce production below specific levels in order to maintain their finances. Consequently, these countries usually cannot afford production cuts. Risk premiums for countries or companies reliant on oil revenues will also increase. This often forces oil-exporting countries to run fiscal deficits or adjust capital expenditure, though the effectiveness of these strategies are usually constrained by drained current accounts or currency depreciation. This is especially true because during periods of high oil prices, people expect higher government spending through public services or benefits to improve their well-being. The inevitable public backlash caused by spending cuts severely restricts the ability of governments to adjust capital expenditure. Unless spending cuts are enacted or new sources of revenue are quickly brought online, a loss in oil revenue means governments must struggle find alternative sources of financing.

Current accounts will fall or risk entering a deficit as the balance of trade and net income from abroad decreases. This makes it difficult for countries that have large debt-servicing obligations or extensive expenditure programs. In addition to possible policy delays and difficulties in achieving accurate external balances, deflationary measures commonly used during trade deficits can lead to unemployment. As is the case with oil consuming countries, low oil prices could trigger deflation in producing countries, potentially increasing the real debt burden while lowering consumer spending.

A decline in oil prices will surely result in a decline of GDP of oil-exporting countries. The European Commission confirms this in a 2006 study which concluded the impact of low prices on GDP is strongly correlated with export dependence. In particular, in Saudi Arabia where crude oil exports comprise 35% of GDP, a 60% fall in oil prices leads to a 14.3% decline in GDP.¹ In comparison, Mexican oil exports represent only 3.4% of GDP and a 60% decline in prices would result in a 3.9% drop in GDP. Blanchard and Gali (2007) examined the impacts of oil price collapses on GDP and concluded the effects have changed over time.² The degree to which GDP responds to price fluctuations has declined slightly since the 1980s, likely due to a decrease in real wage rigidities and changes in monetary policy. They estimate that in the 2000s, the relative contribution of oil price declines to fluctuations in GDP and GDP deflator inflation were approximately one-third and one-fourth. Similar conclusions were drawn on wage inflation and employment, both of which have also become less impacted by changes in oil price since the 1980s.

1.2. Oil Industry

Prolonged periods of low oil prices have the strongest impact on exploration and production firms with a high cost base. The upstream segment is the most affected and the dominant focus of upstream activity shifts away from exploration towards improving the efficiency of existing production. Most large oil companies are integrated companies which contain both upstream and downstream operations. These companies are also negatively affected by low prices, although to a lesser extent. Purely downstream companies are less impacted by low prices and may even benefit from it.

The EIA's annual report on 85 publicly traded upstream companies found capital expenditure and cash flow has significantly declined in recent years.³ The reasoning behind this is many International Oil Companies (IOCs) and independent companies engage in expensive unconventional oil production in North America, including shale oil and oil sands. Many of the most expensive and technically complex oil projects have been cancelled or postponed because of the low prices. The focus is instead on developing existing reserves that have high returns rather than exploring new fields. If the current underinvestment continues, these companies may face a reserve replacement challenge in the future. On the other hand, most National Oil Companies (NOCs) have lower production costs than those of IOCs and independents in, for instance, North America. Despite this, low oil prices will still have very significant impacts on heavily indebted state oil companies in countries such as Venezuela and Mexico. For cash-strapped NOCs, some capital investment plans may be delayed while aggressive oil production goals are reduced.

Even in countries that are not heavily dependent on oil rents, NOCs are major players in the local economy by acting as a source of government revenue and employment. As a result, struggling NOCs prioritize the interests of their home countries, often delaying international ventures while maintaining domestic operations. Layoffs are usually avoided to prevent causing further unemployment. NOCs will instead borrow money or focus on other methods of cost reduction to avoid disrupting the home economy. Nonetheless, there have been instances of layoffs occurring in NOCs although it is very uncommon. An estimated 25% workforce reduction by Abu Dhabi National Energy Company took place in 2014-2016. However, the majority of layoffs were on foreign staff and not locals.⁴

Section 2: Historical and Current Low Oil Price Cases

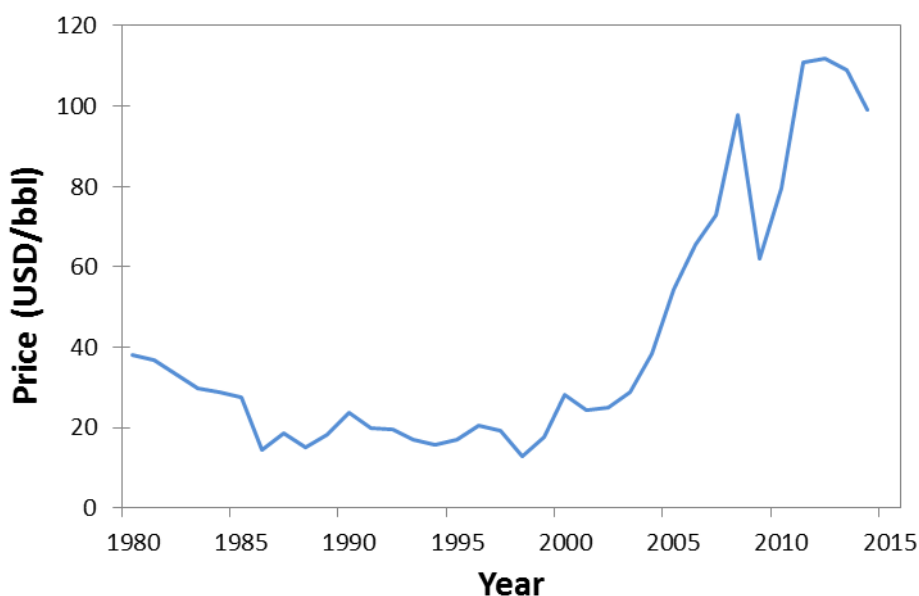
2.1. 1980s

The 1980s Oil Glut was characterized by surplus crude oil after a period of high oil prices in the 1970s and early 1980s. Oil prices peaked in 1979 before declining through the

1980s. There was a rapid supply growth from non-OPEC countries, including an additional 6 million barrels per day (mb/d) of supply from the North Sea and Gulf of Mexico.⁵ OPEC members reduced production in an attempt to maintain the high prices but were unsuccessful. The resulting decline continued for six years with the sharpest drop occurring between November 1985 and March 1986 when prices plunged by 67%.⁶

At this point, OPEC's market share had fallen dramatically and its members were greatly divided on what action to take. Saudi Arabia then abandoned its role as a swing producer and began to produce at full capacity in 1986. This forced prices down into a final slump and triggered a price war. The traditional 2-tiered price structure for official term contract pricing and spot prices were subsequently abandoned. Although netback pricing became the new dominant pricing method for a time, spot prices later became increasingly influential.

Figure 1: Crude Oil Prices (1980-1990)



Source: Economic Research, Federal Reserve Bank, St. Louis. 2016.

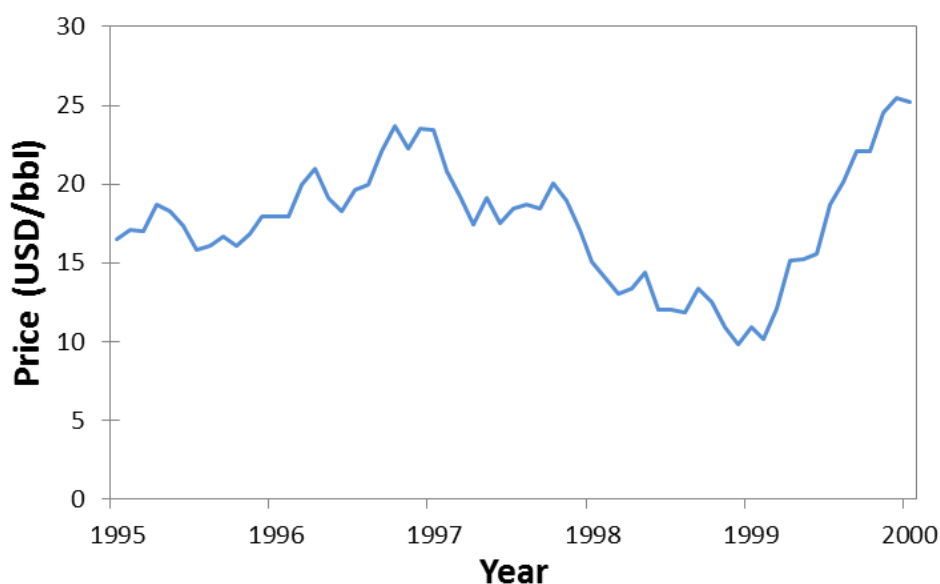
2.2. 1990s

The 1998 Oil Price Collapse came as a surprise to many during a time when most people expected significant oil demand growth. Similar to the previous oil glut, relatively strong prices in early 1997 prompted a spike in oil production and exploration. Market optimism prompted Venezuela to dramatically increase output in the same year. OPEC responded in kind by raising production quotas in late 1997 by 10% or 2.5 mb/d to 27.5mb/d effective January 1998 under the assumption oil demand would continue growing and to regain market share against non-OPEC producers.⁷ Furthermore, some OPEC members were already exceeding production quotas.⁸ However, this decision coincided with the onset of the Asian Economic

Crisis which drastically lowered oil demand, resulting in an oversupply of oil and weakened prices. The oil oversupply was further exasperated upon Iraq's return to the market in 1998 where they doubled output between January and August.

The combination of increased production and weak demand caused prices to fall 40% between October 1997 and March 1998. Mild winters in Europe, Japan and North America further drove down demand. Oil prices fell mainly because over-optimistic producers increased capacity without fully considering the potential for oversupplying the global market. A deal was eventually brokered between Saudi Arabia, Venezuela and Mexico for a production cut. OPEC subsequently reduced quotas three times by 1.25mb/d in April 1998, 1.335mb/d in July 1998 and finally 1.719mb/d in mid-1999.⁹

Figure 2: Crude Oil Prices (1995-2000)



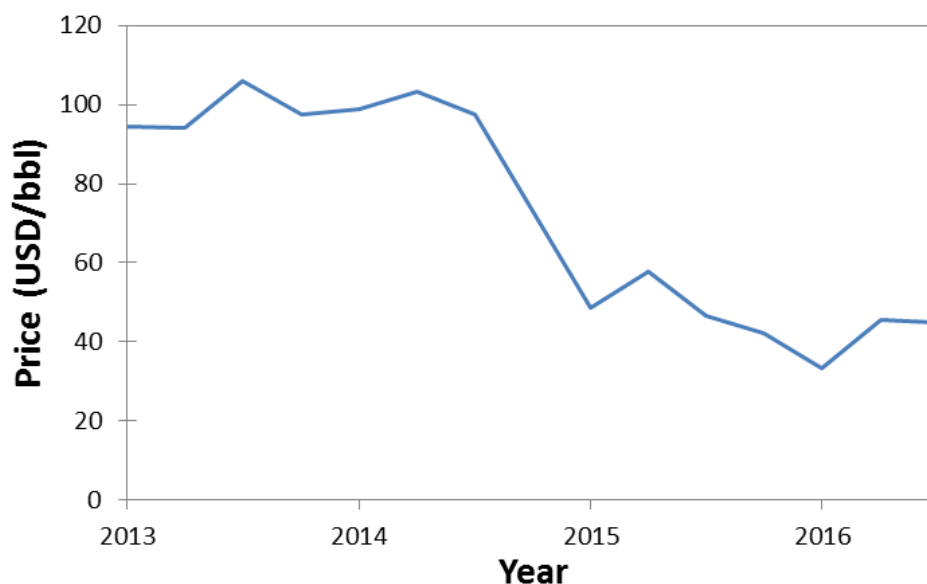
Source: Economic Research, Federal Reserve Bank, St. Louis. 2016.

2.3. 2010s

The ongoing oil glut began in 2014 with the monthly average price of Brent crude oil plummeting from \$112/bbl in June 2014 to just \$32/bbl in February 2016.¹⁰ This crude oversupply is driven mainly by growing US and Canadian unconventional oil production and weak demand. EIA data shows US production increased 58% from 2010 to 2015.¹¹ OPEC maintained output discipline until 2014 when Saudi Arabia advocated higher OPEC production to regain market share. This increase in supply combined with growing turmoil in the Chinese stock market to push oil prices down dramatically.

Compared to the previous two episodes of price declines, there are a number of similarities and differences that can be observed. The 1980s is most closely associated with the most recent price collapse. These supply-driven events were caused by a change in OPEC pricing policies followed by a period of rapid growth in production from non-OPEC countries. Both cases, along with that of the 1990s, led to OPEC negotiating output restrictions. However, the current glut differs from past episodes because there is less spare capacity. Spare capacity was at least 10mb/d in 1986 compared to 2mb/d in 2014. Additional supply from unconventional oil production today is significantly higher than the added capacity from the North Sea in the 1980s. Furthermore, the 1990s price collapse was mostly demand-driven.

Figure 3: Crude Oil Prices (2013-2016)

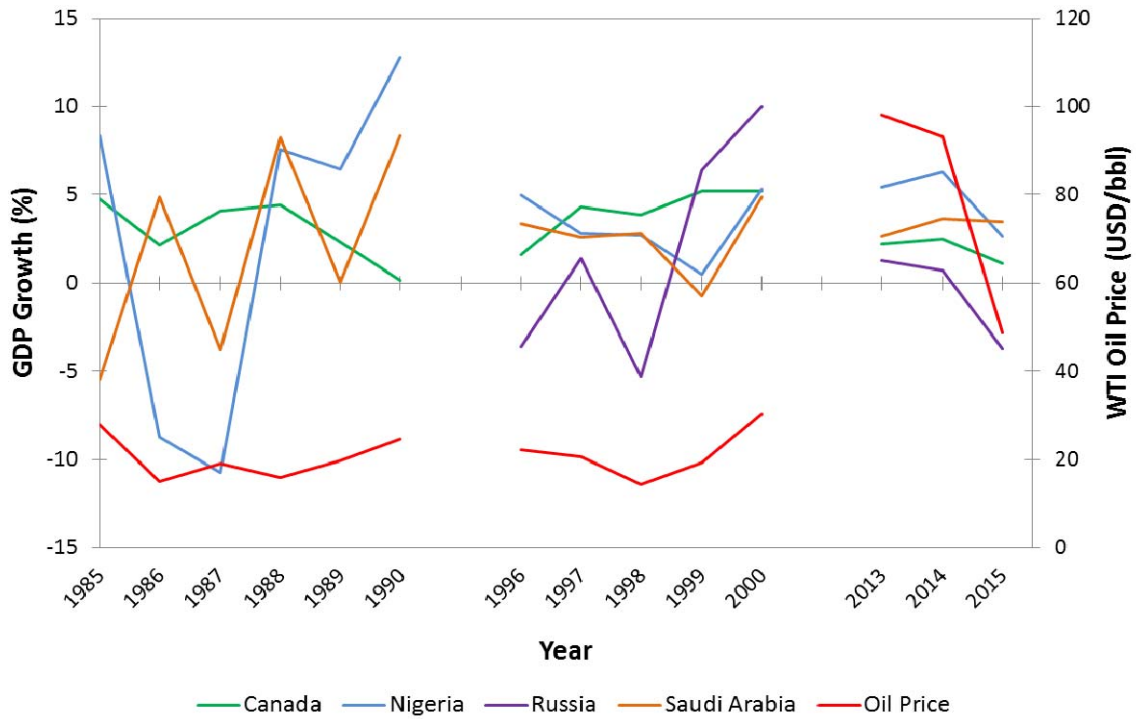


Source: Economic Research, Federal Reserve Bank, St. Louis. 2016

2.4. Impact of the Low Oil Price Cases on Major Oil-Exporting Countries

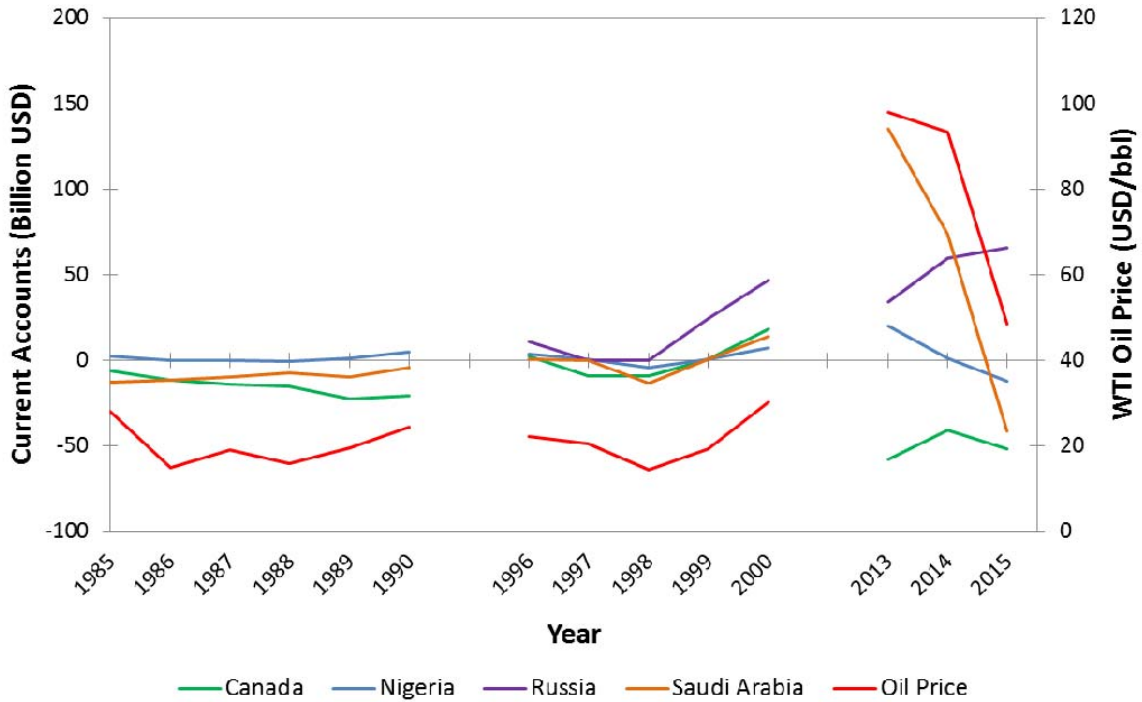
There is a clear negative impact on GDP growth, current accounts and national income of oil-exporting countries when oil prices are low. As shown in Figures 4, 5 and 6 below, the most significant decline took place around 1986, 1998 and 2015 during the sharpest price falls. Among the three oil price collapses, the 1980s had the most volatile effect on GDP growth. In almost every case, current accounts fall negative as countries struggle to balance budgets in spite of lower revenue. With the exception of Russia, gross national income has generally had an upward trend since 1983. This growth only slowed down during the 1980s and 1990s when oil prices fell but remained stable. It wasn't until 2014-2015 when gross national income fell in all observed countries.

Figure 4: GDP Growth of Select Oil Producing Countries during Low Oil Price Periods



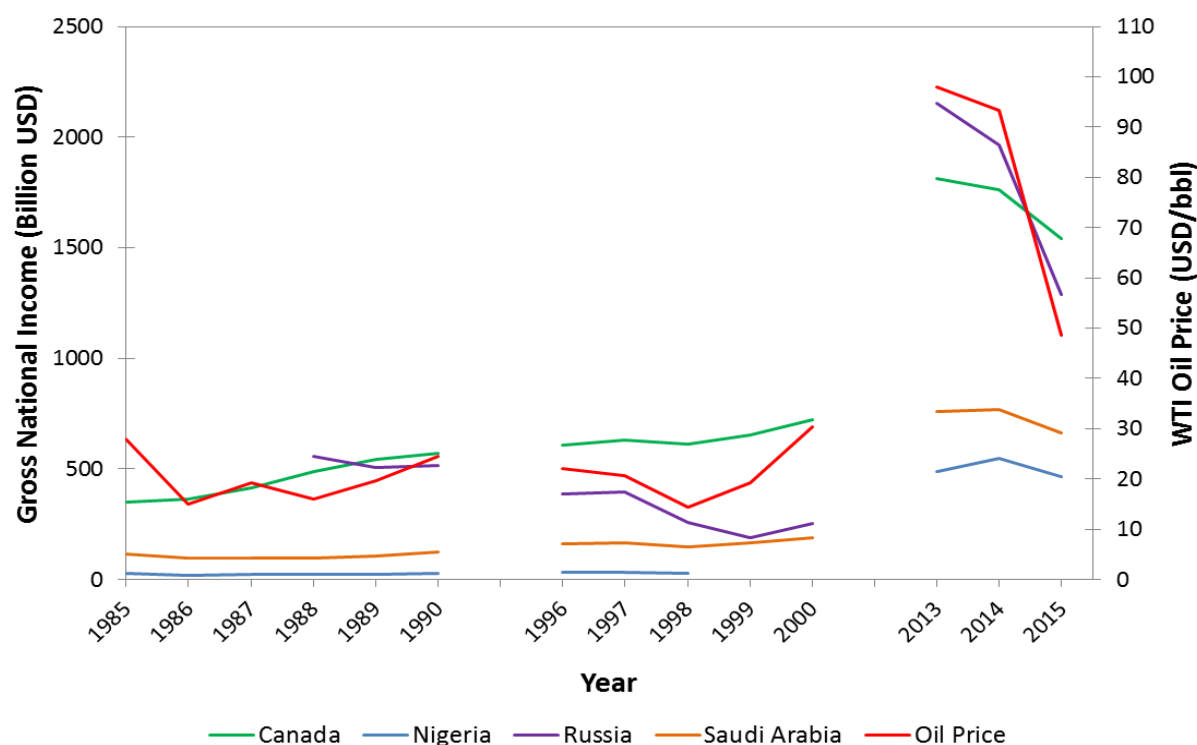
Source: World Economic Outlook Database, International Monetary Fund, April 2016 Edition. Economic Research, Federal Reserve Bank, St. Louis. 2016

Figure 5: Current Accounts of Select Oil Producing Countries during Low Oil Price Periods



Source: World Economic Outlook Database, International Monetary Fund, April 2016 Edition. Economic Research, Federal Reserve Bank, St. Louis. 2016

Figure 6: Gross National Income of Selected Oil Producing Countries During Low Oil Price Periods



Source: Federal Reserve Bank, St. Louis. 2016

Compared to other oil-exporting countries, Canada has historically had a more diversified economy due to the country's vast resources and separation of energy jurisdiction between federal and provincial powers. Because the provincial government owns rights to all ground resources, fluctuating oil prices have greater regional than national impacts. Energy producing provinces such as Alberta, Saskatchewan and Newfoundland were the most negatively impacted. All three of these provinces had major budgetary challenges and entered fiscal deficits when prices fell. On the other hand, provinces that engage in energy-intensive manufacturing were buoyed as costs of productions fall. The province of Ontario is the largest contributor to Canada's GDP and exports motor vehicles, mechanical equipment and machinery. Ontario experienced healthy economic performance during low oil prices, as did some other non-oil producing provinces like Quebec. This diversification allows federal government revenues to remain relatively stable.

There has always been an abundance of ethnic, environmental and economic tensions surrounding Nigerian oil development. The oil boom of the 1970s led Nigeria to neglect its strong agricultural and light manufacturing base in favor of crude oil. Nigeria's strong dependence on petroleum, combined with falling oil prices, contributed to GDP falling from

US\$64.2 billion in 1980 to US\$20.7 billion in 1986. Oil revenues fell 48% from 1979 to 1982.¹² Nigeria was classified by the World Bank as a low income country for the first time in 1989. The continued reliance on oil revenues through the next decades led to another sharp GDP decline of US\$116.2 billion in 1998-1999 and US\$83.8 billion in 2014-2015.

Data for the Soviet Union during the 1980s could not be obtained, but statistical findings by Khanin (1981) and the CIA both argue that national income and economic growth declined during this time.¹³ It is estimated that current accounts fell into a deficit in 1986, reaching its lowest in 1989 at US\$4.5 billion.¹⁴ The government's heavy borrowing allowed current accounts to recover into a surplus in 1987, though gross and apparent debt rose during this time, totaling US\$46.3 billion in 1989.

Some critics attribute the fall of the Soviet Union to the 1980s oil price collapse because of the severe economic and political importance of oil at the time. Oil was the main economic driver, making up 60% of the Soviet Union's exports and over 30% of government revenues in the 1980s.¹⁵ Without enough revenues to eliminate barter trade and uphold the military-industrial complex in Socialist bloc countries, the Soviet Union had to borrow money to prevent a famine in 1985-1988. By 1989, they were forced to borrow from Western countries. Not only did this cause public backlash, there was still not enough money to fend off a food shortage. Depleted reserves drove the Soviet Union to cut exports to satellite states, leading to growing turmoil and protests. Loans from Western countries came with rigid conditions which prevented them from using the force necessary to reestablish control in these states. Without enough revenue, military strength or public support, the Soviet Union eventually came to an end in 1991. Financial problems continued in the 1990s as continued reliance on oil forced Russia to default on some of its debt in 1998, leading to a sharp depreciation of the ruble and decline in GDP.

The 1980s had a profoundly negative effect on Saudi Arabia. In the first half of the 1980s, Saudi Arabia attempted to use its market power to stop the price decline by reducing output from over 10mb/d in 1980 to less than 2.5mb/d in 1985.¹⁶ Falling revenues prompted them to abandon this strategy and flooded the market with oil in 1986. They became the first to implement netback pricing and this first-mover advantage gave Saudi Arabia a temporary competitive edge in the market, allowing GDP to recover that year. Saudi Arabia has the most volatile current accounts balance among the observed countries. Despite having the largest current account balance at US\$41.503 billion in 1980, Saudi Arabia entered a deficit in 1983 after a US\$59.904 billion loss. This occurred again in 2015 after a US\$206.243 billion decline from 2012. This is likely because the Saudi population relies heavily on the government for

employment and welfare services, making it difficult for the government to reduce spending despite declining revenues.

Section 3: Oil Producers' Countermeasures to Low Oil Prices and Their Effectiveness

3.1. Oil Producers' Reactions to Low Oil Prices

3.1.1. Economic Diversification:

It is no surprise that one of the first reactions of oil producing countries during weak oil prices is to pursue economic diversification away from oil. For example, when the Babangida administration came to power in 1985, Nigeria introduced a new industrial strategy called the Structural Adjustment Program (SAP). Under the SAP, one of the primary objectives was to build a diversified manufacturing and agricultural system while increasing exports. Fiscal and credit incentives were provided to encourage firms to export in the hopes of growing foreign currency reserves. Cash crops such as cocoa became popular export commodities. Today, the Nigerian Export Promotion Council (NEPC) continues to promote economic diversification and recently set a targeted growth of 20% in non-oil exports by 2019 from the current 5% and US\$30 billion in non-oil exports by 2025.¹⁷

Saudi Arabia recognized the need to diversify its economy in 1958 after a recommendation by the International Monetary Fund (IMF). It wasn't until 1965 when the Central Planning Organization, later renamed the Ministry of Finance, was created to oversee this initiative. What followed was a series of Five Year Development Plans, the first of which took place in 1970.¹⁸ Although the allocated budget varied with each plan, there were two main areas of focus. The first was infrastructure developments aimed at improving overall trade opportunities. This included the expansion of transportation, road and port infrastructure. The second area of focus was welfare and human resource development, leading to the introduction of free education, healthcare and interest-free loans. During the 1990s, there was a shift towards the development of industry, defense and agriculture. The ambitious Vision 2030 plan was announced in 2016 which continues the kingdom's diversification goals. It aims to increase non-oil exports from 16% of GDP in 2016 to 50% by 2030.¹⁹ The government also aims to bolster the contribution of the private sector to GDP from 40% to 65% by 2030.

3.1.2. Deregulation and Privatization:

Deregulation and privatization were already common objectives in many countries particularly from the 1980s onward. Nevertheless, stagnating economic performance in oil producing countries often popularized the rationale that reduced regulations and government control encourage competition, productivity and lower prices for consumers. The sale of

state-owned enterprises also brings in proceeds that can be used for short-term budget balancing or to pay down debt. This way of thinking, combined with low oil prices, further pushed oil-exporting countries to adopt these reforms.

The size of the public sector in Canada has always been relatively moderate in comparison to other countries so privatization has been less rapid and extensive. Depending on the fiscal situation, the federal and provincial governments implemented privatization initiatives at different times. Notable sales of government oil corporations include Petro-Canada, Syncrude Canada and Alberta Energy Company. These sales brought in a total of C\$2.8 billion.²⁰ The controversial National Energy Policy (NEP) policy was removed after the 1984 federal election. Under the NEP, the federal government had tight control on the oil industry and petroleum products. In June 1985, Canada deregulated oil prices after almost 12 years of administered pricing.²¹ The new administration heavily favored pro-market policies. Stronger trade relations with the US were prioritized which eventually led to the Canada-United States Free Trade Agreement in 1989. They also deregulated natural gas pricing under a federal-provincial agreement.

As a part of Nigeria's SAP strategy, there was a focus on reducing government ownership and eliminate price distortions.²² Guided by the IMF and World Bank, the SAP intended for the government to adopt a supportive role rather than controlling industry and trade. The public sector accounted for over 50% of GDP and 60% of employment leading up to 1986.²³ In particular, the SAP focused on reducing ownership in the non-oil sectors such as agriculture and manufacturing. The Privatization and Commercialization Decree was subsequently introduced in 1988 where 95.3 million shares in various centrally-owned companies were put up for sale.²⁴ A second privatization phase ran from 1999-2005, targeting over 32 enterprises and a third phase took place in 2005-2009. As a part of the IMF-World Bank requirements, subsidies on petroleum products were reduced in 1986, 1988, 1989 and 1990. Restrictions on imported goods and price controls were also eliminated.

Saudi Arabia's fourth Five Year Development Plan covering 1985-1990 encouraged greater privatization, foreign investment and joint ventures. The then-Crown Prince Abdullah stated in a 1998 cabinet meeting that 'the time of abundance is over... we should all get used to a lifestyle that is not totally dependent on the state'.²⁵ Saudi Arabia's privatization strategy is not just limited to asset divestiture, but also includes the transfer of management, financing or contracting operations to the private sector. The government targeted a 70-90% private ownership in joint ventures by 1990.²⁶ Under the current initiative, Saudi Vision 2030, the initial public offering (IPO) of Saudi Aramco was announced which is scheduled to take place in 2018.

In the 1990s, Russia rapidly began privatizing most of its natural resource production. A presidential decree in 1992 allowed the privatization of the oil sector although it took several years for some companies to become privatized. This was implemented in three stages: Mass Privatization in 1992-1994, Cash Privatization in 1994-1997 and Case-By-Case Privatization in 1997-2003.²⁷ In the oil and gas industry, with the exception of Rosneft and Gazprom, most companies such as Lukoil and TNK were privatized under this 11 year-long extensive strategy.²⁸

3.1.3. Restoring Fiscal Balance

(1) Increased Foreign Borrowing

When a country runs into a large fiscal deficit, it cannot help sourcing its financial resources externally, often through international financial institutions like the IMF and World Bank. This is often the case with major oil producers under a weak oil market, although it is difficult to judge whether foreign borrowing is a direct result of low oil prices or from other factors.

From 1985-1986, the World Bank and several European banks granted loans to Nigeria. The World Bank granted a package of US\$1.02 billion in quickly disbursed loans and \$4.28 billion in three-year project loans.²⁹ Nigeria adopted an external debt management strategy under the SAP to refinance, reschedule and take new loan facility agreements.³⁰ Several debt rescheduling agreements were signed with creditors including the London Club and the World Bank in 1986-1987. Unable to meet payment terms, a further rescheduling agreement was signed in 1989. Debt rescheduling was also used during the 1990s and 2010s oil price collapses.

While the Soviet Union's large oil reserves allowed them to stay afloat during the initial price declines during the 1980s, the economy grew unsustainable by 1985. This was mostly because the oil industry was overly subsidized, controlled and inefficient. A severe food shortage led the Soviet Union to borrow money abroad while its international credit rating was still strong in 1985-1988. This money was used for imports and debt repayments. As debt continued to mount and the economy worsened, the Soviet Union was then forced to bargain for money with Western countries in exchange for political concessions. Most concessions were for political-military restraint by the Soviet Union, such as prohibiting the mobilization of troops against rebellions in Eastern Europe.³¹ After the fall of Soviet Union, poor economic performance continued for Russia and other Commonwealth of Independent States (CIS) countries, which eventually led to a default in 1998 and US\$22.6 billion financial package from the IMF and World Bank.

Saudi Arabia has been facing severe financial pressure since 2015-2016 when fiscal balances fell into a -21.6% and -19.4% deficit. Despite having a generous US\$654.5 billion in foreign reserves, the Saudi Arabian Monetary Agency has withdrawn US\$70 billion in funds from overseas financial institutions. They also borrowed \$10 billion from international banks in April 2016, their first foreign borrowing in over a decade.³² This growing debt prompted the government to announce a US\$17.5 billion sovereign bond sale in October 2016, marking the country's first entry into the international bond market. Officials emphasize that this move not only helps close the deficit gap but is also a part of the Vision 2030 strategy to increase access to foreign financing and investment. The next stage of Saudi Arabia's reform plan includes the public offer of shares in the state-owned Saudi Aramco and its subsidiaries in 2018.

(2) Adjusting Government Expenditure and Running a Fiscal Deficit

At the federal level in Canada, total expenditure was held at C\$86.6 billion in 1986 to avoid increasing the budget deficit.³³ Expenditure cuts focused on subsidy elimination, transportation and the operating costs of government departments. This was the first absolute decline in total spending in over 20 years. The government removed or reduced various investment tax credits and corporate taxes, although other taxes were increased on personal income, alcohol, tobacco and the federal sales tax. The Alberta provincial budget had to undergo more significant adjustments. They diverted investment earned by the Heritage Savings Trust Fund (HSTF) into general spending in order to run a fiscal deficit. Established in 1976, the HSTF initially received 30% of Alberta's oil royalties but these deposits were discontinued in 1987.³⁴ This fiscal strategy was a highly contentious issue throughout the next decade and Alberta remained in a budget deficit for 9 years until 1995.³⁵

Saudi Arabia's Five Year Development Plans were costly initiatives that required heavy government spending. This posed a significant problem for the third and fourth plan covering 1981-1985 and 1986-1990. Although government revenues were falling, Saudi Arabia continued to allocate a generous budget for infrastructure and industrial projects with few decreases in overall expenditure. Although this spurred an average of 6.5% per annum of growth in the non-oil sector, this was actually below what they initially targeted.³⁶ The Saudi Arabian government continued to spend heavily throughout the 1980s despite a US\$10 billion budget deficit in 1987. It wasn't until the fifth and sixth plan which took place in 1990-1995 and 1995-2000 when capital expenditure finally fell.

3.1.4. Vertical Integration

As far as the oil industry is concerned, many NOCs in producing countries began the acquisition of downstream assets for the sake of securing demand. The first major acquisition of refining and distribution facilities took place in 1983 when the Kuwait Petroleum Corporation

purchased multiple European downstream assets from Gulf Oil.³⁷ After this, other NOCs followed suit by engaging in vertical integration or joint ventures in various refining and distribution assets on an international scale. There is a noticeable spike in the quantity of mergers and acquisitions when oil prices are low.

Saudi Arabia, through Saudi Aramco, had two main objectives for vertical integration: to increase international refining and storage capacity. This was under the country's key strategy of achieving security of demand. By the early 1990s, Saudi Aramco had set a target of acquiring 3mb/d of overseas refining capacity.³⁸ Some of the more notable acquisitions include refineries in the United States (1988), Korea (1991), the Philippines (1994) and Greece (1995). These assets combined to give an estimated 1.4mb/d additional capacity.³⁹ Through the 1990s, other refineries were acquired in the Philippines, Sweden, Greece and China. Crude supply to these refineries in 1995 is estimated to have been at 75.6% of overall capacity. This allowed Saudi Aramco to become the most geographically diverse NOC at the time. They also entered a large joint venture with Shell in 1998 for US refineries, although this joint venture was broken up in 2016 as Saudi Aramco is now seeking greater direct control on its US assets.

Most Russian oil companies make partnerships with IOCs mainly to gain access their advanced technologies, financial resources and to develop new oilfields.⁴⁰ Domestic crude and fuel prices in Russia were very volatile leading up to the 1990s, prompting oil majors to pursue foreign acquisitions in countries where prices were more stable. Lukoil became the first Russian oil company to implement this strategy in 1998. Lukoil's size and financial strength gave them greater bargaining power over firms struggling with low oil prices. Controlling stakes of three refineries were acquired in Ukraine, Bulgaria and Romania during 1998-1999.⁴¹ Lukoil has since acquired an extensive downstream network of retail stations, storage facilities and refineries across the CIS region. This aggressive strategy allowed the company to gain an estimated US\$7-9 billion in foreign assets by 2006.⁴² Other Russian oil majors soon followed the same strategy in the 2000s, including Rosneft and Yukos Oil Company. In recent years, Russian oil companies are now targeting Europe and China markets. For instance, Rosneft purchased refining assets from Total and ChemChina Petrochemical Corporation in addition to entering partnerships with BP in 2015-2016.⁴³

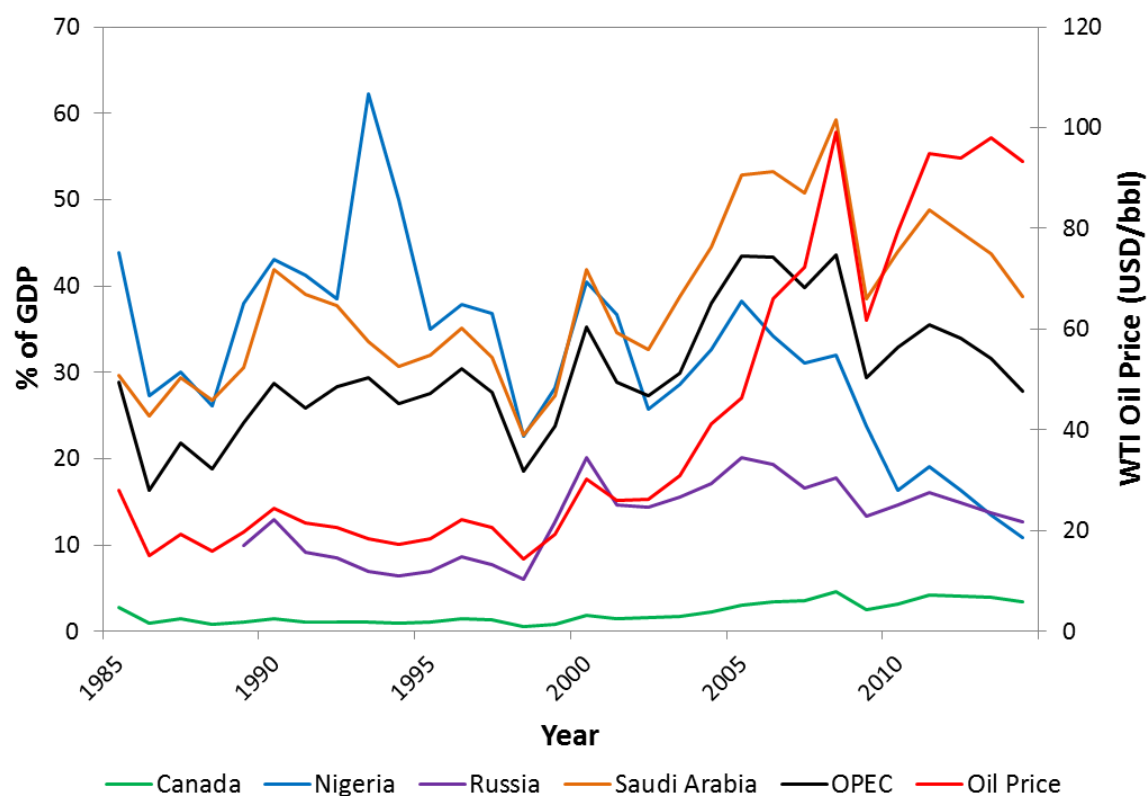
3.2. Effectiveness of the Countermeasures:

3.2.1. Economic Diversification:

Figure 7 depicts the oil rent percentages of GDP of major oil-exporting countries. Oil rents are defined revenue minus the production costs of oil. Overall, oil rents have not changed significantly in any of these countries and they remain highly vulnerable to changes in oil prices. Although Nigeria's oil rents appear to have declined since 2010, this was actually due to

disruptions caused by pipeline attacks, illegal bunkering and crude theft rather than successful economic diversification.⁴⁴ Countries with higher oil rents also tend to experience greater volatility compared to more diversified countries such as Canada. For example, Figure 7 shows during the 2008 Financial Crisis, oil rent as a percentage of GDP fell by 20.7% and 17.7% in Saudi Arabia and the UAE compared to only 2.0% in Canada.

Figure 7: Oil Rents (% of GDP)



Source: The World Bank, "Oil rents (% of GDP)", 2016

Nigeria's SAP was unable to achieve significant diversification through strengthening the agricultural sector. This was partly because farming costs rose too high when fertilizer and fuel oil subsidies were eliminated.⁴⁵ Fiscal and monetary changes under the SAP also led to excess liquidity and massive inflation. Cocoa prices skyrocketed in the 1980s, with prices rising to US\$6,045/ton in 1994 compared to an average of US\$792/ton prior to the introduction of SAP in July 1986.⁴⁶ While this incentivized more cocoa production in 1986-1990, most production proved to be unprofitable due to inflation. Local farmers were unable to meet the rising costs of labor, input and subsistence. While cocoa prices rose 969% in 1986-1992, the prices of chemical inputs went up 2323%.⁴⁷ The strong Naira made imports cheaper, further discouraging domestic agricultural production.

In Saudi Arabia, even though all ten Five Year Development Plans created since 1970

advocated for greater economic diversification, there has been little to no success in achieving significant change. As shown in Table 1 below, the oil sector still commands the majority of Saudi Arabia's GDP, revenue and export earnings. Al-Bassam (2015) argues this failure was due to a lack of a clear strategy to diversify and support non-oil sectors. This is further complicated by the country's low level of transparency in the oil industry and government.

Table 1: Saudi Arabia Economic Diversification

	Oil Sector (% GDP)	Oil Revenue (% Total Revenue)	Oil Exports (% Total Exports)
1970-1975	58.02	90.56	99.49
1976-1980	56.59	88.80	99.65
1981-1985	48.38	79.53	98.43
1986-1990	25.14	62.02	87.95
1991-1995	36.00	73.78	90.95
1996-2000	34.28	70.66	87.3
2001-2005	39.72	80.93	87.04
2006-2010	49.12	88.22	88.13
2011-2013	48.22	91.05	86.92

Source: Resources Policy. 'Economic Diversification in Saudi Arabia: Myth or Reality?'. 2015.; Saudi Arabian Monetary Agency. 'Annual Statistics' 2014.; Department of Statistics and Information, 'Annual Report'. 2014.

3.2.2. Deregulation and Privatization:

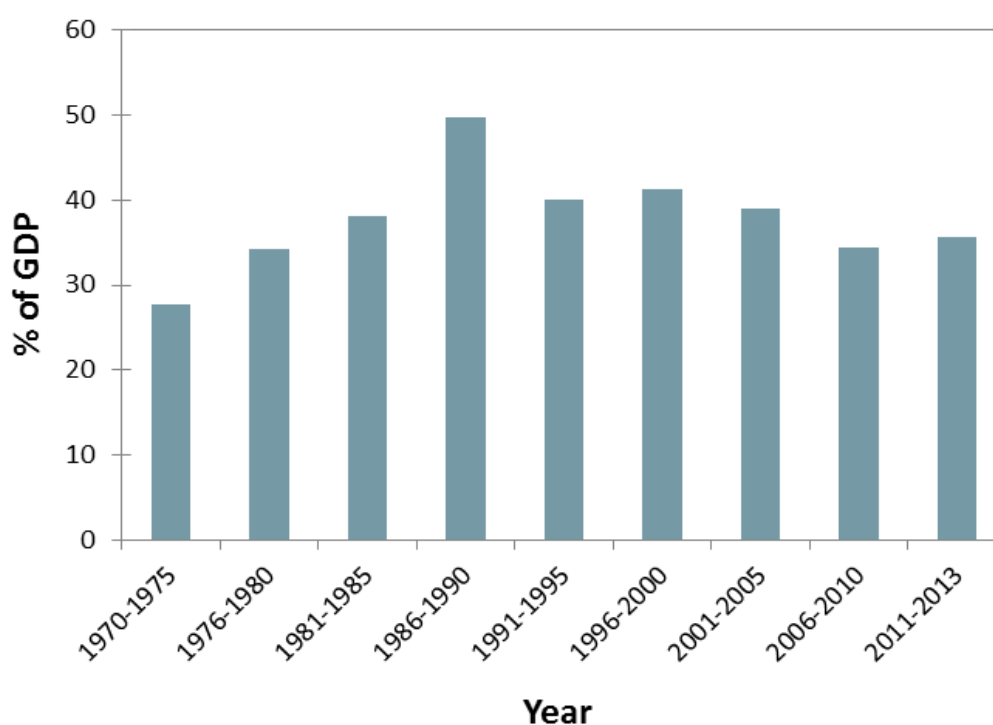
Canada already had a relatively privatized and deregulated market in the 1980s. The sale of public companies in the 1980s had the additional benefit of reducing the high federal deficit with some divestments even making a profit. For example, the privatization of Petro-Canada reduced the federal deficit by C\$154 million.⁴⁸ Boardman and Vining (1989) found that Canadian corporations saw significant increases in profitability, efficiency and dividend payouts following privatization.⁴⁹ Return on sales increased 7.7% three years after privatization. However, they also discovered that there were layoffs in Canada compared to other countries, with an average of 2,139 layoffs only three years after privatization.

Overall, the privatization movement yielded mixed results in Nigeria. The divestment of 34 Nigerian companies in 1988-1993 generated US\$191 million of revenue for the government and the World Bank found each company showed improvement after being privatized.⁵⁰ On the other hand, a study by Elias (2001) contradicted these findings, stating only 4 firms recorded increased output and 19 firms had increased earnings.⁵¹ Anwanyu (1992), Ojo and Fajemisin (2008) argue the Nigerian privatization movement and removal of subsidies led

to a number of unintended consequences because it failed to address several structural rigidities. There is a high level of poverty, social and political instability in the country, leading to very little public support for the government. The removal of subsidies worsened these existing problems by causing a massive spike in living costs.

Privatization and greater foreign investment have been identified as main policy objectives by the Saudi government since the fourth development plan in 1986-1990. The implementation of this strategy has been criticized as slow and inadequate. The private sector grew during this period but Figure 8 below shows the Saudi private sector has since lost its influence. A 2007 survey of public and private companies attribute this lack of progress to a number of factors. These include overlapping responsibilities, complicated approval processes, resistance to change and a lack of skilled human resources.⁵² These factors cast doubts over whether the Vision 2030 strategy will ultimately be successful.

Figure 8: Saudi Arabia Private Sector (% of GDP)



Source: Resources Policy. 'Economic Diversification in Saudi Arabia: Myth or Reality?'. 2015.; Saudi Arabian Monetary Agency. 'Annual Statistics' 2014.; Department of Statistics and Information, 'Annual Report'. 2014.

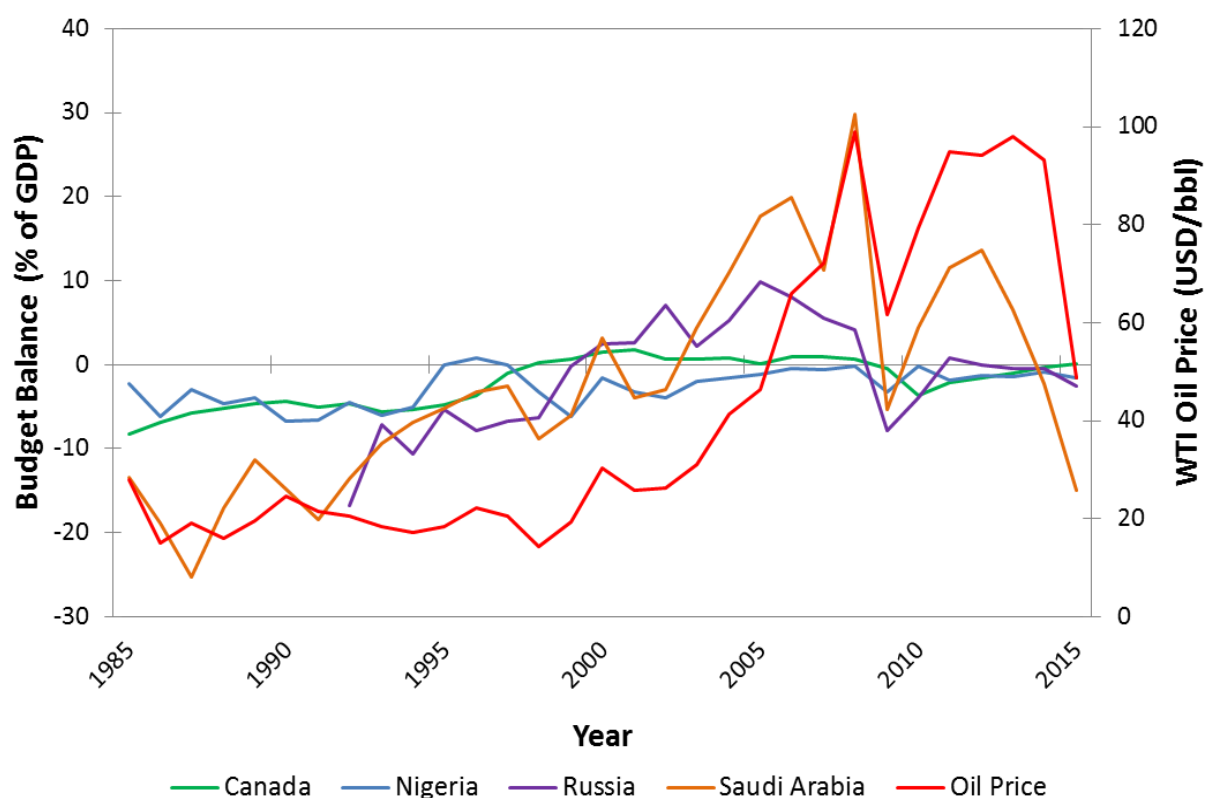
Puffer (2000) criticized the privatization process in Russia, arguing although ownership shifted to private hands, firms continued to operate like state-owned enterprises.⁵³ The loan-for-shares scheme introduced in the Cash Privatization Stage in 1994-1997 was highly controversial. Ownership of many key enterprises were simply turned over to the banks once the

loans matured in 2000.⁵⁴ Of the revenues earned from this scheme, it was discovered that little was reinvested into the economy. The World Bank estimates US\$88.7 billion fled Russia from 1993-1996, while a later study rose this figure to US\$140 billion in 1992-1997.⁵⁵ Overall, apart from contributing to some short-lived financial relief, it is not clear how privatization of Russian enterprises contributed to deal with low oil prices in the late 1990s.

3.2.3. Restoring Fiscal Balance

Figure 9 suggests efforts to improve fiscal balance have had mixed results. Russia and Saudi Arabia have both experienced large budget fluctuations, indicating the debt management strategies of these countries have not been effective. In particular, Saudi Arabia's budget balance over time almost mirrors that of oil prices and appears to have actually increased in volatility. This suggests the Saudi government needs to exercise greater fiscal discipline to avoid overspending when oil prices are high. On the other hand, budget balances for Nigeria and Canada not only have become less volatile since the 1980s but also remain relatively stable despite changes in oil prices.

Figure 9: Budget Balance (% of GDP)



Source: Department of Finance Canada, Saudi Arabian Monetary Agency, Ministry of Finance of the Russian Federation, Central Bank of Nigeria. Accessed 2016.

The creation of the debt management strategy in Nigeria under the Babangida government yielded both positive and negative results. The Debt Conversion program was successful although it was limited by severe inflationary pressures. Its most beneficial outcome was the reduction of overall debt while promoting equity investment.⁵⁶ In 1988-1991, a total debt of US\$574.6 million was successfully converted and eliminated from the debt stock.⁵⁷ The Debt Conversion program generated an estimated US\$204 billion of investment into manufacturing and agriculture. However, debt rescheduling can only grant temporary relief by giving time to renegotiate creditors as it neither reduces debt nor achieves new money flows.

The main problem with foreign borrowing in the Soviet Union was that the funds and the resulting debt were poorly managed. Extensive borrowing is only effective if the funds are invested into projects that can yield proceeds for loan repayments. Gaidar (2007) criticizes the lack of debt management, arguing the government was “effectively disregarding the problem in hopes that it would somehow wither away”.⁵⁸ Borrowed funds were mostly used on other debt repayments or the inefficient import and distribution of supplies. The distribution of food, equipment and other supplies were hampered by the lack infrastructure and organization, driving most goods into the black market.⁵⁹ Without any way of raising enough revenue as oil prices remained low, debt simply continued to mount. The World Bank estimates the gross hard currency debt more than doubled from US\$38.3 billion at the end of 1987 to US\$81.5 billion in mid-1993.⁶⁰

Saudi Arabia’s 2016 bond issue was successful in lowering the deficit gap, giving some temporary financial relief while also opening the domestic market to greater foreign investment. Pricing terms for this bond issue exceeded initial expectations, enabling the country to borrow more than initially anticipated as investor orders reached US\$67 billion from almost 1700 orders.⁶¹ This casts a positive outlook for Saudi Arabia in the short term as interest continues to mount on the partial listing of Saudi Aramco and its subsidiaries in 2018. These sales allow for more breathing room on the budget which the Saudi government aims to rebalance by 2020.

Although the Saudi government remains optimistic about this ambitious rebalancing target, many critics remain skeptical. They are quick to point out the Saudi economy failed to reach the targeted level of growth despite running a fiscal deficit in the 1980s. Ghali (1997) analyzed the effect of government spending on economic growth in Saudi Arabia and found no consistent evidence that changes in government spending had an impact on real GDP per capita growth.⁶² In fact, he concluded the flow of causality was in the opposite direction. Although running a fiscal deficit had negative impacts on GDP, government revenues and current

accounts, it was an unavoidable response to the low oil prices. Saudi Arabia is a welfare state that prioritizes the funding of public services, making it difficult to reduce spending.

This is the same in Canada and the province of Alberta where this lack of flexibility make budget deficits an inevitable result of any oil price collapse. In particular, the use of the HSTF since the 1980s has been a controversial issue. After being drained by the Alberta government in the 1980s, mandatory oil royalty deposits were discontinued which left the fund's value far below its potential. A 2008 review of the fund criticized the management of the HSTF, arguing there was no clear outline of when or where the fund should be utilized.⁶³ This lack of direction has significantly limited the effectiveness of the fund and the HSTF could not be relied on during following oil prices.

3.2.4. Vertical Integration

Saudi Aramco's aggressive vertical integration strategy and asset acquisition was beneficial in securing greater international market share and security of demand. Al-Moneef (1998) praises the success of this strategy, arguing it helped guarantee an outlet for their less attractive heavy crude while reducing storage and other transactional costs.⁶⁴ In 1998, Saudi Aramco had the most geographically diverse downstream sector compared to other NOCs. Export shares in the US, Western Europe and the Asia Pacific grew to 25%, 28% and 47% respectively.⁶⁵ Saudi Aramco's share in equity refining in these countries, estimated at 0.61mb/d, were 51%, 8% and 41%. By the 1990s, Saudi Aramco had successfully secured a commercial customer list of over 60 international firms.⁶⁶

Although Russian foreign investments were marginal compared to other countries in the 1990s-2000s, the aggressive pursuit of vertical integration was pivotal in Russia's economic revival in the 2000s. In particular, Lukoil's early venture into acquiring assets abroad allowed the company to obtain assets at discounted prices. Most acquisitions by Russian companies targeted the Eastern European and CIS region where there were few to no other alternative energy sources. This strategy ensured there was a steady source of demand for Russian oil exports over the next several years.⁶⁷ Even today, Russia remains the primary source of energy imports for many countries in the region while also controlling large shares of their retail networks. For example, Lukoil, TNK-BP and Tatneft controlled over 80% of Ukraine's petroleum market in 2005.⁶⁸

Section 4: Lessons and Recommendations from the Past and Current Low Oil Prices

4.1. Greater Emphasis on Diversification:

The consensus on literature examining the resource curse and low oil prices is that exporting countries must pursue greater export diversification. Unstable oil revenues have a massive impact on overall economic performance and growth, primarily through government spending, fiscal position and employment. The IMF acknowledges that diversifying away from oil is immensely difficult but successful implementation depends on the creation of appropriate policies ahead of oil declines.⁶⁹ Bonaglia and Fukasaku (2003) go further to argue resource-rich, low-income countries should diversify into resource-based manufacturing or processing of primary commodities instead of following the conventional path of low-skill manufacturing.⁷⁰

With each oil price collapse, oil-producing countries often experience an urgent need to diversify exports and industries. However, this sense of urgency quickly fades when prices recover and diversification becomes less of a priority. Oil is a non-renewable resource and while some countries have considerable reserves, these resources will eventually be depleted. In order to sustain future growth, non-oil sectors must be nurtured to provide alternative sources of revenue and employment. The oil sector is not a sustainable source of employment for any country, especially those in which it comprises a significant share of employment. Employment directly and indirectly linked to the oil sector affects household's wealth which in turn, lowers consumption per capita.

4.2. Timely and Effective Policy Responses

The social, financial and macroeconomic situation of each country varies widely, suggesting there is no blanket solution that can be applied to fully protect countries against oil price drops. The case of Nigeria and the SAP is a strong reminder for this. Policies should be tailored to each country's specific circumstance in regards to their financial, social and fiscal capacity. Fiscal adjustments are a necessary countermeasure during low price environments and must take into account the size of buffers and oil reserves.

Efforts towards policy or fiscal reforms are often undermined during periods of strong oil prices. Oftentimes, it may lead to overly optimistic views that prices will continue to remain high, prompting governments to overspend. Saudi Arabia's massive fluctuations in budget balances went from 13.6% of GDP in 2012 to a deficit of -15% in 2015. This serves as a stark reminder of the dangers of overspending and the difficulty in cutting back expenditure when oil revenues fall. The poor budgeting choices of the Alberta provincial government through the late 1980s and early 1990s is another example of the detrimental effects of this outlook. Critics of

Alberta's spending policy argue they should have responded much sooner. Despite prices continuing to slide, the government was reluctant to cut expenditures or raise taxes. As a result, despite entering the decade with strong balance sheets, Alberta remained in a budget deficit for 9 years.

4.3. The Creation and Maintenance of a Stabilization Fund

A stabilization fund helps to insulate an economy from volatility stemming from fluctuating commodity prices. An annual report by the IMF urged resource-rich regions to "better manage boom-and-bust commodity cycles by stashing away more tax revenue in 'stabilization funds' during good times".⁷¹ A further study in 2014 found that expenditure volatility is 13% lower than in countries without them.⁷² Stabilization funds can also help avoid the 'voracity effect' in which mass influxes to government revenues causes a more-than-proportional increase in discretionary spending.⁷³ This was witnessed in Alberta and Saudi Arabia, both of which spent heavily in the 1970s and early 2010s during high prices. Stabilization funds in Kuwait, Norway and Alaska have helped defuse these spending pressures while also controlling inflation and currency appreciation during rising oil revenues. However, the IMF emphasizes the importance for these funds to have clear structural policy conditions while being implemented with strong fiscal discipline. The IMF found that stabilization funds in Alberta, Venezuela and Oman have been less successful due to inconsistent management, overspending and deviations from its intended purposes.

4.4. Greater Market Transparency, Cooperation and Communication

In order to reduce the likelihood or intensity of future oil price crashes, exporting countries need to have a stronger grasp of market dynamics. However, some countries believe withholding or skewing information on production, investments or stocks improves their competitiveness. This distorts market fundamentals and sentiment, threatening the balance of supply and demand. For example, many OPEC members anticipated adjustments in quotas in 1997 after hearing UN sanctions on Iraq were removed. Many immediately increased or overstated production to ensure new quotas would be set higher once negotiations took place. This sends inaccurate over-supply signals which further weaken oil prices and limits the effectiveness of any production cuts. Oil-exporters must also be careful with large investments during periods of high oil prices. New capacity is best when the additional capacity does not exceed demand. As a result, countries must remain aware of investment decisions and existing idle capacity of other countries. A blind investment race could potentially lead to a price war similar to that of 1986.⁷⁴

During oil prices crashes, the question of which country should or is expected to join on a cooperative production cut becomes a hot issue of contention. In general, this debate falls

into an argument between non-OPEC and OPEC producers, both of which are unwilling to lower output. Even within OPEC, they look at Saudi Arabia or other Gulf countries to initiate or bear the burden of a production cut.⁷⁵ However, it is important for today's producers to recognize that non-OPEC market influence has grown significantly over the past decade. As a result, these countries must also express willingness for cooperative policies rather than waiting idly for an OPEC decision. The Riyadh meeting in 1998 was pivotal in preventing a further decline in oil prices. This is one of the most significant features of the 1998 Oil Price Crisis in which a number of non-OPEC countries approached Saudi Arabia, expressing their concerns and demonstrating a willingness to help develop a solution. Norway, Venezuela, Mexico and Algeria are among the countries that took action.

Conclusion:

Prolonged periods of low oil prices are challenging for oil-exporting countries to navigate. The attempts to diversify, liberalize and boost non-oil sectors explored in this study have all yielded mixed results. This varying degree of success is primarily due to the difficulty, time and risk involved in coordinating such large-scale economic transitions. The most troubling reason is several oil-exporting countries fall into the trap of forgetting any urgency for diversification, spending and other policy changes once oil prices recover. This is concerning as the cyclical nature of the oil market suggests similar oil gluts will likely occur again in the future.

By examining the strategies adopted during these past oil gluts, the lessons that can be learned are vital in ensuring oil producers can better mitigate future price collapses. Declines in public spending, current account balances and international reserves have long lasting impacts that may not be immediately remedied when prices recover. For these countries to insulate themselves from oil price volatility, it is crucial they commit to developing long term fiscal and regulatory frameworks to create a foundation for economic growth. These reforms must also take into account each country's specific circumstances and capacities. Diversity in economic structures, size and fiscal health warrant tailored responses. Without providing enough supporting incentives or a clear strategy to promote diversification, these countries will remain vulnerable to future oil market volatility.

References

- ¹ Kitous, Alban. Saveyn, Bert. Keramidas, Kimon. Vandyck, Toon. Los Santo, Luis Rey, Wojtowicz, Krzysztof. 'Impact of Low Oil Prices'. European Commission. (2016).
- ² Gali, Jordan. Gertler, Mark J. 'The Macroeconomic Effects of Oil Price Shocks: Why are the 2000s so different from the 1970s?'. International Dimensions of Monetary Policy. (2010).
- ³ 'Financial Review of the Global Oil and Natural Gas Industry 2015'. US Energy Information Administration. (2016).
- ⁴ Grunfield, David. 'Why Middle East companies should avoid job cuts in these times of low oil prices'. The National UAE. (2016).
- ⁵ Baffes, John. Kose, M. Ayhan. Ohnsorge, Franziska. Stocker, Marc. 'The Great Plunge in Oil Prices: Causes, Consequences and Policy Responses'. World Bank Group. (2015).
- ⁶ Gold, Russell. 'Back to the Future? Oil Replays 1980s Bust'. The Wall Street Journal. (2015).
- ⁷ Williams, James L., 'Energy Economist: OPEC's Quandary', Energy Economist, (2007).
- ⁸ Mabro, Robert. 'The Oil Price Crisis of 1998'. Oxford Institute for Energy Studies. (1998).
- ⁹ Williams, L. James. 'Oil Price History and Analysis'. WTRG Economics. (2011).
- ¹⁰ Kitous, Alban. Saveyn, Bert. Keramidas, Kimon. Vandyck, Toon. Los Santo, Luis Rey, Wojtowicz, Krzysztof. 'Impact of Low Oil Prices'. European Commission. (2016).
- ¹¹ 'Petroleum & Other Liquids', US Energy Information Administration. (2016).
- ¹² Gali, Jordan. Gertler, Mark J. 'The Macroeconomic Effects of Oil Price Shocks: Why are the 2000s so different from the 1970s?'. International Dimensions of Monetary Policy. 2010.
- ¹³ Harrison, Mark. 'Soviet Economic Growth Since 1928: The Alternative Statistics of G.I. Khanin'. Europe-Asia Studies, Vol. 45, No 1. (1993).
- ¹⁴ Dyker, David. 'Restructuring the Soviet Economy'. 2002.
- ¹⁵ Erochkin, Pavel. 'Russia and its Oil: Friends or Foes'. Blueprint for Russia. 2005.
- ¹⁶ El Gamat, Rania. 'Facing new oil glut, Saudis avoid 1980s mistakes to halt price slide'. Reuters. 2014.
- ¹⁷ 'Financial Review of the Global Oil and Natural Gas Industry 2015' US Energy Information Administration. 2016
- ¹⁸ Chapin Metz, Helen. 'Saudi Arabia: A Country Study'. GPO for the Library of Congress. 1992.
- ¹⁹ 'Goals'. Kingdom of Saudi Arabia, Saudi Vision 2030. 2016.
- ²⁰ 'The fiscal impact of privatization in Canada'. The Bank of Canada, 2010.
- ²¹ Baffes, John. Kose, M. Ayhan. Ohnsorge, Franziska. Stocker, Marc. 'The Great Plunge in Oil Prices: Causes, Consequences and Policy Responses'. World Bank Group. 2015.
- ²¹ Gold, Russell. 'Back to the Future? Oil Replays 1980s Bust'. The Wall Street Journal. 2015.
- ²² 'The next shock?'. The Economist. 1999.
- ²² Grennes, Thomas. Strazds, Andris. 'Consequences of the World Oil Glut'. Economonitor. 2015.
- ²² Mabro, Robert. 'The Oil Price Crisis of 1998'. Oxford Institute for Energy Studies. 1998.
- ²³ Mamoud, Danjuma. 'Privatization and Poverty Reduction in Nigeria'. 2005
- ²⁴ Anwanyu, C. John. 'President Babbangida's Structural Adjustment Programme and Inflation in Nigeria'. Volume 7, Issue 1. Journal of Social Development in Africa. 1992.
- ²⁵ 'The next shock?'. The Economist. 1999.
- ²⁵ Erochkin, Pavel. 'Russia and its Oil: Friends or Foes'. Blueprint for Russia. 2005.
- ²⁶ Mathew, Roy. 'Effect of Declining Oil Prices on Oil Exporting Countries'. Stanford University. 2000.
- ²⁷ Blasi, J., Kroumova, M., Kruse, D. 'The privatization of the Russian economy'. Cornell University Press. 1997.
- ²⁸ Erochkin, Pavel. 'Russia and its Oil: Friends or Foes'. Blueprint for Russia. 2005.
- ²⁹ Anwanyu, C. John. 'President Babbangida's Structural Adjustment Programme and Inflation in Nigeria'. Volume 7, Issue 1. Journal of Social Development in Africa. 1992.
- ³⁰ Anwanyu, C. John. 'President Babbangida's Structural Adjustment Programme and Inflation in Nigeria'. Volume 7, Issue 1. Journal of Social Development in Africa. 1992.
- ³¹ Gwiazda, Adam. 'Working Paper No. 5/1986: American-European economic relations with the Comecon countries in the 1980's'. John F. Kennedy-Institut für Nordamerikastudien. 1986.
- ³² Cui, Carolyn. Al Omran, Ahmed. Whittall, Christopher. 'Saudi Arabia's \$17.5 Billion Bond Sale Draws Investors'. The Wall Street Journal. 2016.
- ³³ 'Securing Economic Renewal: Budget Speech'. Government of Canada, Minister of Finance. 1986.

-
- ³⁴ 'Heritage Fund – Historical Timeline'. Government of Alberta, Treasury Board and Finance'. 2015.
- ³⁵ Emery, Herb. Kneebone, Ron. 'Alberta's problems of plenty'. Policy Options, 2011.
- ³⁶ 'Saudi Arabia'. U.S. Department of State. 2001
- ³⁷ Al-Moneef, Majed A. 'Vertical Integration Strategies of the National Oil Companies'. The Developing Economies. Volume 36, Issue 2. 1998.
- ³⁸ 'The Middle East and North Africa 2004'. Taylor & Francis Group. 2003.
- ³⁹ Al-Moneef, Majed A. 'Vertical Integration Strategies of the National Oil Companies'. The Developing Economies. Volume 36, Issue 2. 1998.
- ⁴⁰ Draga Claudia, Marin. 'The Strategies of BRICS' National Oil Companies for Energy Security: Joint Ventures Bargaining and Vertical Integration'. Paris-Dauphine University. 2012.
- ⁴¹ Vatansever, Adnan. 'Russian Involvement in Eastern Europe's Petroleum Industry: The Case of Bulgaria'. GMB Publishing Ltd. 2005.
- ⁴² Vatansever, Adnan. 'Russian Involvement in Eastern Europe's Petroleum Industry: The Case of Bulgaria'. GMB Publishing Ltd. 2005.
- ⁴³ Starling, Rosalie. 'Rosneft signs new agreements at St. Petersburg International Economic Forum'. Energy Global. 2015.
- ⁴⁴ Agbaeze, E.K. Udeh, S.N. Onwuka, I.O. 'Resolving Nigeria's dependency on oil – The derivation model'. Journal of African Studies and Development, Vol 7, Issue 1. 2015.
- ⁴⁵ Anwanyu, C. John. 'President Babbangida's Structural Adjustment Programme and Inflation in Nigeria'. Volume 7, Issue 1. Journal of Social Development in Africa. 1992.
- ⁴⁶ Mustapha, Abdul Raufu. 'Cocoa Farming and Income Diversification in South-western Nigeria'. Afrika-Studiecentrum, Leiden Centre for Research and Documentation. 1999.
- ⁴⁷ Mustapha, Abdul Raufu. 'Cocoa Farming and Income Diversification in South-western Nigeria'. Afrika-Studiecentrum, Leiden Centre for Research and Documentation. 1999.
- ⁴⁸ 'The fiscal impact of privatization in Canada'. The Bank of Canada, 2010.
- ⁴⁹ Boardman, Anthony. Laurin, Claude. 'Privatization in Canada: Operating and Stock Price Performance with International Comparisons'. Journal of Law & Economics, 32, 1-33. 2002
- ⁵⁰ Mahmoud, Danjuma. 'Privatization and Poverty Reduction in Nigeria'. The Nigerian Economic Summit Group. 2005.
- ⁵¹ Elias, A. 'The Performance of Privatized Firms in Nigeria'. Unpublished PhD Thesis, University of Ibadan-Nigeria.
- ⁵² Al-Buridi, A. Gupta, N. Wamuziri, S. 'Privatization in Saudi Arabia: Developing structure of management implementation of the programme'. Napier University, Conference Proceedings. 2007.
- ⁵³ Puffer, S. McCarthy, D. Naumov, A. 'The Russian capitalist experiment'. Edward Elgar Publishing Limited. 2000.
- ⁵⁴ Sager, C. 'Economic reform today: Privatization in the digital age'. 1999.
- ⁵⁵ Reddaway, Peter. 'The roots of Russia's crisis: The Soviet Legacy, IMF/G-7 Policies, and Yeltsin's Authoritarianism'. Russia Business Watch, Volume 12, Issue 6. 2008.
- ⁵⁶ Ogbe, N. E. 'Evaluation of Nigeria's Debt-Relief Experience (1985-1990)'. The Organization for Economic Cooperation and Development, Working Paper No. 55. 1995.
- ⁵⁷ Ogbe, N. E. 'Evaluation of Nigeria's Debt-Relief Experience (1985-1990)'. The Organization for Economic Cooperation and Development, Working Paper No. 55. 1995.
- ⁵⁸ Gaidar, Yegor. 'The Soviet Collapse: Grain and Oil'. American Enterprise Institute for Public Policy Research. 2007/
- ⁵⁹ LaFollette, Karen. 'Cato Institute Foreign Policy Briefing No. 8: Government Loans for the Soviet Union: A Disservice to U.S. Taxpayers and Soviets Alike'. Cato Institute. 1991.
- ⁶⁰ 'World Debt Tables 1992-93 and 1993-94'. World Bank, 1992, 1993.
- ⁶¹ Whittall, Christopher. Parasio, Nicolas. Cui, Carolyn. 'Saudi Arabia's Bond Marketing Efforts Pay Off'. The Wall Street Journal. 2016.
- ⁶² Ghali, Khalifa. 'Government Spending and Economic Growth in Saudi Arabia'. Journal of Economic Development, Vol. 22, No. 2. 1997.
- ⁶³ Woods, James. 'Alberta NDP rules out using Heritage Fund to balance books'. The Calgary Herald. 2015.
- ⁶⁴ Al-Moneef, Majed A. 'Vertical Integration Strategies of the National Oil Companies'. The Developing Economies. Volume 36, Issue 2. 1998.
- ⁶⁵ Al-Moneef, Majed A. 'Vertical Integration Strategies of the National Oil Companies'. The Developing Economies. Volume 36, Issue 2. 1998.
- ⁶⁶ Myers-Jaffe, Amy. Ellass, Jareer. 'Saudi Aramco: National Flagship with Global Responsibilities'. James A Baker III Institute for Public Policy. 2007.
- ⁶⁷ Vahtra, Peeter. 'Russian Investments in the CIS – Scope, Motivations and Leverage'. Pan-European Institute. 2005.
- ⁶⁸ Vahtra, Peeter. 'Russian Investments in the CIS – Scope, Motivations and Leverage'. Pan-European Institute.

2005.

⁶⁹ Callen, Time. Cherif, Reda. Hasanov, Fuad. Hegazy, Amgad. Khandelwal, Padamja. 'Economic Diversification in the GCC: Past, Present, and Future'. International Monetary Fund. 2014.

⁷⁰ Bonaglia, F., Kiichiro Fukasaku. 'Export Diversification in Low-Income Countries: An International Challenge after Doha'. Working Paper No. 209, Organisation of Economic Co-operation and Development. 2003.

⁷¹ Sugawara, Naotaka. 'From Volatility to Stability in Expenditure: Stabilization Funds in Resource-Rich Countries'. IMF Working Paper. 2014.

⁷² Sugawara, Naotaka. 'From Volatility to Stability in Expenditure: Stabilization Funds in Resource-Rich Countries'. IMF Working Paper. 2014.

⁷³ Tornell, Aaron. Philip R. Lane. 'The Voracity Effect'. The American Economic Review. 1999.

⁷⁴ Mabro, Robert. 'The Oil Price Crisis of 1998'. Oxford Institute for Energy Studies. 1998.

⁷⁵ Mabro, Robert. 'The Oil Price Crisis of 1998'. Oxford Institute for Energy Studies. 1998.