

POLITICAL INSTABILITY IN PETROSTATES: THE MYTH OR REALITY OF OIL
REVENUE AS PETROSTATE STABILIZER

by

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ABSTRACT OF THE DISSERTATION

Political Instability in Petrostates: The Myth or Reality of Oil Revenue as Petrostate

Stabilizer

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This dissertation explores the correlation between petrostates' oil revenue fluctuations and political stability or political instability. Petrostates (countries heavily reliant on oil revenues) often maintain domestic stability by using petrodollars to fund social programs and a strong state security apparatus. In the context of a post-Arab Spring world, characterized by increasing protests against oppression, petrostates with dramatically reduced revenues could portend destabilizing revolutions, uncertainty in geopolitics and energy supply, and general upheaval in global politics. In light of these circumstances, the main research question is: Do petrostates become unstable politically as oil prices fluctuate, and if so, are these countries significantly at risk of becoming failing states?

The methodological approach is mixed method, quantitative and qualitative. Purposive sampling is conducted on six countries—Algeria, Iran, Nigeria, Russia, Saudi Arabia and Venezuela. The primary data source is the *New York Times*(NYT) online archive, and the time span for analysis is 29 years—from 1981-2010. Based on the NYT online archive, four types of categories are identified to denote political instability: (1) Demonstrations and Riots, (2) Civil War and Guerilla Warfare, (3) Coups D'Etat and Attempted Coups D'Etat and (4) Terrorism. These four categories

are collectively referred to as Political Instability Indicators. The research results suggest that in prolonged low oil periods petrostates experience increased levels of instability and are in danger of becoming fragile states.

To Andrei, Maya, Alex and Professor Norman Samuels.

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CHAPTER I INTRODUCTION

When discussing sources of global power, scholars in international affairs have frequently underemphasized how natural resources (particularly oil) afford states power¹ and unique global status. The ability of a state to secure energy for its population is a modern-day imperative, but a state derives significant power with surplus energy for export. Generally, powerful petroleum exporting states (hereafter referred to as petrostates²) have not gained global influence through traditional power sources such as stellar economies and strong armies; many in fact have growing but moderate-performing economies and medium-sized militaries.³ As long as energy demand is growing, petrostates will garner increasing power.

An abundance of scholarship has focused on negative aspects of petrostates or resource-endowed countries. Researchers have frequently examined why these states have democratic deficits, environmentally unsustainable practices, the Resource Curse/Dutch Disease and related rent-seeking behavior,⁴ yet many scholars acknowledge

¹ Here, the term power draws on the realist tradition in international relations, specifically Hans Morgenthau's version of power elaborated in *Politics Among Nations* (USA: The McGraw Hill Companies, Inc., 1948) Inc., pp. 5 and 11.

² Defining a petrostate is not without controversy, particularly due to the negative connotations associated with the word. A hybrid definition is developed and used throughout the dissertation: Petrostates are states that produce two million or more barrels of oil per day and/or where oil rents are over 10% of GDP. The second criterion in this definition closely follows Jeffrey Colgan's characterization of petrostates. See "Oil and Revolutionary Regimes: A Toxic Mix," Paper prepared for the International Political Economy Society, Annual Meeting, Philadelphia, PA, November 2008. In Chapter II a Typology of Petrostates is presented and based on this definition.

³ For further economic and military indicators on countries, see the World Bank's online resource: <http://data.worldbank.org/indicator>.

⁴ A partial list of notable literature examining petrostates and/or countries with high dependency on extractive industries includes: Marshall I. Goldman, *Petrostate: Putin, Power and the New Russia*, (New York: Oxford University Press, 2008); Terry Lynn Karl, *The Paradox of Plenty: Oil Booms and Petro-States*, [*The Paradox of Plenty: Oil Booms and Petro-States*. Berkeley: University of California Press, 1997;](#)

the clout of these energy powerhouses in global affairs. The growth in global oil demand, Fareed Zakaria observes, means that “...certain countries—those endowed with natural resources, especially petroleum and natural gas—get free rides.”⁵ He further notes that one of the key political challenges to the Western world, especially the United States, comes from countries with “newfound strength built on oil.”⁶ On the economic front, Zakaria asserts that economies today “must be a source of either ideas or energy (meaning oil, natural gas, coal, etc.).”⁷ Other political affairs experts have weighed in on energy-endowed countries and the new global energy order. Michael L. Ross writes, “Nationalization [of oil industries] made the governments of oil-exporting countries richer and more powerful than ever before.”⁸ Michael T. Klare argues that energy security is an urgent issue for most developed states and this reality has “...fundamentally changed the perception of what constitutes ‘power’ and ‘influence’ in a dramatically altered international system, forcing policymakers to view the global power equation in entirely new ways.”⁹ While Thomas Friedman does not explicitly suggest that petrostates have elevated global power, he does view oil as the vehicle to power: “Because the rising price of crude is certain to be a major factor shaping international relations for the near future, we must try to understand any connections it

Michael L. Ross’s “The Political Economy of the Resource Curse” *World Politics* 51 (January 1999), pp. 297-322 and Jeffrey D. Sachs and Andrew M. Warner, *Natural Resource Abundance and Economic Growth* (Cambridge, MA: Center for International Development and Harvard Institute for International Development, 1997).

⁵ Fareed Zakaria, *The Post-American World, release 2.0* (New York: W.W. Norton, 2011) p. 31.

⁶ Ibid.

⁷ Ibid., p. 232.

⁸ Michael L. Ross, “Will Oil Drown the Arab Spring?” *Foreign Affairs*, Volume 90, Number 5, September/October 2011, p. 3.

⁹ Michael T. Klare, *Rising Powers, Shrinking Planet* (New York: Holt Paperbacks, 2008) p. 14.

has with the character and direction of global politics.”¹⁰ Along those lines, Daniel Yergin, a leading oil expert contends, “The essential drama of oil—the struggle for access, the battle for control, the geopolitics that shape it—will continue to be a decisive factor for our changing world.”¹¹

Notwithstanding the might of petrostates,¹² their key source of influence in the global arena—oil—is a precarious means of maintaining power. There are three major oil-related threats to petrostates’ medium- and long-term power in their domestic politics and global arena. The first threat is the uncertainty of boom-and-bust oil cycles affecting state budgets. The revenue fluctuations inherent in petroleum economies hinder steady, sustainable development and the ability to make reliable budget calculations. *Secondly*, oil power is transient as all fossil fuels are exhaustible resources; unconventional sources of oil such as tar sands (heavy oil) and ultra-deep water drilling may displace conventional oil reserves, and/or environmental concerns may finally bring about technological innovation to supplant the need for oil. In the case of Russia and Saudi Arabia, sovereign wealth funds have been created to counter temporary drops in oil revenues but are not adequate to offset potentially declining oil industries. Long-term contingency plans such as economic diversification have been slow-moving, ineffectual or outright ignored in many petrostates. *Thirdly*, oil revenues have become vital to support domestic social safety nets; subsidies for oil, housing or food; domestic projects

¹⁰ Thomas Friedman, “The First Law of Petropolitics,” *Foreign Policy*, May/June 2006, p. 31.

¹¹ Daniel Yergin, *The Quest: Energy, Security and the Remaking of the Modern World*. (New York: Penguin Books Ltd., 2011) Location: 148-62.

¹² Clearly not all petrostates have the same level of global influence and power. Petrostates have diverse economic conditions, political cultures and advantages in oil production. It is acknowledged that characterizing all petrostates as a monolithic group with significant global power would be inaccurate. Chapter II presents a basic typology of petrostates and how to determine whether or not a state could be deemed a petrostate.

to garner good will amongst the population, and in addition, a strong state security apparatus. Once these governments incur vast societal obligations, they cannot easily rescind them without fervent objections by the population and usually civil unrest. Thus, many petrostates are held hostage by burgeoning budgets due to major entitlement programs that aid in stabilizing their societies.

Dissertation Overview and Chapter Organization

This dissertation explores the correlation between petrostates' oil revenue fluctuations and political stability or political instability¹³. Premised on their precarious position in the global system, the main hypothesis of this dissertation is that petrostates are susceptible to oil price fluctuations (more accurately oil rents¹⁴) so much so that trends indicating political instability increase after oil revenues decrease. Furthermore, petrostates are frequently plagued by other instability triggers such as youth bulges and high unemployment, which when combined with decreases in oil revenues, create even greater chances of major political upheaval. A working assumption is that growing oil independence or increased energy security by states in light of concerns over peak oil, extreme climate change, disruptive technology, or other factors will gravely weaken petrostates. If demand for oil dramatically decreases, petrostates face political

¹³ The working definition of "political instability" used throughout the chapter relies on the definition by Alberto Alesina, Sule Ozler, Nouriel Roubini and Phillip Swagel's that states political instability is "the propensity of a government to collapse." See "Political Instability and Economic Growth" National Bureau of Economic Research, Cambridge, MA: 1992) p. 1.

¹⁴ According to the World Bank, "Oil rents are the difference between the value of crude oil production at world prices and total costs of production." See World Bank, *World Development Indicators: 2011*, (The World Bank, 2011) p. 187. Note: Determining petrostates' oil revenues is difficult since production costs, world oil prices, domestic consumption and subsidies of oil need to be factored in to calculate the actual revenues. Most petrostates do not provide full disclosure on these figures.

uncertainty, particularly because decades-long subsidies from petrodollars to the population will be reduced or eliminated; the ramifications could be enormous for these states and destabilizing beyond their borders.

Based on the hypothesis, the main dissertation question is: Do petrostates become unstable politically as oil revenues decrease, and if so, could these countries become failing states? The importance of the research is twofold. First, a proliferation of scholarship exploring the authoritarian resilience and economic inefficiencies in petrostates exists; however, research into the nexus between oil revenues in petrostates and political stability/instability has been insufficiently examined. Secondly, the intention for this study would be for academics and policymakers to further the research related to: (1) the constraints of petroleum and resource-based states and their economies, (2) theoretical frameworks about petrostate destabilization—economic, political or both, (3) the global ramifications, from an energy security perspective, if energy powerhouses were to become unstable or failing states, and finally, (4) the impact of renewable or unconventional energy sources or technologies on oil based economies and communities. By encouraging effective policy prescriptions, petrostate governments can preempt future turbulence in their societies, in part by offering non-economic based concessions such as greater political liberties or considering best practices for economic diversification from petroleum based industries, all of which would be beneficial for global energy security and reduce the chances of a new crop of failing states from emerging.

This dissertation is divided into five chapters. The current introductory chapter presents the structure, organization, and general methodology of the dissertation. There is also a brief examination of the rise of petrostate power through national oil companies

(NOCs), the precarious nature of petrostate power and a cursory review of theories related to political instability and failed states. The second chapter discusses the challenges of defining or identifying a petrostate and presents a classification of three types of petrostates. Primarily, Chapter II offers a literature review, which deals broadly with the epistemology of oil politics. Theories in oil politics and energy security are often multidisciplinary and intersect with fields such as political science/global affairs, environmental studies, history, economics, sociology, engineering and various scientific fields—environmental science and geology, for example. Here, to narrow the scope of the field, the major theories and debates are primarily within the field of global affairs, although these theories are not restricted to this field. Chapter III provides profiles of Saudi Arabia, Russia, Iran, Nigeria, Venezuela and Algeria. Each country profile includes three subsections; the first subsection discusses oil power, the second subsection discusses subsidies, social programs and break-even oil prices, and the third subsection discusses pressing areas of political, economic, or social instability. Chapter IV presents the research methodology, a comparative look at the European Media Monitor as an alternative data source to the NYT data source, an in-depth explanation of the indicators created, test results for each political instability indicator and a summary of the data results. Finally, the conclusion is a summary and assessment of the data results and a tentative look forward on global energy issues and how the data results inform the current position of petrostates.

Methodological Overview

A detailed elaboration of the methodological approach and the research results will be provided in Chapter IV, but here it is worth noting some general points about this study's methodology. The research strategy most advantageous for this inquiry is a mixed methods approach, or triangulation design.¹⁵ Although the data results in this dissertation are quantitative in nature, most of the findings are still contextualized through a qualitative approach. To research the dissertation question, data event analysis is used and the *New York Times* online archive of articles is the data source.

Conducting research on this subject begins with purposive sampling of six countries that fall under the definition and rubric of Type I Petrostates.¹⁶ Since the entire statistical universe of states is 195, and the entire universe of petrostates is 33, the six countries selected, Saudi Arabia, Russia, Iran, Nigeria, Venezuela and Algeria provide an adequate number. Also, the Type I Petrostates that were selected for testing adhere precisely to the petrostate criteria presented in the definition. The second component to researching this question is identifying a source of data and determining optimal search terms to retrieve the desired results. The NYT online archive datasource used contains over three million articles. The intent of the data collection process was to find *NYT's* articles that indicated political instability in these six petrostates and to correlate the frequency of events (reported on in the NYT) with an overlay time line of oil prices. The overall goal is to assess over the course of 29 years, from 1981-2010, political instability and oil price decreases in petrostates. The *NYT* was the prime source of information, but

¹⁵ Triangulation design is characterized by the merging of quantitative and qualitative design.

¹⁶ Chapter II includes a "Classification of Petrostates" chart and attempts to justify why there are more typical examples of petrostates—those that were selected—and less typical or outliers that were not included in the sample.

two additional sources for graphs were used. The World Bank online “Indicators” were used for information on petrostates and other oil-related information: <http://www.dataworldbank.org> and *The BP Statistical Review of World Energy 2011*: <http://www.bp.com/productlanding.do?categoryId=6929&contentId=7044622> was used for oil prices and other economic data.

In order to investigate the research question, terms that denote instability were drawn from literature on failing/failed states, political instability and other models that attempted to examine political destabilization.¹⁷ The searchable terms in the NYT archive that overlapped with the common terms identified from the failed states literature were selected. These terms, once identified, were further narrowed, if, for example, they rarely occurred in the nine Type I Petrostates originally tested.¹⁸ Four search terms, due to frequency and relevance to the literature, were identified: (1) Demonstrations and Riots, (2) Civil War and Guerilla Warfare, (3) Coups D’Etats and Attempted Coups D’Etats and (4) Terrorism. These search terms, referred to as political instability indicators, offer a novel way to identify trends suggesting political turbulence in petrostates.

The Trajectory of Petrostate Oil Power, NOCs, and Geopolitical Realities

¹⁷ The terms identified in the NYT archive searchable terms--Demonstrations and Riots, Civil War and Guerilla Warfare, Coups D’Etats and Attempted Coups D’Etats and Terrorism--were also found in the research conducted by Robert I. Rotberg and Lester R. Brown, although there were slight variations in the terms. Another reference is The Fund for Peace’s “Failed States Index.”

¹⁸ This process by which the terms were selected to denote political instability in the four petrostates is further explained in Chapter III.

Most countries with oil wealth did not immediately reap the rewards of this vital resource. The classic case of initially poor but oil rich Saudi Arabia has often been cited. The evolution from relatively poor, energy-endowed countries to energy superpowers rests on several turn of events, but the most important development was the nationalization of energy resources. Moreover, the emergence of nationalized oil companies (NOCs) quickly and easily empowered energy exporting countries. Currently, petrostates primarily have NOCs, or state-run energy companies, but occasionally some petrostates have semi-private oil companies, as in the case of Russia's Lukoil. Although NOCs are in competition with the giant private oil giants, commonly referred to as the "majors" or "supermajors," NOCs have been doing exceedingly well and providing great wealth for their respective petrostates.

The rise of energy powerhouses begins in the second half of the 20th century with the rise of NOCs and the emergence of the Organization of Petroleum Exporting Countries (OPEC). Summarizing this transitional phase in oil power, Paul Roberts writes:

At first the transfer of power was slow...Oil states gradually raised their royalty rates, and the majors promptly passed the new costs on to consumers. But in 1969...As prices rose, Saudi Arabia and the rest of OPEC...raised their own prices to take advantage of the tight market...In 1971, Venezuela dramatically raised the royalty it charged oil companies from each barrel they pumped out to 70 percent and announced plans to nationalize its oil industry. As one OPEC nation after another followed suit, the majors, the big importing nations, and the rest of the old oil order confronted a world in which more than 53 percent of the world's most vital resource lay under OPEC control.¹⁹

¹⁹ Paul Roberts, *The End of Oil: On the Edge of a Perilous New World* (Boston and New York: Houghton Mifflin Company) p. 100.

In fact, nowadays, Daniel Yergin notes that the supermajors, which previously were all private, are mostly NOCs and do not control 53% but about 80% of the world oil reserves.²⁰ What this means is that unlike other industries or sectors in a country, oil in petrostates falls within the purview of the state and oil companies are most often nationalized. (See chart below.) In autocratic regimes with elite interests, the symbiotic relationship between energy companies and governments is highly entrenched. This relationship can also be simply presented as shoring up energy security for the petrostates and also engendering popular domestic support if there is the perception that a nation has control over its indigenous natural resources. Michael Klare suggests that this close partnership between the ruling elite of petrostates and energy companies provides "...an enormous source of latent power for the states that control them."²¹ He further explains how government-run oil companies are partnering with one another: "Although often justified on economic grounds, these NOC-to-NOC alliances are clearly also intended to reinforce ties between the governments involved and diminish the influence once enjoyed by the Western powers and the corporate oil giants in energy-rich, once underdeveloped and colonized areas of the world."²² These facts and trends are vital as they suggest many petrostates are able to utilize oil as a political and economic tool, and if necessary, undermine Western energy companies, whose clients are keenly affected by oil prices and supply disruptions. Unsurprisingly, the power of NOCs has spurred increased

²⁰ Daniel Yergin, *The Prize* (New York: Free Press, 2009) p. 770.

²¹ Michael T. Klare, *Rising Powers, Shrinking Planet* (New York: Holt Paperbacks, 2008) p. 17.

²² Ibid. 19.

discourse about energy security²³ by energy importing countries. However, transitioning to energy independence (more precisely oil independence) and away from oil importing countries is not a realistic short-term proposition.

The Economist magazine succinctly writes what the new reality is for the supermajors:

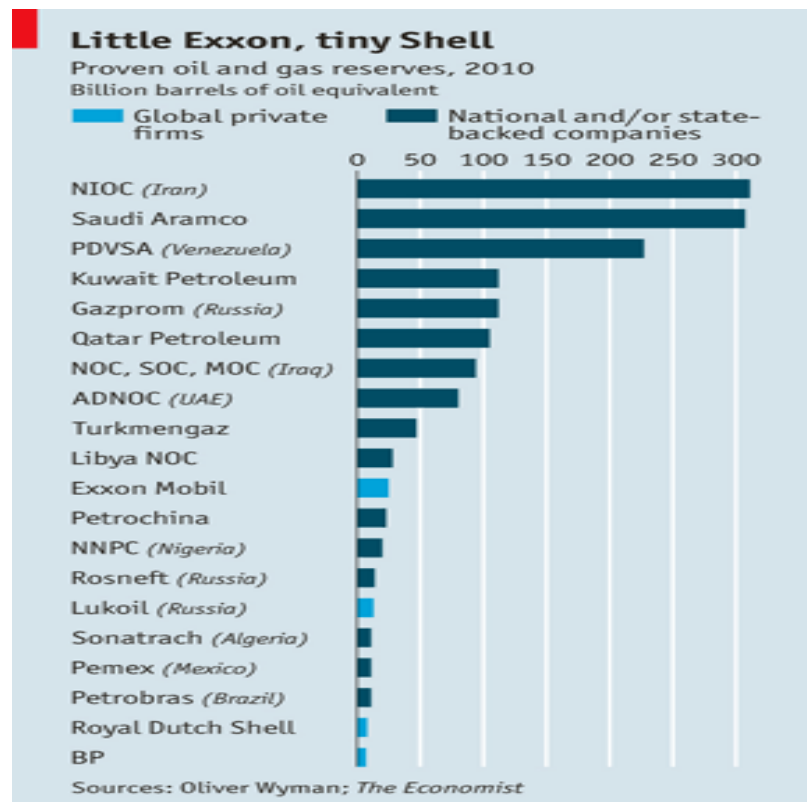
Half a century ago life was simple for the world's oil giants. Countries with lots of oil often lacked the technology, capital and management skills to find and extract it. Western oil firms supplied all of the above, and did rather well out of it. But then OPEC was born, and petrostates started their own state-backed national oil companies to take charge of their reserves.²⁴

These state-backed national oil companies or NOCs became a widespread phenomenon and limited the areas for potential oil exploration for the supermajors. Regardless, energy companies have been extremely profitable, even with these limitations. The power that petrostates gained through nationalization of their extractive industries was what fundamentally changed the politics of oil and energy. A cursory glance at *the Economist* chart comparing private energy firms' and NOCs' proven reserves shows the ever-present energy security threat for many developed countries, resulting from tightness in the oil market or relying on supplies from countries that can be hostile to the West.

²³ Energy security can be described as either a goal or the point at which a country has a steady and stable supply of domestic energy, either through diversification of sources, or through the ability for that country to use its own energy supplies in the case of any short-term supply disruptions. (Author's definition.) Energy independence is either a goal or a point at which a country is completely self-reliant for its domestic energy needs and has no need to depend on supplies from other countries. Hypothetically, an energy independent state may choose to import energy, but only because it is advantageous due to production costs or the desire to increase its energy reserves. (Author's definition.)

²⁴ The Economist, "Big Oil's bigger brothers," 29 Oct.-4 Nov., 2011 (Online) <http://www.economist.com/node/21534794>, accessed 10/30/2011.

Chart 1.1 National and/or State-backed Oil and Global Private Firm Reserves



Once oil states began nationalizing their resources, the transfer of power, and in some cases increased revenue, marked the emergence of petrostates and petropower. NOCs, and by extension petrostates, will wield power in the short-term, but there are already dramatic innovations in technology coming into play that can upend the existing global energy order.

Petrostates' Precarious Position: New Extractive Methods and Unconventional Oil Sources

Daniel Yergin provides the most authoritative historical account of the emergence of oil power during the nineteenth, twentieth and first years of the twenty-first century in his book *The Prize*. Although the private oil industry emerged in the second half of the nineteenth century, and big players like Standard Oil held tremendous sway in the global energy market, it was only in the late 1960s and after that states became players in the energy market once they began nationalizing their oil fields. For some petroleum exporting states this energy power was attained approximately 40 years ago, while for others it was a recent development, as in the case of Brazil, which in 2007 found that its Tupi field had between 5 and 8 billion barrels of recoverable oil. This discovery could move Brazil from a net oil importer to a net oil exporter.²⁵ Even the newly discovered Bakken Oil Shale in North Dakota and possibly greater reliance on Canadian tar sands could move the US to increasing oil independence and less reliance on petrostate oil. In contrast to these new discoveries, some petroleum exporting states are at the point of nearly depleted reserves, and irrespective of the new technology to recover oil, their oil fields are in permanent decline. Not only do new emerging petropowers like Brazil, with its own NOC, increase competition for the existing petrostates, but more damaging are modern extractive or refining technologies and the slowly but steadily increasing use of alternative technologies or resources. Much of the motivation that has prompted the push for new ways to seek out oil sources is two-fold. First, the private supermajors have fewer areas for exploration due to NOCs, or have already identified major conventional oil fields, and have a limited ability to expand their petroleum reserves. Secondly,

²⁵ Joshua Schneyer, "Brazil, the New Oil Superpower" *Bloomberg.com*, November 19, 2007, (Online) http://www.businessweek.com/bwdaily/dnflash/content/nov2007/db20071115_045316.htm (Accessed : October 28, 2011.)

because of ever-present concerns of oil importers about oil security, oil importing countries have sought new supply lines and diversification.

Oil creates a “lifeline” for petrostates that may eventually disappear. Various scholars have noted that the oil boom of the 1970s ushered in a wave of optimism for oil-endowed states when leaders there envisioned building strong economies.²⁶ Yet institutional deficiencies, corruption and lack of economic planning beyond high oil prices prevented most of the petrostates from moving their economies and societies forward. Mahmoud El-Gamal and Amy Myers Jaffee write, “These new expectations relied on rent-seeking behavior and welfare-state dependency, which de-emphasized education and human-capital building in the various fields that would support the regional economy when oil rents dried up.”²⁷ In addition, other oil scholars summarize what major issues can destabilize energy powerhouses: “In Russia, the apparent strength of the Putinist model conceals deep weaknesses of corruption, under-investment and a public-health crisis...Saudi Arabia is burdened by spending on subsidies, armaments, unproductive job creation, and political and financial support to governments in neighbouring Bahrain, Yemen, Oman and Egypt.”²⁸ And focusing on Saudi Arabia, the country faces a heavy reliance on oil prices staying high. Deutsche Bank oil analyst Paul Sankey posits: “We believe Saudi Arabia now requires oil at \$92 a barrel to break even fiscally, up from \$60 a barrel in 2008, on higher post-Arab Spring spending. The Saudis

²⁶ See Terry Lynn Karl’s [*The Paradox of Plenty: Oil Booms and Petro-States* \(Berkeley: University of California Press, 1997\)](#), which focuses on Venezuela as a case study and examines how irrespective of steady oil revenues, Venezuela has not capitalized on this oil wealth for the public good.

²⁷ Mahmoud A. El-Gamal and Amy Myers Jaffe, *Oil, Dollars, Debt, and Crises: The Global Curse of Black Gold*. New York: Cambridge University Press, 2010. (Kindle Version) Location: 296-305.

²⁸ Robin Mills, “Petro states should note oil’s power to fell the mighty,” *The National*, <http://www.thenational.ae/>, May 31, 2011.

‘will cut production to defend \$92.’”²⁹ Since Saudi Arabia promised \$130 billion in housing subsidies and other spending programs, the Saudis will need oil prices to stay high for at least 2012.³⁰ These troubling trends for Saudi Arabia are echoed in the other petrostates and are examined in greater depth in Chapter IV.

In *Petrostate: Putin, Power, and the New Russia*, Marshall Goldman illustrates how crucial Russia’s energy supplies are to Europe. With regards to natural gas, Goldman notes that the dispatchers in Gazprom could potentially switch off gas supplies to entire countries in Europe, and many of these countries are almost 100% dependent on gas supplies from Russia.³¹ Goldman’s assessment of Russia’s clout in the natural gas sector, although less so in oil, is dramatically changing and provides a cautionary tale for petrostates of the potential for countries’ main revenue source to become almost obsolete or accessible to other countries in new ways. Hydraulic fracturing has resulted in a major global shift in how nations view the prospects of natural gas and the fragile supply chain. After the January 2006 standoff between Ukraine and Russia, when energy supplies going to Europe were cut off, Europe quickly identified contingency plans to secure gas supplies. The immediate plan was to move towards liquefied natural gas (LNG) and reconsider pipelines. Both methods of shoring up energy security in Europe would mean massive investment and not assure energy security in the short-term.³² However, the grip that Russia has had over Europe’s natural gas supplies is now rapidly diminishing. Many

²⁹ [Steve Hargreaves](http://money.cnn.com/2011/10/27/markets/saudi_oil_cut/index.htm?iid=HP_LN), “Saudi oil production cut looms” October 27, 2011, http://money.cnn.com/2011/10/27/markets/saudi_oil_cut/index.htm?iid=HP_LN.

³⁰ Ibid.

³¹ Marshall Goldman. *Petrostate: Putin, Power and the New Russia* (New York: Oxford University Press, 2008). Location: 229-42--242-54.

³² Steven Woehrel. “Congressional Report for Congress: Russian Energy Policy Toward Neighboring Countries,” Washington D.C.: Congressional Research Service, 27 Mar 2008, pp. 1-3.

countries in Europe have already taken notice of how hydraulic fracturing has tremendously increased natural gas supplies for the US and are attempting to do the same in Europe.³³

Petrostate governments are not adequately investing or creating new sectors that will diversify their economies. In part, the economic and business culture of petrostates makes it difficult to transition away from oil and few incentives exist for this transition. High dependence on oil revenues and the uncertain long-term prospects of oil demand is a calculated risk that petrostates are willing to take to maintain short-term revenue flows, domestic security and entitlements to their population. However, organizations such as the World Bank suggest there are deleterious effects and inefficiencies that energy economies will endure.

Natural resources give rise to economic rents because they are not produced. For produced goods and services competitive forces expand supply until economic profits are driven to zero, but natural resources in fixed supply often command returns well in excess of their cost of production. Rents from nonrenewable resources—fossil fuels...indicate the liquidation of a country's capital stock. When countries use such rents to support current consumption rather than to invest in new capital to replace what is being used up, they are, in effect, borrowing against their future.³⁴

Lack of substantial growth and diversification in petrostates may be blamed on short-lived bursts of oil wealth, or oil cycles. State legitimacy and temporary global power also ebbs and flows with the price of oil, and, for example, receded when oil prices dropped in the 80s and 90s. In addition, the following three triggers may foment politically

³³Amy Myers Jaffe. "Shale Gas Will Rock the World" *Wall Street Journal*, May 10, 2010. <http://online.wsj.com/article/SB10001424052702303491304575187880596301668.html>.

³⁴ World Bank, World Development Indicators 2011, World Bank: 2011 (pdf), p. 187.

instability: (1) The youth bulge and related demographic concerns, (2) Maintenance of extensive state-supported social services and (3) Growing radicalization against the government. The third point deserves some brief consideration. Although not found in every petrostate, the emergence of radicalized groups that opposed the state coincided with low oil prices. “During the lean years of the 1980s and 1990s, the increased economic and political frustration of middle-class Arabs, who were slowly sinking into poverty, turned portions of their youth to violent interpretations of political Islam that have only continued to grow.”³⁵

There are myriad challenges that petrostates face: new oil extraction technologies, and structural and political issues of oil economies and the three additional, domestic-related instability “triggers”. How petrostates manage and forecast the rapidly changing energy environment is vital to their stability and survival, and this why the subject of failed states should be discussed at some length.

Political Instability and the Prospects of Failed State Status

At the onset, recalling general characteristics of states provides context as to how these legal entities can fail or become fragile.³⁶ Christopher Clapham, although initially referencing Max Weber’s definition of a state, includes a global dimension: “States are organizations capable of maintaining a monopoly of violence over a defined territory, and of controlling, to a significant extent, the interactions between that territory and the world

³⁵ Ibid.

³⁶ The term “fragile state” is the most accurate way to describe states that have decreased capacity to effectively govern, deliver goods and services, and exercise authority. The term failed state, although widely used, would mean the most extreme case of state failure, or near state collapse. There are few states that are actually deemed failed states; most states fall on a spectrum from strong to weak states. Nonetheless, in failed states literature the term failing state and fragile state are often used interchangeably.

beyond it.”³⁷ This captures in several ways the need for domestic stability, which is inherent in strong states and their ability to project power outward.

Robert I. Rotberg, who is an expert on failing states notes “Nation-states fail when they are consumed by internal violence and cease delivering positive political goods to their inhabitants. Their governments lose credibility, and the continuing nature of the particular nation-state itself become questionable and illegitimate in the hearts and minds of its citizens.”³⁸ Generally speaking, most every high-functioning state must deliver goods and services to citizens and uphold promises. When a state ceases to function without capacity to provide goods and services to its citizens, when its authority has broken down, and when it is unable to exercise a monopoly over violence, these become the signs that a state is failing. Certainly assessing the degree to which states are highly effective or not may become a subjective exercise, yet there can be general consensus that beyond labeling a country fragile, failing, or a failed state, the appellation matters less so than how a population within the border of a state reacts to this arrangement.

A proliferation of failed states emerged post-Cold War. In the post-bipolar system, no great power was ready to move in to failing states and prop a state up or provide major support so as to secure another political alliance. Currently, failing and failed states pose extreme challenges for the global community, and no world body, not even the UN, has managed to “resuscitate” these failing states. Put bluntly, any increase

³⁷ Christopher Clapham, “The Global-Local Politics of State Decay,” in Robert I. Rotberg, ed., *When States Fail: Causes and Consequences*, (Princeton, NJ: Princeton University Press, 2004) Location: 73-89.

³⁸ Robert I. Rotberg, “The Failure and Collapse of Nation-States: Breakdown, Prevention, and Repair,; in Robert I. Rotberg, ed., *When States Fail: Causes and Consequences*, (Princeton, NJ: Princeton University Press, 2004) Location: 73-89.

in the number of failed or even failing states changes and challenges the existing order of states.

How state disintegration progresses is varied. Some states “fix” themselves and political power is restored, and on occasion this occurs when charismatic leaders emerge. Other times extremely weak governments and widespread collapse of institutions means governments are unable to fully restore authority. As in the case of Somalia—the quintessential failed state—reversing state failure there has become an intractable problem that affects the global community. Thus, preempting outright state failure is sometimes viewed through a humanitarian prism, other times through the westernizing notion of building state capacity through institutional legitimacy, democracy and an improving economy. International organizations, other states and NGOs—the global community as a whole, all have significant motivation to forecast and preempt such total state collapse. Political vacuums in states extend beyond domestic calamities, with byproducts such as pirates commandeering ships in international waters, radicalization that breeds transnational terrorism and the exacerbation of international humanitarian crises.

Conclusion

“Across the globe, oil is invoked as an agent of destiny. Oil will make you rich, oil will make you poor, oil will bring war, oil will deliver peace, oil will shape our world as much as the glaciers did in the Ice Age.”³⁹ Petrostates’ survival, in some cases, is almost entirely predicated on the steady export of oil. The excessive state subsidies that

³⁹ Peter Maass, “Scenes From the Violent Twilight of Oil,” *Foreign Policy*, September 2009, p. 108.

petrostates have incurred to pacify their populations have placed these states in a precarious position whereby they must continue to rely on oil revenues. This dissertation aims to evaluate the propensity of petrostates towards political instability and fragile or failing states status.

It is not necessarily easy or a neat line to begin by discussing petrostate power and conclude by talking about their prospects of becoming failing or fragile states. The beginning of this chapter begins by noting that petrostates command significant influence in the global arena. Some states acquired power primarily because of energy power; others had energy power and a combination of wealth, nuclear capability and geopolitical importance. However, since a bulk of petrostate power rests on their oil supplies, and even more specifically on high oil prices, their power is precarious. The secondary constraint petrostates face is that in order to maintain domestic stability, they must support subsidies (energy, food, housing, etc.), social safety nets and maintain a strong domestic security apparatus. Hence the ability of petrostates to maintain stability is a prerequisite to project power in the global arena.

CHAPTER II LITERATURE REVIEW

In the modern energy era, states that possess oil reserves are influential in global affairs. Petrostates, as argued in Chapter I, hold a unique position of power in the world since oil wealth generally bolsters a state's authority¹ and legitimacy, domestically and globally. In particular, petrostate rulers often maintain their power through oil wealth, which serves to strengthen and legitimize their rule. Conversely, decreasing oil wealth puts petrostate rulers in a precarious position. Thus, if petrostates' oil revenues are dramatically reduced, the repercussions could be political instability within these states, reduced global energy security, and potentially, an increasing number of fragile or failed states

Why is oil wealth important for the stability and sustainability of petrostate leaders, and ultimately, petrostates? Primarily because oil revenues fund extensive domestic social safety nets used to stabilize societies, enhance the image of unpopular governments and strengthen petrostate rulers.² Furthermore, petrostate rulers are rational actors attempting to maintain power, and governments that control national revenue are better positioned to consolidate their power according to Bruce Bueno de Mesquita and Alastair Smith.³ With regards to the Middle East and Northern Africa, the oil politics and democratization expert, Michael L. Ross, posits: "Rulers across the region used some of the oil wealth to fund social programs to improve public services and appease their

¹ Certainly some petrostates such as Libya and Yemen, irrespective of their oil wealth, were never able to achieve high functioning state capacity and authority.

² Chapter IV discusses more specifically Algeria's, Iran's, Nigeria's, Russia's, Saudi Arabia's and Venezuela's structure of oil rents allocation and government subsidies.

³ Bruce Bueno de Mesquita and Alastair Smith, *The Dictator's Handbook: Why Bad Behavior is Almost Always Good Politics* (New York: PublicAffairs, 2011), Location: 333-49.

populations. That helped them survive the wave of democratization that swept the globe in the 1980s and 1990s and chased scores of other dictators out of office.”⁴ Ross elaborates the three main ways petrostate governments maintain political stability: 1) Citizens in oil rich countries are not taxed, and not represented; 2) Oil money funneled in through state-run oil companies is secretive and prevents citizens from understanding the vast corruption within this system, and 3) Petrostate governments buy their military’s allegiance.⁵ All six countries profiled in this study, Algeria, Iran, Nigeria, Russia, Saudi Arabia and Venezuela provide subsidies to varying degrees. Saudi Arabia is the wealthiest of the six countries, based on per capita GDP⁶ and oil wealth, and is able to offer the most extensive social safety net. Algeria is the least wealthy in terms of oil production, and Nigeria has the lowest per capita GDP. Regardless of differences, all six petrostates have in common their obligations to maintain social spending and are vulnerable politically when oil prices drop. In addition, since most petrostates have a low tolerance for political dissent, these states must spend significantly on domestic security to quell critics or popular movements.⁷ Supporting these budgetary obligations is crucial, not only because of economic concerns but for these states’ survival.

In order to provide a theoretical foundation for the study of petrostates and the impact of oil prices on these regimes, this chapter reviews three major debates on oil politics, along with several theories on failed states. The first influential debate, and the

⁴ Michael L. Ross, “Will Oil Drown the Arab Spring?” *Foreign Affairs*, Volume 90, Number 5, September/October 2011, p. 3.

⁵ Ibid. pp. 3-4.

⁶ According to the CIA World Factbook <https://www.cia.gov/library/publications/the-world-factbook/geos/ir.html> the (2010), per capita GDP for: Algeria (\$7,300), Iran (\$10,600), Nigeria (\$2,500), Russia (\$15,900), Saudi Arabia (\$24,200) and Venezuela (\$12,700).

⁷ Mahmoud A. El-Gamal and Amy Myers Jaffe, *Oil, Dollars, Debt, and Crises: The Global Curse of Black Gold*, (New York: Cambridge University Press, 2010), Location: 151-158.

debate that is most deeply analyzed due to its relevance to petrostates, is peak oil theory. This theory argues that global oil supplies are decreasing and oil production has peaked.⁸ Although peak oil theory dominates academic discourse and policy circles focused on oil politics, there are several prominent skeptics that have intensified the debate against peak oil. An offshoot of peak oil theory suggests conflict increases and international wars are waged over scarcity of resources, particularly oil. The second major debate is the resource curse, which suggests that countries with an abundance of natural mineral resources fair worse economically than those with less natural mineral wealth.⁹ Some theorists who subscribe to the resource curse say it is also coupled with a “political curse,” or the propensity for resource-rich states to have democratic deficits.¹⁰ A related school of thought holds that oil-exporters also tend to have an increased likelihood of civil wars as factions vie to control oil fields. Although a still evolving school of thought, the third perspective on oil politics deals with “disruptive technology”—what can be defined as a technology becoming widely used and “causing major change in ‘the accepted way of doing things’, including business models, processes, revenue streams, industry dynamics and consumer behaviour.”¹¹ One additional debate with relevance to oil politics is global warming and climate change. Most scientists investigating this issue

⁸ A partial list of prominent scholars (some deceased) who support peak oil theory include M. King Hubbert, Kenneth Deffeyes, Michael Simmons, Terry Lynn Karl, Michael Klare and Paul Roberts. Several influential businesspeople such as Sir Richard Branson and T. Boone Pickens have also been vocal in their support of this theory.

⁹ A partial list of prominent scholars who support the resource curse theory include Richard Auty, Mahmoud A. El-Gamal, Amy Myers Jaffe, Terry Lynn Karl, Macartan Humphreys, Michael L. Ross, Jeffrey Sachs, Joseph Steiglitz and Andrew Warner.

¹⁰ There is extensive literature on democratization theory, but in this study the democracy literature covered is narrowly focused on the intersection of oil politics and democratization.

¹¹ Gartner Technology, based in Australia, is a major information technology research and advisory company. See www.gartner.com.

have indicated that human activity, especially burning fossil fuels and the resulting carbon CO₂ emissions, contribute to global warming.¹² However, no global consensus or concerted effort has emerged about specific ways to combat this global problem systematically. The use of electric cars and renewable fuels is at a nascent stage, gas taxes slightly reduce oil consumption, and that is why it is somewhat premature to discuss the implications of environmental policies on oil politics. Once a global consensus emerges as to what concerted actions should be taken worldwide to combat global warming and climate change, these measures will have significant consequences for the way people live and use fossil fuels. As noted in Chapter I, there will then be greater opportunities for research on petrostates transitioning from heavy reliance on fossil fuel export and the impact of these policies on major oil importers transitioning to renewable energy use.

Before briefly examining three dominant schools of thought on oil politics and several perspectives in the failed states literature, it is useful to define and categorize petrostates, define political instability and offer an overview of how to characterize failing or failed states. Establishing working definitions or a frame of reference is useful when examining whether or not petrostates become unstable politically as oil prices fluctuate, and ultimately, whether or not these countries could become failing states.

Defining Terms and Concepts: Petrostates, Political Instability, Fragile and Failing States

¹² See the United Nations' Framework Convention on Climate Change (UNFCCC) at <http://unfccc.int/2860.php>.

While there is no precise definition of what constitutes a petrostate, in political science circles there have been attempts to characterize or define this term.¹³ Marshall Goldman, in his book *Petrostate: Putin, Power, and the New Russia*, writes about Russia's historic rise to power through its oil and natural gas resources and contends that the state has become an "energy superpower".¹⁴ In this historic case study, Goldman maps how Russia's global influence has followed its oil wealth and "As a result, Russia found itself not only with dollars and euros [Euros] but with political leverage that in many respects exceeded anything enjoyed in either the Czarist or Soviet eras."¹⁵ Although explicitly characterizing Russia as a petrostate, Goldman does not offer a working definition of this term; nor does he suggest whether or not Russia is an anomaly (in comparison to oil-rich nations) with regard to how it wields its energy clout. In *The Paradox of Plenty: Oil Booms and Petro-States*, Terry Lynn Karl, another political science scholar focused on oil politics, offers a comprehensive and comparative study of the political structure of several petrostates. Similarly to Goldman, Karl uses the case study method to build theory, particularly focusing on the political structure of Venezuela, and how oil-exporting affects the political decision-making processes and outcomes in the countries she examines. In the process of theorizing the capacity and

¹³ As the purpose of this study is fairly narrow, i.e. examining how oil revenues and oil price fluctuations impact the stability of petrostates, there is no discussion of how non-petroleum extractive industries impact state functioning, structure or stability. For a general discussion on this topic, see Terry Lynn Karl, *The Paradox of Plenty: Oil Booms and Petro-States* (Berkeley: University of California Press, 1997) Location: 654-64—693-701. For an overview of this topic and the major efforts to reform the extractive industries worldwide, see The Extractive Industries Transparency Initiative <http://eiti.org/node/1164> and Alexandra Gillies, "Reputational Concerns and the Emergence of Oil Sector Transparency as an International Norm," *International Studies Quarterly*, Vol. 54, No. 1, March 2010, pp. 103-126.

¹⁴ Marshall I. Goldman, *Petrostate: Putin, Power, and the New Russia* (New York: Oxford University Press, 2008, 2010) Location: 331-46.

¹⁵ Ibid. Location: 403-18.

inherent limitations of petrostates, Karl does not delineate the differences between less democratic countries like Venezuela and democratic oil-exporting states like Norway—a country which could be considered either a high-capacity oil exporting state, or a petrostate. In general, most definitions of petrostates have negative connotations or mainly characterize these states as being undemocratic and oil wealthy. However, without a clear conceptual demarcation of what constitutes a petrostate, some theorists could also consider democratic countries like Canada to be a petrostate.

In Andrew Nikiforuk's *Tar Sands: Dirty Oil and the Future of a Continent*, the author makes a unique case that even with its standing as a democratic nation, Canada is a petrostate. Nikiforuk argues that since Canada is increasingly relying on oil as a source of revenue and allowing accelerated environmental damage due to the promotion of its unconventional oil source, tar sands, found in the province of Alberta, Canada should be labeled a "petrostate".¹⁶ Pierre Sadik, a policy advisor at the David Suzuki Foundations concurs: "There are several milestones on a nation's path to earning the dubious moniker of petrostate...Canada may already be well down that road."¹⁷

Since there is no general consensus on how best to define petrostate, and the few definitions that exist seem inadequate or inapplicable across oil-producing countries, liberties are taken by this author to define and conceptualize a working definition of

¹⁶ Andrew Nikiforuk, *Tar Sands: Dirty Oil and the Future of a Continent* (Vancouver, BC, Canada: Greystone Books, 2008) pp. 1-5.

¹⁷ Pierre Sadik, "Heading off to Copenhagen Canada has many of the hallmarks of a petrostate" (Online) <http://www.davidsuzuki.org/blogs/panther-lounge/2010/01/heading-off-to-copenhagen-canada-has-many-of-the-hallmarks-of-a-petrostate/>, 4 Jan. 2010. See also Oremu, Will. "Saudi Arabia. Nigeria. Venezuela. Canada? Is our neighbor to the north becoming a jingoistic petro-state?" *Slate*. January 20, 2012, http://www.slate.com/articles/news_and_politics/politics/2012/01/canadian_tar_sands_is_our_neighbor_to_the_north_becoming_a_jingoistic_petro_state_single.html. (Accessed January 20, 2012).

petrostate.¹⁸ The hybrid definition used throughout this study is: Petrostates are states that produce two million or more barrels of oil per day and/or where oil rents¹⁹ are over 10% of GDP.²⁰ The second criterion in the definition suggests that the country is not economically diversified and depends heavily on oil revenues for its budget. The first part of the definition suggests a benchmark for the amount of oil production that is vital in the global energy market. This case can be made empirically as evidenced by the 2011 North Atlantic Treaty Alliance intervention in Libya, which curtailed Libya's approximately two million barrel per day pre-war oil production and resulted in global concern over how to offset this reduction in oil supplies. Admittedly, two million seems an arbitrary benchmark, but the action taken by the International Energy Agency (IEA) following the disruption of Libyan oil supplies reinforces the supposition that two million barrels per day taken off the global energy market is a consequential number. OPEC's spare capacity, was either withheld for political or other reasons, and was not able to offset the two million barrels per day taken off the global energy market. Hence, in June 2011, the IEA Executive Director, Nobuo Tanaka announced that "...the 28 IEA member countries have agreed to release 60 million barrels of oil in the coming month in response to the ongoing disruption of oil supplies from Libya. This supply disruption has been

¹⁸ The only online dictionary to define petrostate is Dictionary.com, which writes: "*derogatory* a small oil-rich country in which institutions are weak and wealth and power are concentrated in the hands of a few."

¹⁹ The World Bank definition of oil rents is "...the difference between the value of crude oil production at world prices and total costs of production." <http://data.worldbank.org/indicator/NY.GDP.PETR.RT.ZS>

²⁰ Other scholars have used *at least* 10% of net oil revenues to GDP to characterize petrostates. See Jeff Colgan's definition in "Oil and Revolutionary Regimes: A Toxic Mix," Paper prepared for the International Political Economy Society, Annual Meeting, Philadelphia, PA, November 2008, [online] http://ncgg.princeton.edu/IPES/2008/papers/F13_paper2.pdf See also Ryan Kennedy's unpublished dissertation, *Lifting the Curse: Distribution and Power in Petro-states*, [online] <http://etd.ohiolink.edu/send-pdf.cgi/Kennedy%20Ryan.pdf?osu1211481058>, 2008, p. 19, which also uses 10 percent of oil revenues to GDP to define a country as highly dependent on oil revenues.

underway for some time and its effect has become more pronounced as it has continued...Greater tightness in the oil market threatens to undermine the fragile global economic recovery.”²¹ In sum, any country with production of two million or more barrels of oil per day is a vital player in the global oil market, and hence can be labeled a petrostate.

The table below offers a classification of petrostates based on the definition’s two criteria. A Type I Petrostate, fulfills both criteria; a Type II Petrostate fulfills the second criterion, but not the first; and a Type III Petrostate fulfills the second criterion, but not the first. The countries included in the Type I Petrostate classification will be referenced throughout paper, and six of these nine countries are examined in greater detail in Chapter III and Chapter IV.²² The three typologies presented in Table 1 and Table 2 offer a framework for evaluating petrostates that is absent from the literature on petrostates.

²¹ International Energy Agency, “IEA makes 60 million barrels of oil available to market to offset Libyan disruption” http://www.iea.org/press/pressdetail.asp?PRESS_REL_ID=418, 23 June 2011.

²² Three of the Type I Petrostates were outliers and excluded from the study: The United Arab Emirates, Kuwait and Iraq. The United Arab Emirates and Kuwait were excluded since there were no search results, based on a NYT Archive search of four indicators that denote instability. Iraq was excluded from the study as it represents a unique case due to the US invasion in 2003, and is an outlier in terms of the data search results.

Table 2.1 Petrostate Criteria

Petrostate Criteria:	Type I	Type II	Type III
1) Oil production is over two million barrels per day.	YES	NO	YES
2) Oil rents* are over ten percent of GDP.	YES	YES	NO

*The source for oil rents data is the World Bank, World Development Indicators 2009.

Table 2.2. Petrostate Classification: Type I, Type II, Type III

TYPE I*	TYPE II	TYPE III
Saudi Arabia	Equatorial Guinea	United States
Russia	Congo, Rep.	China
Iran	Libya	Canada
United Arab Emirates**	Gabon	Mexico
Nigeria	Azerbaijan	Brazil
Kuwait**	Angola	Norway
Iraq**	Chad	
Venezuela	Oman	
Algeria	Kazakhstan	
	Yemen, Rep.	
	Turkmenistan	
	Bahrain	
	Sudan	
	Ecuador	
	Qatar	
	Syrian Arab Republic	
	Trinidad and Tobago	

* This is the petrostate type primarily referred to and examined throughout the dissertation.

** The United Arab Emirates, Kuwait and Iraq were outliers and excluded from the study. The United Arab Emirates and Kuwait produced very few search results, based on a NYT Archive search using the Political Instability Indicators. Iraq, following the US invasion of Iraq and subsequent sectarian strife, resulted in high levels of terrorism and an extremely high numbers of articles based on the NYT Archive search using the Political Instability Indicators.

The second term that should be defined early on is “political instability,” which is relevant to this study in particular and failed states discourse in general. One of the simplest definitions of political instability presented by Nouriel Roubini et. al. is “a government with a propensity to collapse.”²³ While this is a useful and general definition when considering governments (and in this case the study of petrostates governments) what is also necessary to consider is a state’s potential for collapse.

The most authoritative study to assess states’ likelihood for collapse, and conversely state stability, is The Fund for Peace in partnership with *Foreign Policy* magazine. The Fund for Peace uses twelve indicators to determine (on a spectrum of 1-10) how stable or unstable a state is. With regards to the most extreme condition, “state failure,” The Fund for Peace notes:

A state that is failing has several attributes. One of the most common is the loss of physical control of its territory or a monopoly on the legitimate use of force. Other attributes of state failure include the erosion of legitimate authority to make collective decisions, an inability to provide reasonable public services, and the inability to interact with other states as a full member of the international community.²⁴

Although The Fund for Peace provides distinct characterizations of a failed state, there is no consensus on a definition of a weak, fragile or failed state. In lieu of a precise definition, the characterization and classification developed by the Fund for Peace on fragile or failed states, will serve as reference throughout this study. Also, there should be a distinction made between a failing state, which generally refers to states with worrisome levels of a range of instability factors that may lead to collapse and a failed

²³ Alberto Alesina, Sule Ozler, Nouriel Roubini and Phillip Swagel, “Political Instability and Economic Growth,” NBER Working Paper #4173, September 1992, Abstract [second page].

²⁴ See The Fund for Peace’s definition at <http://www.fundforpeace.org/global/?q=fsi-faq#5>.

state. With the exception of Somalia, most analysts would rarely deem states failed, although failing states and failed states is sometimes used interchangeably in discourse.

Finally, with regards to political instability, the research methodology used in this study and the political instability indicators developed (Demonstrations and Riots, Civil Wars and Guerrilla Warfare, Coup D'états and Attempted Coup D'états, and Terrorism) are used to test political instability in the six petrostates. Having established a general frame of reference for definitions used throughout this study, the next section similarly sets out to provide a brief overview of dominant debates in oil politics that are referenced throughout the study.

The Peak Oil Camp

Peak oil can be summarized as the school of thought that argues that the rate of petroleum retrieval is diminishing globally and extracting oil is becoming increasingly difficult for geological and geopolitical reasons.²⁵ Moreover, this theory asserts that the key oil-producing nations have reached their peak levels of oil production and the current period of “easy oil” is over. The theory not only commands great fascination and concern in the oil industry but also heavily influences theoretical discourse on oil in academic, business and policy circles. Peak oil theory is also embraced by environmentalists who see the end of oil as another way to help transition the world to renewable energy sources. Nonetheless, this dominant school of thought has its

²⁵ The concept of peak oil is fairly clear, insofar as most experts agree that it signifies the end of easy oil or that oil extraction will become increasingly difficult as proven reserves are depleted. However, in some cases, discussion of peak oil also includes geopolitics, and more specifically, that the vast oil-rich territories that are now controlled by National Oil Companies create less access to oil extraction by private, non-state oil companies.

detractors. Steve LeVine presents a vivid summary of the way the peak oil camps are split: “When it comes to oil, people generally cluster in glass-half-full, and glass-half-empty groupings. The former are led by techno-optimists such as industry consultant Daniel Yergin who believe that, given a higher price, oilmen will always manage to extract more barrels from a given field. The latter fall somewhere under the rubric of peak-oilers, who believe that supply is already stretched thin, and that unless alternative fuels scale up fast, the world must prepare for a hand-to-hand struggle for resources.”²⁶

Historically, there have been periods when analysts of a particular commodity such as wood, coal or gas have asserted that the resource was nearly depleted. In these cases the forecasters were mistaken. However, in contrast to previous depletion theories, there are at least three reasons why peak oil theory has more permanence and debates persist. First, empirical evidence has shown that oil fields become depleted, irrespective of the newest technologies to increase oil retrieval. Secondly, the science of oil discovery, both from an engineering and geological perspective, has become cutting edge, due in large part to oil companies investing substantially to identify and assess new or potentially undiscovered oil reserves. Thirdly, global oil demand has been steadily increasing, due largely to the immense dependence that the internal combustion engine has created for all developed nations. The emerging middle-class in developing countries, and the desire for these citizens to have cars is widespread and bodes well for oil exporters. The subsequent increased demand for oil has become a popular notion since the “BRIC” countries, or Brazil, Russia, India and China are projected to account for

²⁶ Steve LeVine “The Weekly Wrap: October 7, 2011” *The Oil and Glory* [blog] <http://oilandglory.foreignpolicy.com/> [Accessed Dec. 1, 2011].

significant increases in energy use. The ability for oil exporters to meet the demands of oil consumers, both current and future ones, however, is a proposition that generates significant controversy and concern over this finite fossil fuel.

By most accounts, M. King Hubbert is the originator of the Peak Oil theory. In 1956, he announced that oil production in the US would peak in the 1970s. Although Hubbert's prediction (based on his scientific training) was initially received with skepticism, once his prediction proved true in the 1970s, he and his models gained legitimacy and acclaim.²⁷ Economist Mahmoud A. El-Gamal and oil expert Amy M. Jaffe succinctly present the application and resonance of Hubbert's Peak Oil model:

Around 1995, several analysts began applying Hubbert's method to world oil production, concluding that global oil production would peak relatively soon. These analysts argued that the majority of the world's oil production is concentrated in mature fields from which the extraction of additional supplies will be increasingly costly as mechanical or chemical aids are used to induce artificial (as opposed to natural) lift. As each older field peaks and produces a dwindling amount of oil, world production, according to Peak Oil theory, will drop to a point where it will no longer be economical to use oil.²⁸

Hubbert's Peak Oil theory has a wide following and is supported by one of the most prominent scholars in the field, and previously a geologist, Kenneth Deffeyes. Deffeyes, who is currently a professor at Princeton University, is an expert on Hubbert with whom he worked at Shell Corporation.²⁹ Deffeyes evaluated the Hubbert theory primarily from a technical and scientific perspective. In his 2006 book *Beyond Oil: The View from*

²⁷ Kenneth Deffeyes, *Hubbert's Peak: The Impending World Oil Shortage*. (Princeton, NJ: Princeton University Press, 2001) pp. 2-3.

²⁸ El-Gamal and Myers Jaffe, Location: 1498-1506.

²⁹ Deffeyes, pp. 2-3.

Hubbert's Peak Deffeyes acknowledged that alternative energy solutions could blunt the dire effects of peak oil and offered a more tempered view of peak oil.³⁰

Another influential supporter of the theory of peak oil was Matthew Simmons³¹ whose expertise and knowledge of Saudi Arabia resulted in one of the landmark studies of proven Saudi oil reserves. Simmons's thesis in his seminal book *Twilight in the Desert: The Coming Saudi Oil Shock* is "that technical challenges now being encountered in Saudi Arabia's mainstay oilfields preclude major production growth and even threaten steady, sustainable output at current levels..."³² In Simmons's extensively researched case study, he argues that Saudi Arabian oil fields are already in decline and writes, "By the mid-1970s the kingdom's giant and super-giant oilfields were already showing the first signs of normal aging and, perhaps, of damage caused by raising production so rapidly in response to soaring world demand."³³

Simmons's account and general writing is fundamentally technical and draws from his experience in the oil fields. His key point that oil production is already declining in Saudi Arabia in particular and the world in general is supported by oil industry insiders such as T. Boone Pickens and businesspeople such as Sir Richard Branson. This perspective is so influential in the business and oil industry that in the spring of 2010, the UK energy minister was forced to hold a summit to quell growing fears about peak oil—even before BP's Gulf Coast disaster.³⁴

³⁰ See chapters 4-9 on possible alternative energy solutions in Kenneth Deffeyes, *Beyond Oil: The View from Hubbert's Peak* (Princeton, NJ: Princeton University Press, 2006).

³¹ Matthew Simmons died August 8, 2010.

³² Simmons, Location 4274-76.

³³ Ibid. Location: 935-44.

³⁴ The Guardian, "Energy minister will hold summit to calm rising fears over peak oil" March 2010, <http://www.guardian.co.uk/business/2010/mar/21/peak-oil-summit>.

An influential offshoot of peak oil theory is the argument promulgated by Michael T. Klare that geopolitical conflict will be based on resource-related scarcity and become the global norm. Klare addresses how peak oil and energy security have converged—a sub-theme, which has also generated a body of literature onto itself. Klare’s influence was solidified when he wrote his influential *Blood and Oil*, which focuses on the treacherous oil culture and cost of oil dependence. Energy security and independence are themes that loom large in Klare’s work. Although Klare’s writings frequently revolves around the premise that oil scarcity will contribute to a new geopolitical contest fierce enough to strain relations amongst competing nations, and possibly even war, in later works he has included other resources in this proposition. Ultimately, however, he continues to privilege oil as the dominant point of contention. Klare’s perspective may be encapsulated in one key observation: “A world of rising powers and shrinking resources is destined to produce intense competition among an expanding group of energy-consuming nations for control over the planet’s remaining reserves of hydrocarbons and other key industrial materials.”³⁵

Deffeyes and Simmons previously worked in the oil industry, Klare is scholar and professor, and another theorist in the peak oil camp, Paul Roberts, has a background in journalism. Roberts became a peak oil proponent unwittingly by reporting on the SUV and environmental issues in the 1990s; this reporting became the springboard for his fascination with energy issues. In some respects, Roberts work overlaps with Klare’s to the extent that Roberts also evaluates the power and geopolitical relations embedded in energy sources and by surveying the various countries that are endowed with oil. He

³⁵ Michael T. Klare, *Rising Powers, Shrinking Planet* (New York: Holt Paperbacks, 2008) p. 7.

asserts boldly: “Energy has become the currency of political and economic power, the determinant of the hierarchy of nations...Access to energy has thus emerged as the overriding imperative of the twenty-first century. It is a guiding geopolitical principle for all governments, and a largely unchallenged heuristic for a global energy industry whose success is based entirely on its ability to find, produce, and distribute even-larger volumes of coal, oil, and natural gas, and their most common by-product, electricity.”³⁶

In addition, Roberts main investigation revolves around key questions related to the geopolitical nature of energy security: “Are the current world powers—most of whom are the biggest consumers of oil—still likely to be the leaders in this brave new world? Or might a new energy order breed a new political order as well?”³⁷

The Peak Oil Skeptics

Robin Mills, Michael Lynch, Peter Jackson at Cambridge Energy Research Associates (CERA) and Daniel Yergin, the founder of CERA, argue against peak oil theory. These critics elaborate key rebuttals in the debate such as flaws in the calculation of proven reserves and other geologically-related inaccuracies; pricing and oil demand are not always a clear trajectory; the potential for new extraction technologies such as deep-water drilling is underestimated; and the use of unconventional energy sources (shale, tar sands, etc.) is not adequately factored into peak oil projections. Journalist and oil expert, Tom Bower, summarizes several weaknesses in peak oil theory:

By 2003, both Hubbert’s and Campbell’s methodologies were proved to be flawed. Hubbert’s original forecast of production in America was based upon

³⁶ Paul Roberts, *The End of Oil*. (Boston and New York: Houghton Mifflin Company, 2004) p. 6.

³⁷ *Ibid.*, p. 9.

data compiled over decades, but new technology and prices challenged its accuracy. While America's 'proven' reserves in 1991 were 24.7 billion barrels, the total reserves, including tar oil, oil shale and other condensates, were estimated in 2003 to be 204 billion barrels, and some experts calculated that new technology could increase the ultimate recovery to between 263 billion and 368 billion barrels; and that figure did not include an estimated 180 billion barrels of oil in the Canadian tar sands.³⁸

Although Bower has not firmly positioned himself in the peak oil or peak oil skeptics camp, his assessment throughout his book *Oil: Money, Politics, and Power in the 21st Century* is a tempered view of Peak Oil and an acceptance of the potential for increased oil reserves.

Another compelling critique of the peak oil theory is that outlined by Robin M. Mills, a British citizen and petroleum geologist by trade. Mills points to various misunderstandings about the oil industry—particularly upstream and downstream production, and how the perception of peak oil has also skewed pricing and hyped this theory. Mills counters peak oil theory with four basic points that are substantiated with his geological training and experience in the oil industry: 1) Supply of oil is much larger than projected; 2) It is an effort in vain to secure oil supplies due to costs; 3) Oil is not the only source of energy—other sources exist—and the reduction of global consumption of oil is possible; and 4) Solutions exist to transition away from fossil fuels.³⁹ Mills acknowledges that oil is a finite resource but also hints that the overzealous belief that oil supplies will end in the near future is exaggerated. Furthermore, Robin M. Wells argues in Chapter 4 of his book *The Myth of the Oil Crisis: Overcoming the Challenges of*

³⁸ Tom Bower, *Oil: Money, Politics, and Power in the 21st Century* (New York: Grand Central Publishing) p. 272.

³⁹ Robin M. Mills, *The Myth of the Oil Crisis: Overcoming the Challenges of Depletion, Geopolitics, and Global Warming* (Westport, CT: Praeger, 2008), Location: 112-130.

Depletion, Geopolitics, and Global Warming that peak oil theorists “...use the ‘Hubbert Curve’ to predict future oil production, but this method has theoretical flaws, does not take account of future industry dynamics such as changes in price, geopolitics, investments, and technology, and makes demonstrably false forecasts. Use of different models makes very different predictions of peak date.”⁴⁰

Another vocal critic of Peak Oil is Michael Lynch, an energy consultant and former director for Asian energy and security at the Center for International Studies at the Massachusetts Institute of Technology. In a 2009, New York Times Op-Ed piece, Lynch presented his critique of peak oil in general and leveled several criticisms at Paul Roberts. Lynch writes: “...Roberts recently expressed shock to discover that the liquid coming out of the Ghawar Field in Saudi Arabia, the world’s largest known deposit, is around 35 percent water and rising. But this is hardly a concern — the buildup is caused by the Saudis pumping seawater into the field to keep pressure up and make extraction easier. The global average for water in oil field yields is estimated to be as high as 75 percent.”⁴¹ Lynch also took aim, in the same article, at Matthew Simmons about his “fuzzy logic” when estimating reservoir holdings.⁴²

Finally, the strongest attack on Peak Oil comes from Cambridge Energy Research Associates (CERA) with its 2006 report entitled “Why the Peak Oil Theory Falls Down: Myths, Legends, and the Future of Oil Resources.” Notably, CERA is run by Daniel Yergin, and commands great respect amongst oil industry insiders. Authored by Peter

⁴⁰ Ibid: Location: 170-81.

⁴¹ Michael Lynch, “‘Peak Oil’ Is a Waste of Energy,” *New York Times* [Online] http://www.nytimes.com/2009/08/25/opinion/25lynch.html?_r=2&pagewanted=1&emc=eta1, August 24, 2009.

⁴² Ibid.

Jackson, the synopsis of the findings said, “Regarding the "peak oil" theory, CERA’s view, based on two decades of systematic research, including CERA databases and those of IHS (the largest proprietary databases in the world on oil production and resources), sees no evidence of a peak in oil production before 2030, with global production eventually following an undulating plateau for one or more decades before declining slowly. Aboveground factors will play the major role in dictating the end of the age of oil.”⁴³ The report has had repercussions and fueled further debate.

What is crucial when evaluating perspectives and literature on peak oil, for and against, is motivation. For example, some environmentalists may feign support of peak oil theory since it encourages alternative energy development and a move away from fossil fuels. The alternative energy industry would also provide compelling reasons to support peak oil, since faith in this position would mean an expedited transition to alternative energy. Even more cynically, oil industry insiders may push the theory of peak oil to drive up prices, or, conversely as argued by peak oil theorist, Colin Campbell, the state of the oil industry may be so dire that information about proven reserves is not forthcoming—in other words, peak oil is already upon us but the oil industry is hiding this fact. Biases can easily creep in due to vested interests of a business or political nature. For example, the motivation was clear when a critique of peak oil was leveled by Khalid F. Al-Falih, president and CEO of Saudi Aramco at an August 10, 2010 Oxford Energy Forum conference when he presented his view that “...geological evidence proved that the energy-hungry world can still bank on between 6 and 8 trillion barrels of

⁴³Peter Jackson, CERA, *Why the Peak Oil Theory Falls Down: Myths, Legends, and the Future of Oil Resources* <http://www.cera.com/aspx/cda/client/report/reportpreview.aspx?CID=8437&KID=> November 10, 2006. Accessed August 2, 2010.

conventional oil and natural gas liquids and about 7 trillion barrels of unconventional oil,” which is a position based on a political motivation.⁴⁴ The CEO may find statistics that can conform to his position and promote the continued use and faith in Saudi oil fields—the same can be said about the other side. Eventually, however, peak oil will become something that can or cannot be empirically proven. Until that day, the debate will rage on, and both sides will have entrenched views.

The Resource Curse: Advocates and Skeptics

The resource curse is generally a condition in which a country that relies heavily on one or more types of resources for its budget revenues has negative economic outcomes. This phenomenon is sometimes also called the “curse of oil,” or “the paradox of plenty”. A few of the possible negative economic outcomes of the resource curse include slower growth, the Dutch Disease⁴⁵ and the lack of a tax base. In addition to the economic aspects of the resource curse, it is also associated with negative political outcomes, such as more authoritarian political systems, greater than average (as compared to other countries) corruption and governments or societies that are prone to war. The last effect of the resource curse—that states may be more prone to war—has been a subject of increased research and coincides in part with this study. One important

⁴⁴ Jijo Jacob, “Oil reserves are plentiful, says Aramco chief” *International Business Times* [Online] <http://www.ibtimes.com/articles/42230/20100810/petroleum-oil-energy-reserves-peak-oil-aramco-reserves-oil-futures.htm> August 10, 2010. Accessed, August 11, 2010.

⁴⁵ Michael Bruno and Jeffrey Sachs describe the condition of Dutch Disease in their paper “Energy and Resource Allocation: A Dynamic Model of the ‘Dutch Disease,’” *Review of Economic Studies* 1982, XLIX, p. 845. Bruno and Sachs write “The wealth increases following higher oil prices of resource discoveries have a systematic impact on the sectoral allocation of resources. Booming demand, caused by higher wealth, leads to a shift of an economy’s productive resources from tradeable-goods sectors. The squeeze of the tradeables sector in this context has become known as the ‘Dutch [D]disease.”

point that should be made clear at the onset is that countries that have an abundance of one or more natural resources, but are diversified economically, do not necessarily have negative economic outcomes.

The resource curse, much like peak oil, is a dominant perspective in academia, development organizations and international organizations. Unlike the typical binary opposition in the peak oil debate, there are more nuanced views when discussing the resource curse. Four dominant perspectives in this debate include: 1) heavy reliance on one or more resources in a country predisposes it to negative economic outcomes; 2) a country's abundance of one or more resources is not inherently problematic, but in the long-term, this resource endowment does hamper a country's economic development; 3) along with negative economic outcomes, a country that succumbs to the resource curse also tends to have an undemocratic system, high-level of corruption and/or a propensity for war; and finally, 4) resource-endowed countries may have positive economic outcomes and are not necessarily prone to above average levels of corruption or war. Jeffrey Colgan, Paul Collier, Mahmoud A. El-Gamal, Terry Lynn Karl, Macartan Humphreys, Amy Meyers Jaffe, Michael Ross, Jeffrey Sachs, Joseph Stiglitz and Andrew Warner are some of the proponents of the resource curse. Instead, some of the authors who question the resource curse, see some benefit to resource endowment, or strike a neutral tone are Matthias Basedau, Charles Kenny, Jann Lay, Daniel Lederman and William F. Maloney.

Resource Curse Advocates

According to Richard Auty, who coined the term resource curse “...resource-rich countries fail to benefit from a favourable endowment, [and] they may actually perform worse than less well-endowed countries. This counterintuitive outcome is the basis of the resource curse thesis.”⁴⁶ Two of the most notable proponents of the resource curse theory are Jeffrey Sachs and Andrew Warner. Their influential paper, *Natural Resource Abundance and Economic Growth*, written in October 1995, tracked 95 countries over a 20 year period and found that those states that were less endowed with natural resources, surprisingly, performed better economically.⁴⁷ With regards to oil, the likely reason for negative economic outcomes is that the entrenched interests of petrostate bureaucrats and actors involved in the oil industry create a symbiotic relationship that stifles normal economic development. The elite’s oil interests operate outside the norms of a free-market system and the main goal is the perpetuation of this oil-dominant system. Furthermore, this interaction between groups involved in the oil industry and the state creates an “oil culture” of norms and rules, specifically:

...cooperation is based on widespread political rent-seeking behavior [and] is its Achilles’ heel, as is manifested in the predictable roles, habits, and behaviors of organized interests, firms, and individuals. Their share of oil rents depends on chasing after state patronage, high tariff barriers, cheap imports, profitable contracts, and subsidies. These goals are powerful incentives for them to form tight links with politicians and bureaucrats in order to offer favors for benefits received. Such rent seeking, of course, is a classic formula for corruption, which in itself raises new demands. It is also the antithesis of the efficient market mechanisms and productive economic decision-making necessary to create a self-sustaining productive base separate from petroleum. This unfortunate rent-

⁴⁶ Richard M. Auty, *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. (London: Routledge, 1993) p. 1.

⁴⁷ Jeffrey D. Sachs and Andrew M. Warner, *Natural Resource Abundance and Economic Growth* http://www.cid.harvard.edu/ciddata/warner_files/natresf5.pdf November 1997, p. 1.

seeking dynamic between private interests and the state is self-perpetuating, at least as long as oil rents continue to flow.⁴⁸

The proposition that natural resources are a boon for countries has held sway until recent decades. Development organizations, economists and policy makers saw oil and other natural resources as an advantage for countries' development and modernization; resource wealth would enable the transition from developing to developed countries.⁴⁹ Since the increase in research on this topic beginning in the 1980s and especially in the 1990s, there has been a tempered view of the potential benefits of resource wealth. Most skepticism arises about the long-term potential for resource-rich countries, and increasingly, there have been calls for diversification or development of other sectors in order to escape the resource curse. The development community has not outright discounted the potential for resource wealth to aid countries, but there is greater caution about unexpected consequences from resource wealth such as governance issues.

The combination of lack of government accountability and the resource curse has frequently been viewed through the prism of the Middle East's oil wealth. Until the Arab Spring, the region was frequently viewed as suffering from the resource curse in an economic and political sense. Yet with the exception of petrostates like Libya and Syria, no other substantially oil rich state has faced a threat to its survival. It would appear that there have been some economic successes in the Middle East, but as a whole there has been a poor record of government investment strategies and diversification. El-Gamal

⁴⁸ Karl, Location: 796-806.

⁴⁹ Andrew Rosser, "Research Summary 21-The Political Economy of the Resource Curse: A Literature Survey," (UK: Centre for the Future State and Institute of Development Studies: 2006) [pdf file], p.1.

and Myers point to how oil wealth has lead to few positive economic outcomes in the region:

Despite three decades of intermittent oil wealth, the resource-rich Middle-East countries have failed to invest in relevant human capital or to develop a diversified economic base. Those countries have thus been the consummate contemporary examples of the ‘resource curse’ at work. The resource curse for oil-exporting countries emanates in part from the political economy of oil rents, which discourages investment in sectors conducive for long-term growth, increases patterns of corruption and patronage, and provides irresistible incentives to consume beyond long-term means and invest in rent-seeking ‘white-elephant’ projects.⁵⁰

The deleterious effects of resource abundance can extend beyond economics—not only does an economy stagnate, but authoritarian regimes are cemented due to high levels of resource wealth. Mahmoud El-Gamal, Amy Myers Jaffe, Macartan Humphreys, Terry Lynn Karl, Michael Ross, Jeffrey Sachs, Joseph Stiglitz and Andrew Warner have all made similar claims about how governance in general and the democratic potential of a country is negatively affected by the abundance of resource wealth. One major democracy-related resource curse study was conducted by Ross in his paper “Does Oil Hinder Democracy?” Ross showed that states with oil abundance and a high reliance on oil exports were less democratic.⁵¹ This phenomenon was not confined to the Middle East. In *Escaping the Resource Curse*, Humphreys, Sachs and Stiglitz suggest:

Countries rich in natural resources—in particular, in oil and gas—are less likely to have democratic political systems. Specifically, nondemocratic oil states are less likely to become democratic than states that do not export oil. This relationship has been found in cross-national studies that relate the discovery of oil in a given period to democratic changes over the coming decades (Tsui 2005). In effect, access to oil wealth can allow leaders to successfully repress or co-opt

⁵⁰ Mahmoud A. El-Gamal and Amy Myers Jaffe, *Oil, Dollars, Debt, and Crises: The Global Curse of Black Gold*, (New York: Cambridge University Press, 2010), Location: 309-16.

⁵¹ See Michael L. Ross, “Does Oil Hinder Democracy?” *World Politics*, Vol.53, No. 3., April 2001.

their opposition, and thus avoid having to relinquish power through electoral competition.⁵²

Throughout this study, the question posed is whether vast oil wealth in the hands of the elite allows the preservation of power by co-opting segments of the population and repressing the opposition. An extension of this oil power is that countries are able to not only repress their population at home but are able to conduct war.

This leads to the final argument promulgated by resource curse advocates and one that has relevance for this paper. Do resource curse affected countries also suffer from increased violence and war? In the opinion of Jeffrey Colgan and Paul Collier the answer is yes.⁵³ Colgan suggests that while the perception that petrostates may be “the targets of conquest” over their oil wealth, they may in fact be the “instigators” of war.⁵⁴ Colgan uses statistical analysis to suggest that petrostates are also predisposed to international conflicts. Collier, instead, researches civil wars, and one important aspect of Collier’s research is determining what makes a country predisposed to conflict. Resource wealth does increase the chances of resource wealth. According to Collier,

Surprisingly, the most important risk factors were three economic characteristics: the level of per capita income, its rate of growth, and its structure. Doubling the level of incomes halves the risk of conflict. A percentage point on the growth rate reduces the risk by around a percentage point. Reducing dependence upon natural resource exports powerfully reduces the risk of conflict.⁵⁵

⁵² Macartan Humphreys, Jeffrey Sachs, Joseph E. Stiglitz, *Escaping the Resource Curse* (New York: Columbia University Press, 2007), p. 12.

⁵³ Michael Klare may be included in this group, although his views also coincide with peak oil theorists.

⁵⁴ Jeff Colgan, “Oil and resource-backed aggression,” *Energy Policy*, Vol. 39, Issue 3, March 2011, p. 1.

⁵⁵ Paul Collier, “Development and Conflict,” Centre for the Study of African Economies, Department of Economics, Oxford University, (online) www.un.org/esa/documents/Development.and.Conflict2.pdf, October 1, 2004., p. 1.

The Resource Curse Skeptics

A variety of scholars and policy analysts have sought to counter the idea that natural resource abundance, and oil in particular, leads to fatalistic economic outcomes. There are fewer critics, however, that suggest that resource rich countries do not experience some negative political outcomes or problems in governance. Skeptics have mainly sought to counter the economic arguments that the resource curse leads to negative economic outcomes and that resource endowed countries are more predisposed to conflicts.

Two of the most authoritative critics of the resource curse are Daniel Lederman and William F. Maloney who take issue with the prevailing economic view on resources: “...we find ourselves in a time when the conventional wisdom again postulates that natural resources are a curse for development, contradicting the common-sense view that riches are riches, nonetheless.”⁵⁶ Lederman and Maloney conclude that “...overall, natural resource wealth is good for development...studies show that natural resource wealth becomes a real development asset when coupled with investments in skills and technological capacities and with good macroeconomic institutions and management.”⁵⁷ Admittedly, for resource rich states to achieve the second part of Lederman and Maloney’s condition, there need to be best practices of economic diversification and, for example, removal of domestic natural resource subsidies.

⁵⁶ Daniel Lederman and William F. Maloney. eds. *Natural Resources: Neither Curse nor Destiny*, (Paolo Alto, CA and Washington DC: Co-publication of Stanford University and the World Bank, 2007.) Location: 350-70.

⁵⁷ Lederman and Malone, Location: 206-22.

Charles Kenney has a similar view, bluntly saying, “Blaming oil wealth for poverty, though, is like blaming treasure for the existence of pirates.”⁵⁸ Kenney takes issue with Sachs and Warner’s point that a high volume of resource exports leads to the Dutch Disease and the resource curse. Kenney argues “Sachs and Warner highlighted Dutch disease and its knock-on effects as the likely cause [of the resource curse]. But other researchers looking at the same data argued that the link might be through empowering kleptocratic leaders with resource rents or the destabilizing political impact of easy money. In a matter of a few years, resource exports were charged with a host of ill effects --not least, low education spending, unstable government, civil war, corruption, and poor governance.”⁵⁹

Regarding the argument that resource-endowed states suffer from the resource curse and greater conflict, Kenney notes that a study by Swiss economist Christa Brunnschweiler and Erwin Bulte “...found that countries with more natural resource wealth were *less* likely to descend into civil war in the first place. The same result held whether they were using a broad measure of resource wealth or focused only on minerals or oil.”⁶⁰

Finally, Mattias Basedau and Jann Lay present an additional counterpoint to Colgan’s and Collier’s view that countries affected by the resource curse are prone to violence, civil war and international conflict. The two scholars posit that the

⁵⁸ Charles Kenney, “What Resource Curse?” *Foreign Policy*, December 10, 2010, http://www.foreignpolicy.com/articles/2010/12/06/what_resource_curse?page=0,1.

⁵⁹ Ibid.

⁶⁰ Kenney.

conventional wisdom that is emerging about the resource curse should be reconsidered.

Baseadau and Lay argue:

A more radical theoretical challenge to the ‘resource curse’ can be derived from the theory of the rentier state. Rentier state theory identifies economic stagnation, corruption and authoritarianism as features inherent to the rentier political economy. However, it also states—contrarily to the resource curse and widely untested—that governments use abundant resources to buy off opposition or suppress armed rebellion, thereby contributing to political stability and preventing armed conflict.⁶¹

The view expressed and hypothesis tested in this study falls closely in line with Basedau and Lay’s view that petrostates can repress or co-opt opposition movements and retain political stability. And while there can be no clear consensus on the effects of the resource curse, there may be an eventual convergence of thought. Many of the scholars on this subject either suggested or admitted to resource-rich countries having stagnating or worsening political outcomes. The key points of divergence were in terms of the economic outcomes and whether or not the resource curse also increased the potential for conflict. Eventually, there may be a greater reconciliation of these perspectives.

The Potential Impact of Disruptive Technology

The literature on disruptive technology is not widespread, in part because considering the impact of disruptive technologies is a new phenomenon and does not fall precisely into any single academic discipline. The impact of disruptive technologies is more frequently examined, in the case of social media, with the example of social media

⁶¹ Mattias Basedau and Jann Lay, “Resource Cures or Rentier Peace? The Ambiguous Effects of Oil Wealth and Oil Dependence on Violent Conflict,” *Journal of Peace Research*, Vol. 46, No. 6, September 23, 2009.

facilitating the 2010 Arab Spring uprisings. Social media such as Facebook and Twitter could be classified as disruptive technologies that, simply put, have changed fundamental aspects of how people communicate.

The relevance of disruptive technology to oil-related issues is noteworthy for several reasons. When applied to oil retrieval, a disruptive technology can incentivize consumers to use a renewable or alternative fuel source such as an electric car, which ultimately reduces demand for oil. Or, a disruptive technology can also increase oil production through innovations in drilling that increase oil retrieval. In the case of the latter, the new extraction technologies such as deepwater and ultra-deepwater drilling, horizontal drilling, hydraulic fracturing (specifically when applied to shale oil) and the processing of tar sands or heavy oils—all contribute to extending the use of oil.⁶² Conversely, a major rollout of electric cars, for example, may alter the global demand for oil. “An additional 2.5 million barrels a day could be eliminated by 2050 with policies to make electric cars 20 percent of the American car fleet, the Rice [University] researchers say.”⁶³ The implementation of disruptive technologies can change the trajectory of higher or lower oil uses, or energy practices that are more or less efficient. In the recent case of higher US fuel efficiency standards, according to Amy Myers Jaffe, an associate director of the Rice University Energy Program “...Rice researchers expect a drop of 4.3 million barrels a day in the use of oil by 2025 simply through improved fuel efficiency of vehicles mandated by Congress. That equals more than a third of current imports.”⁶⁴

⁶² See the Appendix for a description of these petroleum-related innovations.

⁶³ Clifford Krauss, “Can We Do Without the Mideast?” *New York Times*, March 31, 2011, p. F6.

⁶⁴ *Ibid.*

Theorist Vijay V. Vaitheeswaran has been particularly vocal in asserting that factors such as volatile oil prices or environmental concerns will incentivize a reduction or outright elimination of fossil fuels use. Vaitheeswaran has placed significant faith in market forces and technology, particularly from a business and automobile industry-specific perspective. Vaitheeswaran describes in *Zoom: the Global Race to Fuel the Car of the Future* how innovation in the auto industry will dramatically lessen the need for oil. More generally, in a piece in *Foreign Policy*,⁶⁵ Vaitheeswaran emphasizes business and innovation as a catalyst to lessen the global addiction to oil, in particular suggesting that the electric car will have a disruptive effect on the existing paradigm of oil consumption.

Although in the short-term disruptive technologies will afford oil companies the ability to extract more oil, or retrieve oil from unconventional means such as tar sands or ultra-deep water drilling, the likelihood in the medium- to long-term is a reduction of oil use. How this reduction occurs—peak oil, disruptive technologies, conservation, or additional global recessions—oil industry experts acknowledge that there will be a waning of oil demand. Arguably the most disastrous prognostication for petrostates about oil demand comes from a recently released report by Exxon. In a sharp analysis, energy expert Steve LeVine writes:

...a big part of the global economy is undergoing a tectonic shift, one that will become apparent in just a decade and a half, according to Exxon's [outlook for the year 2040](#). Among the transformations: Energy demand in the gluttonous U.S. and China will either flatten out or decline. Consequently, global energy consumption as a whole will continue to surge through 2025, but then rise by just 9 percent in the 15-year period from 2025 through 2040, according to the oil giant. Extrapolating into geopolitics, today's oil-producing states appear likely to face

⁶⁵ Vijay V. Vaitheeswaran, "Oil" *Foreign Policy*, November/December 2007, pp. 24-30.

gradually declining relative influence in the second half of the century, while the stature of natural gas giants will grow.⁶⁶

Disruptive technologies may arguably impact oil industries more profoundly than incremental depletion of oil due to peak oil, deterioration of a nation's economy due to the resource curse or authoritarian tendencies by petrostate governments.

The debates presented: peak oil, the resource curse and the impact of disruptive technologies loom large in oil politics. Related schools of thought have grown out of these debates, such as the view that modern conflict will emanate from resource scarcity. Also, there has been a substantial body of literature in democratization theory exploring the adverse relation between oil-rich countries and democratic governance and outcomes. Environmental concerns continue to influence the discussion on any fossil fuel use, and while not covered in this chapter, the discussion of how the environmental movement may impact petrostates is notable. Failing states have proven to be an intractable global problem to solve, and hence the next section suggests that there should be a proactive system to identify the warning signs of state failure, particularly as it relates in petrostates.

Failing States and Petrostates

The global system grapples with how to prevent and resuscitate failing states. If states are fragile or failing,⁶⁷ there are few global mechanisms to prevent, revive or

⁶⁶ Steve LeVine "The Weekly Wrap: Dec. 9, 2011" <http://oilandglory.foreignpolicy.com/> [accessed Dec. 12, 2011].

restore order to them, even if the UN is the key organization charged with securing peace and stability. Complicating any action is that there is no generally accepted definition of failed states, whereas a consensus on a definition may allow intervention or scaled up aid remedies if a country were deemed failed. Previously, there was difficulty in proactively assessing if a state was fragile or failing, but the indicators developed by the Global Fund for Peace in partnership with *Foreign Policy* magazine have partially solved this conundrum. To some extent, policy makers are beginning to review these indicators and the failing state index.⁶⁸ However, even with a set of indicators to gauge a country's instability, there are still a myriad of challenges to effectively address this growing phenomenon.

The policy prescriptions that the global community can implement to prop up failing states are usually country-specific and require a multifaceted approach. And although development aid was thought to be an across-the-board means to remedy or prevent failing states, this has empirically shown to be only occasionally effective. It is unclear what can be done to stabilize states, or if countries organically improve. Some states' stability may be restored naturally, but proactive monitoring and measures to prevent states from failing remains an optimal choice.

The indicators that the Global Fund uses are far reaching and have a great utility for assessing states' fragility, yet the indicators do not account for issues of tremendous

⁶⁷ Generally speaking, the terms fragile and weak states will be used interchangeably to refer to states in the Failed States Index "Warning" group (in orange) and listed as 14-124. Instead, the terms failing or failed states will be used to refer to those countries in the Failed States Index, "Alert" group (in red) and listed as 1-13. See www.fundforpeace.org.

⁶⁸ The Global Fund for Peace claims, "Perhaps the most telling barometer of its [The Failed States Index] credibility is the steady increase in the number of governments that respond to it, by seeking ways to improve their standing in the Failed States Index or using it as a component in making decisions related to foreign assistance." <http://www.fundforpeace.org/global/?q=program-fsi>.

global importance that are emerging such as water scarcity, climate change and resource depletion, or specifically overreliance on one commodity that could eventually lead to the collapse of an economy. Diagnosing failed states is clearly an enormous undertaking, but within this warning system there should be special cases. This study does have a more specific and modest goal: to suggest, as will be done more elaborately in Chapter IV, that petrostates are worthy of receiving a special category that indicates they are prone to becoming failing, or more precisely, fragile states. As outlined earlier, the prospect that petrostates will lose their key revenue source in the medium-to long-term due to a lack of economic diversification, means that James Piazza's term, "candidates for failure" may be apt.⁶⁹ Compounding this eventuality would be the problem that petrostate societies are often dependent on heavy subsidies for public services,⁷⁰ which makes these countries particularly vulnerable as noted by the Global Fund's indicator. Robert Rotberg's premise is that state capacity is important and that states essential purpose is to "provide a decentralized method of delivering political (public) goods to persons living within designated parameters (border)."⁷¹

There are no studies that have looked systematically at petrostates and their propensity for state failure; however, if global oil prices drop precipitously, destabilization in petrostates may occur as austerity measures are implemented, the

⁶⁹ James A. Piazza. "Incubators of Terror: Do Failed and Failing States Promote Transnational Terrorism?" *International Studies Quarterly*, Vol. 52, No. 3, September 2008, p. 471.

⁷⁰ More discussion on how public funds and subsidies are distributed in the Type I Petrostates will be discussed in Chapter IV.

⁷¹ Robert I. Rotberg, *When States Fail: Causes and Consequences*, (Princeton, NJ: Princeton University Press, 2004) Location: 89-104--104-21.

government is weakened and populations become inclined to push for greater political reforms.

Addressing and conceptualizing the outgrowth of failed states began systematically after the collapse of the Soviet Union. Only then, with the acceleration of failing states and the inability to remedy these situations through massive aid, a resolution of conflict, or an international presence, was there a greater appreciation of the complexity of how states become fragile or failed. The literature and research on failing states can often be situated in phases: studies that look at initially preventing states from failing and examining why states become weak; further along, once states have collapsed, an examination of the negative repercussions of failing states, and/or an assessment of remedies to fix fragile or failing. Scholars that subscribe to the post-internationalist school, such as Yale Ferguson view failed states as a natural outgrowth of the global system: “Many of the world’s states find it difficult to cope; some are in a condition of outright civil war and/or near collapse; and a few have actually ‘failed; to such a drastic extent that they have ceased to exist except on increasingly deceptive maps.”⁷² Other scholars are concerned with assessing future global trends that will have calamitous results for states and how to prevent these countries from becoming failed states. Within the topic of failed states, there are several dominant theoretical perspectives. One approach looks at failed states through the international security prism and views the outgrowth of failed states as not only a humanitarian catastrophe, but also creating fertile

⁷² Yale H. Ferguson and Richard W. Mansbach, *Remapping Global Politics: History’s Revenge and Future Shock* (Cambridge: Cambridge University Press: 2004). p. 31

ground for transnational terrorism as these ungovernable regions create vacuums of authority.⁷³

The overview here focuses on only two aspects in the failed state literature that has direct relevance to petrostates: how failed states' security issues resonant in the global community and how scholars have assessed trends that will contribute to an increasing number of failed states.

It should be noted that there is no consensus as to whether or not high oil rents create stability in a country. Scholars such as Paul Collier and his colleagues at the World Bank have researched how states with oil reserves are more prone to political instability. For example, "Statistically, secessionist rebellions are considerably more likely if the country has valuable natural resources, with oil being particularly potent...Examples of this sort of secessionist movement are Cabinda in Angola, Katanga in the then Congo, Aceh and West Papua in Indonesia, and Biafra in Nigeria..."⁷⁴ In marked contrast, Terry Lynn Karl argues there can be "...periods of regime stability that oil exploration can foster, regardless of the type of regime in places. Because oil revenues can mitigate the extreme polarization found in situations of scarcity by removing the violent zero-sum conflicts that often characterize agrarian societies, oil can produce a stable form of politics that regularizes relations among competing interests and perpetuates regimes in power."⁷⁵

⁷³ Robert Rotberg and James A. Piazza are two notable failed states researchers that subscribe to this perspective.

⁷⁴ Paul Collier, V.L. Elliot, Havard Hegre, Anke Hoeffler, Marta Reynal-Querol and Nicholas Sambanis, *Breaking the Conflict Trap: Civil War and Development Policy*. Washington D.C.: The International Bank for Reconstruction and Development/The World Bank, 2003, p. 60.

⁷⁵ Karl, Location: 808-17.

Heavy reliance on oil revenues in the face of an uncertain oil future may lead to petrostates becoming politically unstable. As discussed in this chapter, there are various destabilizing prospects that a petrostate may face including peak oil, the resource curse, the advent of a disruptive technology and although not discussed in this chapter, environmental concerns that could mean a paradigm shift for fossil fuels usage. Some scholars have already assessed the climate and oil nexus and see petrostates, without using the moniker of failing states, as part of an increasingly fragile group of states.

Lester Brown contends:

...the world may be reaching peak water at more or less the same time that it hits peak oil...If we can phase out the use of oil quickly enough to stabilize climate, it will also facilitate an orderly, managed transition to a carbon-free renewable energy economy. Otherwise we face intensifying competition among countries for dwindling oil supplies and continued vulnerability to soaring oil prices. And with our recently developed capacity to convert grain into oil (that is, ethanol), the price of grain is now tied to that of oil. Rising oil prices means rising food prices.”⁷⁶

In the quest to remedy state failure, a poignant question is posed by Lester Brown:

“As the list of failing states grows longer each year, it raises a disturbing question: How many states must fail before our global civilization begins to unravel?”⁷⁷ Exacerbating the situation would be the additional challenges of energy *insecurity* due to failing petrostates. State failure across petrostates would have a deleterious effect on the global system, which is already struggling with failing states.

⁷⁶ Lester R. Brown. *World On the Edge: How to Prevent Environmental and Economic Collapse*, (New York & London: W.W. Norton & Company, 2011) Location: 326-43.

⁷⁷ Ibid. Location: 294-310.

Conclusion

The purpose of this literature review is three-fold: first, there is a need to provide context to the discussion by determining a working definition and classification of petrostates, along with defining other relevant terms. In particular, the definition and classification of petrostate presented fills a void in the existing literature on petrostates, which has no general definition, nor parameters to evaluate this subject. The second purpose is to review three salient debates on oil politics and to present, irrespective of which side of the debate a person upholds, possible impacts on the future of petrostates. The third goal is to build a bridge from oil wealth in petrostates, which that has legitimized and solidified petrostates, to explanations as to why petrostates are susceptible to becoming fragile or failing states. This third point seems tenuous, particularly since no substantial research has been done on the connection between petrostates and their potential to become failed states. However, this premise is based on the dominant oil theories presented: oil depletion, the resource curse, which hampers diversification, and disruptive technology, which could lead to the end of oil or an increased use of alternative, non-petrostate oil sources. Compounding this problem is the large expenditures that petrostates must maintain to appease populations and the military. What this study hopes to do, in part, is not only track how oil affects political and ultimate state stability in petrostates, but consider how petrostates are at risk for severe state weakness.

CHAPTER III

TYPE I PETROSTATE PROFILES

An increasingly widespread perspective is that Type I Petrostates are frequently able to maintain domestic stability through subsidies, social services and increased funding for their security forces.¹ When Type I Petrostates use oil money to placate or curry favor with their population, they place themselves in a fiscal quandary since they are required to bring in revenues to maintain these programs.² Furthermore, these levers of power to quell dissent could not be utilized as forcefully without significant oil revenues. It is worth noting again that Type I Petrostates have primarily state-run oil and/or energy companies called National Oil Companies (NOCs), which provide the means to control oil production and collect revenues. (See Chart 1.1 National and/or State-backed Oil Companies.) NOCs have distinct liabilities, such as operating inefficiently, and frequently not having adequate investment or capital to develop or upgrade infrastructure for major oil-related projects. Nonetheless, NOCs provide petrostate coffers a revenue source for domestic spending and enhance petrostates' power both at home and abroad.

¹ For data and perspectives on how oil-producing countries subsidize social services, see the International Monetary Fund (IMF), *World Economic and Financial Surveys, Regional Outlook: Middle East and Central Asia*, October 2011, <http://www.imf.org/external/pubs/ft/reo/2011/mcd/eng/pdf/mreo1011.pdf> pp. 3-4; International Energy Association (IEA) *World Energy Outlook 2010, Presentation to the press*, London, 9 November 2010 [an abridged version of the original report], http://www.iea.org/weo/docs/weo2010/weo2010_london_nov9.pdf, p. 6; and IEA, OPEC, OECD and World Bank, *Analysis of the Scope of Energy Subsidies and Suggestion for the G-20 Initiative: Prepared for submission to the G-20 Summit Meeting, Toronto (Canada), 26-27 June 2010*, <http://www.oecd.org/dataoecd/55/5/45575666.pdf>.

² Type II Petrostates (See Table 1.2. Petrostate Classification: Type I, Type II, Type III) also tend to use oil revenues to placate their population; however due to the limited scope of this study, only Type I Petrostates are discussed. Throughout this chapter, the term “petrostates” will refer to Type I Petrostates, unless otherwise indicated.

This chapter discusses the six Type I Petrostates tested. Each profile is divided into three subsections that offer a brief overview of each petrostate's: 1) Oil Power (which includes a short history and fundamental oil strengths of each country), 2) Subsidies, Social Programs and Break-even Oil Prices, and 3) Pressing Areas of Political, Economic and Social Instability. The Type I Petrostates are profiled in the order of highest to lowest oil production: Saudi Arabia, Russia, Iran, Nigeria, Venezuela and Algeria.³ The overview of each petrostate is not a comprehensive portrait; it is admittedly brief and many of the country-specific subsections could be expanded on. However, the relevant facts and analysis presented provide a more focused picture of petrostates than is found in related literature. Moreover, the profile of each petrostate shows the direct link between how oil power shapes the trajectory of each country's economic future, as well as how petrodollars are used to fund social programs or security services to occasionally quell domestic unrest or maintain stability.

SAUDI ARABIA

1. Oil Power—Saudi Arabia

Before 1933, Saudi Arabia was a desert kingdom with only rumors of oil. Its evolution to an energy powerhouse would not have happened as quickly without the concession agreement between US energy company Standard Oil of California (SOCAL) and King Ibn Saud of Saudi Arabia in 1933.⁴ Soon after that agreement, Saudi Arabia's Saudi Aramco was founded as a private energy company. By 1980, the company was

³ Note that depending on the year and metrics used, Saudi Arabia and Russia frequently switch positions as largest oil producer and exporter. Based on 2010 statistics from the U.S. Energy Information Agency (EIA), and the CIA World Factbook, Saudi Arabia was the largest oil producer. However, BP's statistics show Russia as the largest oil producer in 2010.

⁴ Daniel Yergin, *The Prize* (New York: Free Press, 2009) p. 274.

nationalized and would become the world's largest upstream NOC.⁵ Saudi Aramco's website notes, "The story of Saudi Aramco tells of the discovery and development of the greatest energy reserves the world has ever known and the rapid transformation of Saudi Arabia from desert kingdom to modern nation-state."⁶

Saudi Arabia's oil wealth and power is based on four fundamentals: 1) the largest oil production in the world in 2010, 2) its frequent position as the largest or second largest exporter of oil in the world, 3) possession of one fifth of the world's proven reserves⁷ and 4) spare capacity to increase global oil supplies if needed.⁸ It is also has sweet, light crude, which makes oil production costs low, unlike the more expensive to produce heavy oil found in Venezuela. Strength in all key oil fundamentals cannot be seen across the petrostates. Saudi Arabia's fourth strength, spare capacity, means that this country alone can offset a major drop in oil production, as was the case in 2011 when Libya's oil industry was at a near stand-still. Two additional sources of power for Saudi Arabia are its national oil company, Saudi Aramco, the largest oil company in the world and its strong position in the Organization of the Petroleum Exporting Countries (OPEC).

Saudi Arabia's de facto leadership role in OPEC provides it additional clout to influence the oil market and shape global affairs. Initially, OPEC, and its most important

⁵ See Saudi Aramco's website at <http://www.saudiaramco.com/en/home.html#our-company%257C%252Fen%252Fhome%252Four-company%252Four-history0.baseajax.html>

⁶ Ibid.

⁷ According to Michael T. Klare, "Proven reserves are the supplies of untapped petroleum that are known to exist and can be extracted from their underground reservoirs with existing technology." See Michael T. Klare, *Blood and Oil* (New York: Metropolitan Books, 2004) p. 75.

⁸ Ibid., p.117-118. Michael T. Klare makes several important points about *proven reserves*, *production or spare capacity* and *domestic consumption*. "A nation may have enormous reserves of untapped petroleum, but they're of no practical value unless they can be extracted and delivered to global markets. And a country that produces oil at a very high rate may still contribute little to the world markets if it consumes most or all of what it takes out of the ground...The amount of oil a given provider can supply to world markets is the difference between its net production capacity and its domestic consumption rate."

founding member, Saudi Arabia, did not wield substantial global power. That dramatically changed during the Middle East oil embargo and “...OPEC finally had a perfect opportunity to exercise power in 1973, proving that the organization – and especially Saudi Arabia as its biggest producer – had some control over oil prices, at least in the short run.”⁹ Saudi Arabia’s influence continued to expand, particularly due to its spare capacity. Mahmoud A. El-Gamal and Amy Myers Jaffe note: “By March 1982, Saudi Arabia had clearly established itself as the ‘swing producer’ within OPEC and worldwide, in effect managing the oil price cycle by controlling its own output, and in the process attenuating the closely related global business cycle. The Saudi swing-producer status afforded the country tremendous geopolitical weight, especially in its growing relationship with the United States. However, the Kingdom had on occasion to pay a hefty price for assuming and retaining this status, for example reducing its oil exports drastically during the recession years between 1980 and 1984...”¹⁰

Due to its fundamental oil strengths, leadership role in OPEC and having the largest NOC in the world, Saudi Aramco, Saudi Arabia has benefitted from enormous oil revenues in the oil boom periods. It has also meant that when the Kingdom was flush with money, it needed to prepare for leaner years that were inevitable in the boom-and-bust oil cycles.

2. Subsidies, Social Programs and Break-even Oil Prices—Saudi Arabia

⁹ Mahmoud A. El-Gamal and Amy Myers Jaffe. *Oil, Dollars, Debt, and Crises: The Global Curse of Black Gold*. (Cambridge: Cambridge University Press, 2010), Location: 498-505.

¹⁰ Ibid.

A significant portion of the money that the Kingdom acquired from windfall oil profits was reinvested into domestic subsidies and social programs. The International Energy Association (IEA) *2010 Energy Outlook* assessed Saudi Arabia's subsidies for domestic oil consumption in 2009 to be over \$20 billion.¹¹ In 2009, Saudi Arabia's combined oil and electricity subsidies were at about \$35 billion dollars that year alone.¹² Saudi Arabia is the largest consumer of oil in the Middle East,¹³ in part because high levels of domestic energy subsidies frequently result in wasteful consumption practices.¹⁴ The challenge for Saudi Arabia is to decrease its subsidies or find ways to use energy more efficiently. With its population of 26,131,703 as of July 2011¹⁵ and youth bulge, these demographic factors portend steep short- to medium-term increases in demand for domestic oil consumption. Furthermore, although it is not known when the ban against women driving will be overturned, the prospect of women eventually being allowed to drive would also increase domestic oil consumption.

Along with subsidies for oil and electricity, the Saudi government has consistently provided social entitlements as a way to engender good will with its population. Rutgers University Middle East historian, Toby Craig Jones has tracked how and why entitlements are disbursed by the Saudi government.

¹¹ International Energy Association (IEA) *World Energy Outlook 2010, Presentation to the press, London, 9 November 2010* [an abridged version of the original report], http://www.iea.org/weo/docs/weo2010/weo2010_london_nov9.pdf. p.6 .

¹² Ibid.

¹³ U.S. Energy Information Administration (EIA), "Country Analysis Briefs: Saudi Arabia," http://205.254.135.7/EMEU/cabs/Saudi_Arabia/pdf.pdf p. 1.

¹⁴ Matthew Yglesias, "Dirty Money" *Slate*, January 26, 2012. http://www.slate.com/articles/business/moneybox/2012/01/fossil_fuel_subsidies_and_global_warming_we_could_cut_the_climate_change_problem_in_half_simply_by_abolishing_inefficient_fossil_fuel_subsidies.html.

¹⁵ Central Intelligence Agency (CIA), CIA World Factbook, "MIDDLE EAST: SAUDI ARABIA," February 8, 2012 [Last updated], <https://www.cia.gov/library/publications/the-world-factbook/geos/sa.html>.

Economic inducements have long been the “bread and butter” of Saudi politics and a significant source of the ruling al-Saud family’s legitimacy. Since the middle of the 20th century, the political order has been based on an implicit understanding between rulers and ruled that oil wealth would be widely redistributed. The recently [in 2010] announced multibillion dollar aid program represents more of the same. Yet it is far from clear that the calculations that have driven the redistribution of oil wealth in the past will satisfy the demands of Saudi reformers in the future. Historically, the terms of Saudi Arabia’s political contract have been that in exchange for a share in the energy spoils, the country’s citizens are expected to remain politically quiescent. Riyadh’s attempt to buy off reformers and challenges to the existing order with more of the same may help ease the burdens of economic duress for many Saudis, but it does little to address the specifically political appeals made by many citizens.¹⁶

The Kingdom’s rulers have a three-pronged approach to preventing domestic upheavals: provide massive economic inducements, co-opt the religious police and clerics and potentially clamp down on dissent through greater use of the security services. The social programs that the Saudi government is presenting would include loans, one-time transfers to public workers, housing subsidies and various ways to combat unemployment.¹⁷ Saudi Arabia is also pledging to fund a large scale project for economic development across the country. According to the CIA Factbook, “The government has begun establishing six ‘economic cities’ in different regions of the country to promote foreign investment and plans to spend \$373 billion between 2010 and 2014 on social development and infrastructure projects to advance Saudi Arabia’s economic development.”¹⁸ Should massive social spending prove insufficient to maintain domestic tranquility, an extra measure was taken to shore

¹⁶ Toby Craig Jones, “Saudi Arabia Moves to Maintain Regime Stability,” [Published by] *The Combating Terrorism Center at West Point*, April 01, 2011, <http://www.ctc.usma.edu/posts/saudi-arabia-moves-to-maintain-regime-stability>.

¹⁷ International Monetary Fund, (IMF) *World Economic and Financial Surveys, Regional Economic Outlook, Middle East and Central Asia*, IMF: Washington D.C., October 2011, <http://www.imf.org/external/pubs/ft/reo/2011/mcd/eng/pdf/mreo1011.pdf> pg. 16.

¹⁸ CIA World Factbook, “MIDDLE EAST: SAUDI ARABIA”.

up stability by supporting the religious police and their affiliated religious institutions.¹⁹ In addition, Saudi Arabia flexed its security muscles by sending troops to neighboring Bahrain, where protests had erupted. The Kingdom had already become adept at thwarting domestic terrorism after outbreaks of al-Qaeda related violence, in particular beginning in 2003.²⁰

Saudi Arabia has allocated substantial budget revenues to social programs but less so to projects that diversify the economy. In January 2011, the U.S. Energy Information Administration (EIA) reported that “Oil export revenues have accounted for 80-90 percent of total Saudi revenues and above 40 percent of the country's gross domestic product (GDP).”²¹ Similar statistics are presented on OPEC’s website, under the country profile for Saudi Arabia, which says that the petroleum sector produces 75% of its budget revenues and 45% of gross domestic product.²² Saudi Arabia’s attempts to diversify its economy have arguably not produced alternative, non-energy sectors for revenue contingencies. According to a 2011 U.S. Energy Information Administration (EIA) country report, Saudi Arabia is diversifying economically by expanding its refining, petrochemicals and mineral products industries.²³ This type of diversification is, however, still tethered to upstream oil activities. There are other diversification endeavors, still in the energy realm, with Saudi Arabia’s investment in solar power. Nonetheless, the primary motivation for the government to develop solar power is to

¹⁹ Jones.

²⁰ Thomas W. Lippman, *Saudi Arabia on the Edge: The Uncertain Future of an American Ally* (Washington D.C.: Potomac Books, 2012) Location: 226-41.

²¹ U.S. EIA, “Saudi Arabia”.

²² OPEC, “Saudi Arabia facts and figures,” http://www.opec.org/opec_web/en/about_us/169.htm.

²³ U.S. EIA, “Country Analysis Briefs: Saudi Arabia,” p. 1.

reduce domestic oil consumption and increase oil exports.²⁴ Speaking at a conference in Abu Dhabi on March 28, 2011, Saleh Al-Awaji, Saudi Arabia's deputy minister for electricity at the Ministry of Water said, "The policy is to work intensely on saving energy and making sure every barrel of oil that can be saved is, and is made available for export."²⁵ The boldest move towards diversification came in 2010 when new Saudi Arabian regulation opened up the banking and telecom sectors for international investment.²⁶

Overall, heavy reliance on oil revenues, lack of significant diversification in its economy, and high social spending leads many energy analysts to estimate a high "break-even" oil price for Saudi Arabia. A break-even oil price is the price at which a barrel of oil needs to remain in order for a petrostate to meet its budgetary requirements.²⁷ To fund these social spending programs Saudi Arabia rests its budget projections and its break-even oil price primarily on higher than average oil prices. The highest break-even oil price came from analyst Paul Sankey of Deutsche Bank who argues that Saudi Arabia needs \$92 a barrel to break even.²⁸ A similar figure was proposed by Alia Moubayed of Barclays who set \$91 as the break-even price for Saudi Arabia.²⁹ According to oil expert,

²⁴Anthony DiPaola, "Saudi Arabia to Target Solar Power in \$100 Billion Energy Plan" *Bloomberg News*, March 31, 2011, <http://www.bloomberg.com/news/2011-03-31/saudi-arabia-to-target-solar-power-in-100-billion-energy-plan.html>.

²⁵ Ibid.

²⁶ [Caryle Murphy](http://www.thenational.ae/business/economy/saudi-reaches-out-to-diversify-its-economy?pageCount=0), "Saudi reaches out to diversify its economy," *The National*, February 14, 2010, <http://www.thenational.ae/business/economy/saudi-reaches-out-to-diversify-its-economy?pageCount=0>.

²⁷ A break-even oil price, as defined by The International Monetary Foundation is "...the price levels that ensure that fiscal accounts are in balance at the given level of spending." See IMF, *World Economic and Financial Surveys, Regional Outlook: Middle East and Central Asia*, p. 3.

²⁸ [Steve Hargreaves](http://money.cnn.com/2011/10/27/markets/saudi_oil_cut/index.htm?iid=HP_LN), "Saudi oil production cut looms," *CNN*, October 27, 2011, http://money.cnn.com/2011/10/27/markets/saudi_oil_cut/index.htm?iid=HP_LN.

²⁹ Bloomberg News, "Saudi Oil Breakeven Now at \$91, Moubayed Says," December 21, 2011, <http://www.bloomberg.com/video/83197760/>.

Steve LeVine, the range for Saudi Arabia is \$85-\$90 a barrel to break even.³⁰ Yet another figure from the IMF says about \$80 is the break-even price.³¹ However, Saudi Arabia's national bank has said that it needs \$71.5 a barrel to break even in 2012.³² Although this last figure is well under what many energy analysts predict, this is still an uptick in the break-even price from 2011, when Saudi Arabia needed \$70.9 a barrel to break even.³³ If Saudi Arabia does not meet its break-even price for oil, it does not have a contingency plan as the bulk of its exports are oil-based. Overall, as noted by a 2011 International Monetary Report (IMF) on the Middle East and Central Asia "Fiscal vulnerability has increased as a consequence of the substantial spending packages that have been implemented over the past three years. In particular, fiscal break-even oil prices...have been trending upward in most countries and are gradually approaching the actual spot market oil price."³⁴

3. Pressing Areas of Political, Economic, or Social Instability—Saudi Arabia

There are two overriding challenges that may eventually impinge on Saudi Arabia's relative stability. One is the tension between allowing some level of personal or political liberties, and preventing widespread dissent and uprisings from occurring. The

³⁰ Steve LeVine, "[On top of the Arab Spring, petro-tyrants now face perniciously low oil prices](http://oilandglory.foreignpolicy.com/)," *The Oil and the Glory*, Foreign Policy, blog, January 11, 2012, <http://oilandglory.foreignpolicy.com/>.

³¹ IEA, OPEC, OECD and World Bank, *Analysis of the Scope of Energy Subsidies and Suggestion for the G-20 Initiative: Prepared for submission to the G-20 Summit Meeting, Toronto (Canada), 26-27 June 2010*, <http://www.oecd.org/dataoecd/55/5/45575666.pdf>, p. 22.

³² Wael Mahdi, "Saudi Oil Break-Even Price Rise to \$71.5 Next Year, NCB Says," December 27, 2011 <http://www.bloomberg.com/news/2011-12-27/saudi-oil-break-even-price-rise-to-71-5-next-year-ncb-says.htm>.

³³ Ibid.

³⁴ IMF, *World Economic and Financial Surveys, Regional Outlook: Middle East and Central Asia*, p. 3.

Kingdom has decided to primarily temper political dissent by providing even more generous and wide-reaching social inducements. The second challenge is the pace at which Saudi Arabia can truly transform itself from a petrostate to one that is diversified and not hostage to the continuation of the status quo with regards to oil consumption. Projections in various energy outlook papers show a flattening of global demand in oil by or around 2030. Saudi Arabia will need to diversify in order to prepare for what could be described as a “post-oil period” where one or more of the various scenarios are likely to play out: a reduction of oil demand due to disruptive technologies, massive lifestyle changes associated with climate change, and/or the possible depletion of Saudi Arabia’s oil fields.

Thomas W. Lippman highlights the two challenges of political reforms and diversification that Saudi Arabia faces in a post-Arab Spring context:

Oil will remain the principal source of state revenue for the foreseeable future, but Saudi Arabia is no longer content—and soon will no longer be able—to function as a classic ‘rentier’ state, that is living off the export of extracted natural resources and doling out fiscal sugarplums to its population. The country has embarked on a hugely ambitious effort to reconstruct itself as a powerhouse of petrochemicals, aluminum, communications, and services that would rival South Korea or Australia in the diversification of its economy, educational levels of its people, and overall quality of life. In effect, Saudi Arabia is conducting a giant, long-running laboratory experiment on itself to determine whether it can modernize its economy, its style of living, and its relations with the rest of the world without abandoning its cherished traditions. While it probably can, the outcome is not assured.³⁵

The ability for the Saudi Arabian government to navigate its dual pressures of political reforms and meeting its social obligations will be challenging, and complicating the

³⁵ Lippman, Location: 136-52.

problem is the less than clear prospects that Saudi Arabia will continue to enjoy high oil prices to meet its burgeoning budgetary obligations.

The SOVIET UNION/RUSSIA

1) Oil Power—The Soviet Union

Before discussing Russia's oil wealth and power, a few historical facts should be provided about the Soviet Union's oil sector. The Soviet Union relied heavily on petroleum exports for its revenues and to pay for imports. The Soviet Union, which included 15 republics, boasted of the ability to be nearly self-sufficient, particularly in the energy sector.³⁶ In its own right, the Soviet Union was an energy powerhouse, or petrostate. "When its oil output peaked in 1987, the USSR produced 624 million tons of oil, ahead of the United States and Saudi Arabia. The Russian Federation accounted for more than 90 percent of the USSR's oil output—570 million tons during the peak year."³⁷ In the early 70s, the Soviet Union's oil exports benefited from higher than average oil prices. Oil prices also spiked after the Iran hostage crisis of 1980 until about 1985,³⁸ but after the mid-1980s, a combination of lower oil prices and increasingly higher costs for oil production contributed to the faltering Soviet economy. Low oil prices had dire consequences for the Soviet Union since oil, and to lesser extent natural gas, were the only means for the Soviet Union to pay its bills.³⁹ Daniel Yergin notes that in 1986, in

³⁶ Robert G. Jensen, Theodore Shabad, and Arthur W. Wright. *Soviet Natural Resources in the World Economy* (Chicago: University of Chicago Press, 1983) p. 3.

³⁷ Adnan Vatansever, *Russia's Oil Exports: Economic Rationale Versus Strategic Gains*, *Carnegie Papers* Carnegie Endowment, (Washington D.C.: Carnegie Endowment for International Peace, December 2010) http://carnegieendowment.org/files/russia_oil_exports.pdf, p. 3.

³⁸ For historical oil prices, see www.bp.com.

³⁹ Marshall Goldman. *Petrostate: Putin, Power and the New Russia*. (New York: Oxford University Press, 2008) Location: 1038-54.

particular, global oil oversupply and reduced demand resulted in the collapse of prices. “This drastically reduced the hard currency earnings that the country needed to pay for imports....Even though the Soviet oil industry...continued to push up output, it was not enough to bail out the sinking economy.”⁴⁰

In that same decade, President Mikhail Gorbachev introduced the simultaneous political reforms of *glasnost* and economic reforms of *perestroika* and the latter, in particular, contributed to the already faltering economy. Whether or not the Soviet Union could structurally handle any reforms, or the system simply could not be reformed, remains unanswered. Higher oil prices would have kept the Soviet economy afloat. Low oil prices, along with a confluence of destabilizing events such as the Soviet Union’s draining and unsuccessful Afghan war, and to some extent the military pressure exerted by the Reagan administration, hastened the demise of the Soviet Union.⁴¹

RUSSIA

1) Oil Power—Russia

Once the Soviet Union collapsed in late 1991, Russia had the arduous task of moving to a free-market economy and preventing chaos from ensuing in the process. It was quickly determined that exploiting the abundance of natural resources was crucial during this transitional phase. Oil, natural gas and coal endowments placed Russia in a highly advantageous energy position. In particular “...oil and natural gas—were as critical to the

⁴⁰ Yergin, *The Quest*, Location: 427-42.

⁴¹ Few former Sovietologists or Russia experts believe that Ronald Reagan single-handedly brought about the demise of the Soviet Union. Former Sovietologists and/or Russia scholars such as John Lewis Gaddis, Robert Legvold, Stephen Sestanovich, Dmitry Trenin and Marshall Goldman, while acknowledging President Reagan’s role in perhaps weakening the Soviet Union through the arms race, have not supported the idea that Reagan was a primary factor in the collapse of the Soviet Union. An under-researched topic is to what extent low oil prices crippled the Soviet economy in a crucial period.

new Russian state as they had been to the former Soviet Union. By the middle 1990s, oil export revenues accounted for as much as two thirds of the Russian government's hard currency earnings."⁴²

Although Russia had energy wealth at its disposal, and some requisite oil production infrastructure, the post-Soviet oil history in Russia was tumultuous. The trajectory from state-owned oil companies to partially private ones in the 1990s, and then back to the mostly state-owned oil companies of today was a complicated and ultimately flawed process.⁴³ During the 1990s, under President Boris Yeltsin, several paths to privatizing state assets included a voucher system, a much-criticized Loan for Shares program, and business dealings outside of the Kremlin's control, such as bureaucrats, company directors or well-placed individuals being able to capitalize on their former Soviet positions of power. With this history, it is unsurprising that eventual renationalization of some of the oil companies would occur. Through a tortuous path, the major Russian NOCs that emerged are Rosneft, Lukoil, and Gazprom. Gazprom is the largest of the three but is primarily a natural gas company.

Since the collapse of the Soviet Union to the default of the ruble in 1998, Russia's economy and oil production have been faltering. This changed once Yeltsin stepped down as president and Vladimir Putin came to power, by fortunate timing, and enjoyed an economic and oil upturn. By the end of the 1990s oil prices were still fairly low, but Russia's chaotic decade was over and oil production was increasing. Post-Soviet

⁴² Yergin, *The Quest*, Location: 458-73.

⁴³ The post-Soviet history of oil companies cannot be adequately covered here. For a thorough account of how post-Soviet Russian oil assets were sold off, see Chapter 3, *Pirates Unleashed*, in Marshall Goldman's *Petrostate: Putin, Power and the New Russia*.

Russian society had passed through the worst of its criminal and mafia-related violence.

Signs of economic recovery were encouraging by mid-2000:

...Russia was back as an oil producer. Its output was as high as it had been in the twilight of the Soviet Union, two decades earlier, but on very different terms. The oil industry was integrated technologically with the rest of the world; and it was no longer the province of a single all-encompassing ministry, but rather was operated by a variety of companies with many differences in leadership, culture, and approaches. When it was all added up, Russia was once again the largest producer of oil and the second largest exporter in the world.”⁴⁴

Russia’s ascendant oil wealth and power started around 2000, but Putin had already fully grasped Russia’s energy potential and elaborated a specific view of how energy wealth should be managed. In 1999 he wrote about his views on energy wealth as vital for national interests and how these resources should firmly stay in the purview of the government.⁴⁵ That same year he became Prime Minister under President Yeltsin, ultimately the President of the Russian Federation and would have the ability to implement his vision on a national stage.

By 2010, in its renewed role as an energy powerhouse, Russia was the second largest producer of oil, but by some accounts, the largest producer.⁴⁶ Russia frequently trades places with Saudi Arabia as the largest or second largest producer of oil. Energy analyst, Adnan Vatansever’s posits: “Russia has emerged as the world’s largest oil producer as Saudi Arabia has cut back its production to meet the quota requirements of the Organization of the Petroleum Exporting Countries (OPEC). In 2009, for the first time since 1991, Russia took the top spot, accounting for 12.5 percent of global oil output. It

⁴⁴ Yergin, *The Quest*, Location: 712-27.

⁴⁵ Michael Klare, *Rising Power, Shrinking Planet*, (New York: Holt Paperbacks, 2008) p. 114.

⁴⁶ BP ranks Russia as the largest exporter of oil; the U.S. EIA and CIA World Factbook rank it as the second largest oil producer.

maintains its status as the main non-OPEC oil supplier, and its output is equivalent to a third of OPEC's total oil production."⁴⁷ In 2009, its oil production was 9,930 thousand barrels per day and 2,850 thousand barrels per day were consumed.⁴⁸ Russia has the eighth largest proven crude oil reserves with 60 billion barrels beginning in 2010.⁴⁹ In addition, there are several potentially oil-rich regions in Russia that have not been adequately explored and might increase oil reserves.

Russia's spare capacity and its policy on production are not as clear cut as its other oil-related fundamentals. The general perception is that Russia in 2011 is producing at maximum capacity with no oil wells standing idle.⁵⁰ Vatansever has questioned the rationale for Russia to continue such high production and seek out new pipelines and export outlets. He argues, "...when analyzing both the country's geology and economics it's clear that Russia will have more export pipelines than it needs. Parts of its oil export network will have to remain either underutilized or rely on oil from the Caspian countries, particularly Kazakhstan." Goldman suggests that because domestic consumption is staying low, and not growing, Russia can meet all of its contractual agreements to produce and export oil.⁵¹ Regardless of the motivations for full capacity oil production, the viability of sustaining such an approach will continue to be questioned.

⁴⁷ Vatansever, p. 3.

⁴⁸ U.S. EIA, "Country Analysis Briefs: Russia," <http://205.254.135.7/EMEU/cabs/Russia/pdf.pdf>, p. 1.

⁴⁹ Ibid.

⁵⁰ Andrew K. Kramer, "Russia Cashes In on Anxiety Over Supply of Middle East Oil," *New York Times*, March 7, 2011, <http://www.nytimes.com/2011/03/08/business/global/08oil.html?pagewanted=all>.

⁵¹ Goldman, Location: 3523-39.

2) Subsidies, Social Programs and Break-even Oil Prices—Russia

Throughout the 1990s, the transition for Russia from the Soviet Union's state-run command economy to a quasi free market, or Russian style free market economy, was extremely challenging. The post-Soviet Union subsidies and social programs that existed were paltry. Pensions and state salaries were frequently paid late or did not keep pace with inflation. Thus, President Putin's first objective was to restore some level of confidence in the state and accumulate wealth through petrodollars to restart or devise new social programs. Military expenditures, paying pensions and infrastructure spending were priorities. Other areas of expenditure had to do with fertility initiatives and some public health campaigns. Russia has a unique demographic problem, in sharp contrast to that of Saudi Arabia and many of the other petrostates that have a youth bulge. Russia, instead, has a rapidly decreasing male (women to a lesser extent) working population due primarily to alcoholism and inadequate healthcare. Hence, one of the social programs quickly implemented incentivized women to have children and provided generous maternity leaves.

To maintain these social programs and other public expenditures, Russia requires one of the highest break-even prices of the Type I Petrostates. According to Steve LeVine, Russia will not achieve its break-even price. "The Kremlin forecasts that oil prices will average \$100 a barrel this year, well below the \$126-a-barrel level that the state budget requires in order to break even. Unlike in 2007 and 2008, Russia will have to borrow money through the sale of Eurobonds in order to fund its deficit. After Putin's presumed election victory [of 2012], his tough talk will look threadbare, lacking the

muscle of surplus spending dollars.”⁵² While LeVine suggests the break-even price is \$126 a barrel, other analysts have suggested the price to be \$100 a barrel to break even.⁵³ The high break-even price while create budgetary constraints for the Russian government. Nouriel Roubini, who became famous for predicting the global financial collapse of 2008, presents a scathing attack on Russia’s dysfunctional and undiversified economy. He argues: “In effect, Russia’s economy consists of one somewhat healthy sector—oil and gas—that fluctuates with the price of these commodities. It needs to diversify, but that would require the privatization of state-owned enterprises, the liberalization of the economy, a reduction in the kind of red tape that hampers the creation of new firms, and a serious crackdown on the corruption that permeates the private sector. Even the energy sector has to be liberalized. Unfortunately, foreign investors remain reluctant to sink money into facilities that might eventually be expropriated or nationalized.”⁵⁴

In 2009, Russia spent just under \$35 billion in gas subsidies.⁵⁵ Leslie Dienes of Kansas University spoke about Russia’s subsidy problem with Marshall Goldman: “...as long as domestic energy prices for both petroleum and gas in Russia are prevented from reaching market levels, those below-market prices not only subsidize excess consumption but they also discourage investment in the development of new reserves. Prices are kept low for fear of a political backlash from the public if this benefit is eliminated...not only

⁵² LeVine, “[On top of the Arab Spring, petro-tyrants now face perniciously low oil prices](#)”.

⁵³ Fareed Zakaria, “Zakaria: Why oil prices will stay high,” *CNN, Global Public Square (blog)*, January 15, 2012, <http://globalpublicsquare.blogs.cnn.com/2012/01/15/zakaria-why-oil-prices-will-stay-high/>.

⁵⁴ Nouriel Roubini, *Crisis Economics: A Crash Course in the Future of Finance*, (New York: Penguin Press, 2010) p. 288.

⁵⁵ IEA, OPEC, OECD and World Bank, *Analysis of the Scope of Energy Subsidies and Suggestion for the G-20 Initiative*, p. 6.

does the subsidized price for natural gas result in the misallocation of resources, but for the same political reasons, electricity rates are similarly controlled.⁵⁶

Removing subsidies will be as challenging for Russia as it is most countries. Putin's third term as president has angered segments of the Russian population who viewed his political maneuvering to secure a third term as corrupt and hubristic. The public backlash during the presidential election season may compel Putin to not anger other his core supporters. Thus, there are unlikely to be any meaningful reforms or reduction of subsidies, and instead, spending is likely to increase to uphold campaign promises.

3. Pressing Areas of Political, Economic, or Social Instability--Russia

Moving forward, Russia faces continued economic and political instability. There has been much criticism directed at Russia's economic potential for growth and other indicators of a health economy, but politically, there is a new and evolving threat. Russia's population did not frequently engage in mass protests until the announcement of Putin seeking a third term as president in 2012. Since Putin's ascent to power, the population has grown weary of rampant corruption, cronyism and unfair electoral practices. In addition, Russians may have been influenced by the outpouring of dissent in the Arab world.

After Putin's March 4, 2012 reelection, the government faces continued pressures for political and social reform, as well as ongoing challenges to uphold increasing public sector spending. Steve LeVine believes "...it could be more difficult

⁵⁶ Goldman, Location: 3406-22.

for him [Putin] to keep control than it has been in the past 10 years. And that's with oil at around \$115 a barrel. If oil prices were to plunge, there could be trouble."

Iran

1. Oil Power—Iran

Iran is notable as the first country in the Middle East where petroleum was discovered and the first place in the region where petroleum was produced on a large scale. Oil prospecting began in 1901 when British millionaire, William Knox D'Arcy, commissioned a geologist to look for oil in southwest Iran. D'Arcy had received an oil concession from Shah Muzafar ed-Din, but the British concession terms were not favorable for Iran, especially in light of the more generous oil deals the US has offered Saudi Arabia and Venezuela. In 1908, the same year that oil was discovered in Iran, the Anglo-Persian Oil Company (APOC) was formed. In 1914, Winston Churchill helped pass an act through British parliament to acquire a 51 percent controlling stake in APOC.⁵⁷ This ever increasing British involvement in Iran's oil production led Iranians' calls to nationalize their oilfields and left a legacy of unease about foreign involvement in Iran's oil industry.⁵⁸ The resentment towards the British came to a head in 1951 when the Iranian parliament rejected a Supplemental Concession that would provide the Iranian government with only modest increases in profit-sharing. Mahmoud El-Gamal and Amy Myers Jaffe note: "National oil companies in the Middle East are a relatively recent phenomenon. The first major attempt to nationalize Middle-East oil resources, carried out

⁵⁷ For an in-depth discussion on the British-Iranian oil relation, see Ivan L. G. Pearson's *In the Name of Oil* (Brighton, UK: Sussex Academic Press, 2010).

⁵⁸ John Leyne, "Oil discovery transformed Iran" *BBC*, August 18, 2008, [online] <http://news.bbc.co.uk/2/hi/7569352.stm>.

by Iran's [Mohammad] Mossadeq in 1951, was thwarted by a British- and American-supported coup. Only a few decades later, the situation has been totally reversed, with international oil companies currently denied any direct access to oil and gas resources in many oil-rich countries.”⁵⁹

Since the end of the British-Iranian oil relationship, Iran created one of the largest NOCs, the National Iranian Oil Company (NIOC). Various other indicators make Iran a strong oil power. In 2010, according to the U.S. Energy Information Agency, Iran was the fifth largest producer of oil in the world,⁶⁰ and in 2011 the country had the fourth largest proven reserves.⁶¹ International sanctions have made oil export more difficult for Iran, but as of 2010, it was the third largest exporter of oil.⁶² Iran is also a member of OPEC.

On the surface, Iran's fundamental oil strength seems clear, but there are various challenges for this country as it moves forward. Unlike the other Type I Petrostates, Iran is the lone state which faces international condemnation due to its development of nuclear weapons and by many accounts, its involvement in funding terrorist networks abroad. Sanctions and isolation will impede Iran's oil industry from developing, particularly as it needs greater technological expertise to refine oil and investment to maintain its oil production capacity.

⁵⁹ Mahmoud A. El-Gamal and Amy Myers Jaffe. *Oil, Dollars, Debt, and Crises: The Global Curse of Black Gold*. (Cambridge: Cambridge University Press, 2010), Location: 332-39.

⁶⁰ U.S. Energy Information Administration (EIA), “COUNTRIES: Top World Oil Producers, 2010” <http://www.eia.gov/countries/index.cfm>.

⁶¹ U.S. Energy Information Administration (EIA), “Country Analysis Briefs: Iran,” February 17, 2012, <http://www.eia.gov/emeu/cabs/Iran/pdf.pdf>, p. 1.

⁶² Ibid. pg. 2.

2. Subsidies, Social Programs and Breakeven Oil Prices—Iran

The Iranian state has provided subsidies across all sectors, but its most outstanding subsidies are to its citizens for oil, gas and electricity. According to the IEA's *World Energy Outlook 2010* report, Iran provided between 65 and 70 billion dollars worth of subsidies to its citizens in 2009.⁶³ Most of the subsidies came in the form of oil, which accounted for about 30 billion dollars worth, and overall, Iran had the highest subsidies of all the countries surveyed.⁶⁴ Not surprisingly, the government has attempted to remedy this unsustainable situation.

When President Mahmud Ahmadienijad came to power his focus was on his core constituency of the poor, who greatly outnumbered wealthy Iranians. To that end, under Ahmadinejad, government spending went from \$15 billion to \$40 billion.⁶⁵ In December 2010, President Mahmud Ahmadinejad's Targeted Subsidies Law (TSL) to reduce state subsidies on energy and food was passed.⁶⁶ The public has seemingly accepted the removal of these subsidies but with a tradeoff. President Ahmadinejad's government is providing \$40 a month (roughly) for every man, woman and child in lieu of these subsidies.⁶⁷

While there are several explanations why the removal of subsidies came about, an IMF Working Paper suggests that "By 2008, few people could dispute the need to reform Iran's domestic energy prices. As international oil prices approached US\$150 per barrel

⁶³ IEA, *World Energy Outlook 2010, Presentation to the press*, London, 9 November 2010, p. 6.

⁶⁴ Ibid.

⁶⁵ Vali Nasr, *Forces of Fortune* (New York: Free Press, 2009) p. 77.

⁶⁶ Central Intelligence Agency (CIA), CIA World Factbook, "MIDDLE EAST: IRAN," February 21, 2012 [Last updated], <https://www.cia.gov/library/publications/the-world-factbook/geos/ir.html>.

⁶⁷ Fareed Zakaria, "[Ahmadinejad's economic savvy](#)" *CNN*. August 20, 2011, <http://globalpublicsquare.blogs.cnn.com/2011/08/20/irans-economic-reforms/>

and f.o.b. [Free on Board] gasoline prices hovered around \$2 per liter, Iran's domestic price of US\$0.10 per liter of gasoline was clearly out of touch with reality, unsustainable and unjustifiable by any economic theory. Iran was importing increasing amounts of gasoline to supply domestic demand.”⁶⁸ According to the CIA World Factbook, the bill will phase out subsidies that have cost Tehran \$60-100 billion annually and “... is the most extensive economic reform since the government implemented gasoline rationing in 2007.”⁶⁹ This move garnered praise from the International Monetary Fund: “So far, Iran's subsidy reform, which has resulted in a reduction in domestic energy consumption, has had a positive distributional and environmental impact.”⁷⁰ This move also meant that Iran became the first oil-exporting country to significantly reduce its energy subsidies. The benefits of this move would mean more efficient domestic use of energy and greater supplies of oil for export. Nonetheless, Iran has to reign in other social spending programs not covered by this law and manage lowered expectations for the public.

Social entitlements were firmly put into place after the Iran-Iraq war, “...the government tightened its grip on the economy still further by enacting price controls and food rationing, diverting investments and resources from activities that would grow the economy to subsidizing the poor and funding entitlement programs, and bloating the bureaucracy ever further. By the time the Iran-Iraq war ended in a stalemate, in 1988,

⁶⁸ Dominique Guillaume, Roman Zyttek, and Mohammad Reza Farzin, *IMF Working Paper, Iran—The Chronicles of the Subsidy Reform*, IMF July 2011, <http://www.imf.org/external/pubs/ft/wp/2011/wp11167.pdf>, p. 6.

⁶⁹ CIA, “MIDDLE EAST: IRAN”.

⁷⁰ IEA, OPEC, OECD and World Bank, *Analysis of the Scope of Energy Subsidies and Suggestion for the G-20 Initiative*, p. 6.

Iran's economy was in dire straits, and the leadership knew a change of course was desperately required."⁷¹ On the one hand, the Iran leadership has to a great extent extricated itself from the untenable situation of providing massive energy subsidies, but the Iranian leadership will have to contend with an emerging coalition of states that will impose strict Iranian oil import sanctions.

3. Pressing Areas of Political, Economic and Social Instability—Iran

There are two imminent threats to Iran's domestic stability as well as a lingering threat from the 2009 Green Revolution. Iran's most pressing concern comes from the targeted sanction of 2012 that would ban the sale of Iranian oil in the global market. Decades-long sanctions have weakened Iran's economy; however this oil sanction, spearheaded by the US to thwart Iran's nuclear program, may prove more devastating. The full impact of these sanctions may be felt after July 2012 when the European Union, specifically countries that rely on Iranian oil supplies, phase out oil imports from Iran. If Iran is blocked from negotiating oil deals with countries like India and China, the economic blow to Iran could be devastating. This would also curtail President Ahmadinejad's leverage to allocate funds or maintain programs to his key supporters—most of whom are poorer Iranians.

The other threat to Iran is the potential military strike by the Israelis and possibly US. This second threat, however, has not come to pass and remains an option on the table. At the time of this writing, military action against Iran is uncertain. According to one of the

⁷¹ Nasr, p. 66.

premiere political risk analysts and forecasters, Ian Bremmer, the possibility of the Israelis conducting a military strike against the Iranians is relatively unlikely, at least not before the 2012 U.S. elections.⁷²

If a military strike were to occur it might provide some stability to the Iranian regime initially, since there would be a common enemy to direct the popular anger. Ultimately, the regime would increasingly lose credibility with younger, middle-class Iranians. This demographic, born in the 1970s and 1980s, has shown a penchant for modernization and reform. The first sign of this, Mark Gasiorowski writes was “The emergence of large numbers of young people and women favoring extensive reform produced a huge constituency for Khatami’s reforms in 1997. Khatami’s landslide victory, the reformists’ overwhelming success in the 2000 parliamentary elections, and Khatami’s strong reelection in 2001 demonstrated that a large majority of Iranians wanted fundamental change.”⁷³ However, since most of Khatami’s reforms were eventually blocked, disenchantment with the pace of reforms produced less turnout in subsequent elections and in 2005, the conservative Mahmoud Ahmadinejad was elected.⁷⁴ The next phase of discontent, known as the Green Revolution of Iran was arguably the most notable precursor to the Arab Spring.

Vali Nasr best explains the predicament Iran finds itself in economically and politically: “...faced with a growing demand from the populace for more robust economic growth—growth not wholly contingent on oil revenues, which have proven so

⁷² Benjamin Paulker, (interviewer) “\$200 Oil and the Moscow-Beijing Alliance,” *Foreign Policy*, March 9, 2012, http://www.foreignpolicy.com/articles/2012/03/09/200_oil_roubini_bremmer?page=0,1.

⁷³ Mark Gasiorowski, “Islamic Republic of Iran: Political Dynamics and Foreign Policy,” in Karl Yambert, ed. *The Contemporary Middle East: A Westview Reader* (Boulder, CO: Westview Press, 2010) p. 213.

⁷⁴ Ibid.

volatile—while knowing that with the rise of those middle class merchants and business professionals who can deliver that growth will inevitably come demand for political reform as well. This is the true motivation of the clerical leadership’s support of Ahmadinejad, and of his raging populism, regardless of dangers that are inherent in the president’s wrong-headed policies and the passionate opposition they have generated.”⁷⁵

Iran may wish to bolster its global power and protect itself from any meddling in its foreign policy by acquiring a nuclear weapon, but it will do so at a cost to its internal stability. The Iranian leadership will be diminished by tightening sanctions and the ongoing prospect that the middle class youth, in particular, will demand more from the leadership in terms of democratic concessions and economic growth. The Arab Spring uprisings have also presented a blueprint of how authoritarian regimes can be upended.

NIGERIA

1. Oil Power—Nigeria

Oil discovery in Nigeria came fairly late as compared to Saudi Arabia, Russia, Iran and Venezuela. According to Daniel Yergin, oil exploration started in 1937 in Nigeria with a joint venture between Shell and BP and oil was eventually discovered in 1956.⁷⁶ In 1960, Nigeria gained independence from the United Kingdom, but Nigeria’s post-colonial period was turbulent, even with oil wealth. Ethnic tensions came to the fore quickly, and as oil was discovered in the south of the country where one ethnic group is in the majority, this led to divisions about how oil wealth was to be distributed. In the 1960s, the Biafra War would hamper Nigerian oil production potential and foreshadow

⁷⁵ Nasr, p. 56.

⁷⁶ Yergin, *The Prize*, p. 509.

the frequent cycle of ethno-religious wars. It was only in 1970, at the end of the war, that oil production in Nigeria would stabilize. Nigeria's oil power has frequently been hampered by its internal turbulence, but the 1970s would be the first decade Nigeria would truly attain and use its oil power. That decade Nigeria became a member of OPEC and in line with OPEC membership nationalized its oil fields. "Nigeria, in the most dramatic use of the 'oil weapon' since 1973, nationalized BP's extensive holdings in that country in retaliation for the British company's alleged indirect sales to South Africa, and then turned around and auctioned off its newly nationalized supply at higher prices."⁷⁷ After the Biafra Civil War the country was able to benefit from its oil wealth. Reconciliation was swift and "Foreign exchange earnings and government revenues increased spectacularly with the oil price rises of 1973-74."⁷⁸ However, as is often characteristic of oil's boom-and-bust cycles, the 1980s reversed the gains that Nigeria made in the 1970s.

By the end of February 1983 a complete collapse [of oil prices] seemed at hand. The British National Oil Company cut the price on North Sea oil by three dollars, to thirty dollars a barrel. That was devastating to Nigeria, a member of OPEC and a country of 100 million people whose economy had become dangerously overdependent on oil. Nigerian oil competed directly in quality with North Sea crudes, and Nigeria's normal buyers, now able to get cheaper oil from the North Sea, deserted the African country. Almost devoid of customers, Nigeria virtually stopped exporting oil. The internal politics of the country, recently returned to civilian rule, shuddered.⁷⁹

Like most Type I Petrostates, Nigeria's economy is not diversified. Approximately 95% of its export earnings come from oil, and around 40% of government revenues are

⁷⁷ Ibid., p. 678.

⁷⁸ U.S. Department of State, "Background Note: Nigeria," Updated October 20, 2011, <http://www.state.gov/r/pa/ei/bgn/2836.htm>.

⁷⁹ Yergin, *The Prize*, 702.

derived from oil.⁸⁰ Nigeria does have several strong oil fundamentals and remains the dominant African exporter of oil. According to the U.S. EIA, Nigeria was the tenth largest oil producer. Also, as of January 2011, it has approximately 37.2 barrels of proven oil reserves.⁸¹

2. Subsidies, Social Programs and Break-even Oil Prices—Nigeria

In the IEA's listing of 25 countries with high oil, natural gas or electricity subsidies, Nigeria was not listed. In other words, Nigeria does not provide as many energy-related subsidies as other Type I Petrostates. Nonetheless, Nigeria's 2011 decision to rescind a gas subsidy has sparked outcries by the public. The Nigerian government may be the least willing or able of the Type I Petrostates to provide massive subsidies, or social entitlement programs, but the state clearly needs to address the stark economic disparity between the rich and poor. Notably, citizens from the Niger Delta, which is the home to the country's vast oil wealth, have been most aggrieved as a result of their nation's elite profiting from vast oil wealth and not remedying social and economic inequality.⁸² The Niger Delta, in particular, suffers not only from a dire economic situation but also from environmental degradation as well as instability due to rebellious groups that have formed to protest—sometimes violently—the fate of the region. Groups in the Niger Delta such as the Movement for the Emancipation of the

⁸⁰ U.S. Energy Information Administration (EIA), "Country Analysis Briefs: Nigeria," August, 2011, <http://www.eia.gov/EMEUCABS/Nigeria/pdf.pdf>, pg. 1.

⁸¹ Ibid., p. 2.

⁸² See Oxford Poverty and Human Development Initiative (OPHI), *OPHI Country Briefing 2011, Nigeria*, (Online) <http://hdr.undp.org/external/mpi/Nigeria-OPHI-CountryBrief-2011.pdf>.

Niger Delta (MEND) have at various times sabotaged oil operations and/or kidnapped oil workers in protest.⁸³

As noted by scholars, economists and policy analysts, subsidies are often promoted as a way to help the poor, but unless they are targeted subsidies, they usually benefit the middle or upper class of society. In Nigeria, the 2011 removal of gas subsidies created a backlash by the public, because of the uncertainty it caused and the spike in oil prices. Regarding Nigeria, the International Energy Agency's Oil Market Report, 2012 advocates that

In a country where two-thirds of the population live on less than \$1.25 a day it is blatantly unaffordable to support a subsidy [gasoline] that costs nearly \$50 per person last year. Fuel subsidies are not only enormously wasteful but they also greatly distort the efficient distribution of resources, whilst often fuelling corruption. However, gasoline prices more than doubled on the subsidy removal, causing great political unrest. This suggests that, in hindsight, a more gradual process might have been advisable. Nor do the measures seem to have been accompanied by much in the way of public consultation or targeted assistance for the poorest members of society.⁸⁴

With few relatively few social programs, it is unsurprising that Nigeria has the lowest break-even oil price of the Type I Petrostates. Reporting in the *Financial Times*, Chris Garman and Robert Johnston of Eurasia Group agree that the Nigerian break-even oil price of about \$70 per barrel is realistic, especially with the end of oil subsidies.⁸⁵ Garman and Johnston believe that oil price fluctuations are not a problem for Nigeria as much as production supply disruptions, which flare up in the Niger Delta.

⁸³ Klare, *Rising Powers, Shrinking Planet*, p. 154.

⁸⁴ International Energy Association (IEA), *Oil Market Report*, <http://omrpublic.iea.org/currentissues/full.pdf> 18 January 2012, p. 13.

⁸⁵ Chris Garman and Robert Johnston, "12 for 2012: oil price fall will squeeze producers' budget plans," *Financial Times*, January 11, 2012, <http://blogs.ft.com/beyond-brics/2012/01/11/12-for-2012-oil-price-fall-will-squeeze-producers-budget-plans/#ixzz1nREzcVul>.

While Nigeria has a budgetary cushion if oil prices fall, it lacks a diverse economic base, and faces ongoing ethnic clashes and unrest in the Niger Delta. According to the CIA Factbook, Nigeria receives about 80% of budgetary revenues from oil.⁸⁶ “Oil-rich Nigeria has been hobbled by political instability, corruption, inadequate infrastructure, and poor macroeconomic management but in 2008 began pursuing economic reforms. Nigeria's former military rulers failed to diversify the economy away from its overdependence on the capital-intensive oil sector, which provides 95% of foreign exchange earnings and about 80% of budgetary revenues.”

3. Pressing Areas of Political, Economic and Social Instability—Nigeria

The political, economic and social conditions in Nigeria have different levels of fragility, but under the Presidency of Goodluck Jonathan there are trends that suggest greater transparency and accountability by the Nigerian government. Of all the Type I Petrostates, including the three outliers—Kuwait, Iraq and the United Arab Emirates—Nigeria has the best democratic rating.⁸⁷ Although Nigeria is still considered “Partly Free” by Freedom House’s democracy rating, it may not have earned the highest “Free” appellation largely due to the historic inability for the Nigerian governments to settle ethnic questions and the legacy of corruption, which has centered on oil wealth. Notably, the Nigerian government acknowledged the issues of poverty and economic disparity as

⁸⁶ Central Intelligence Agency (CIA), CIA World Factbook, “AFRICA: NIGERIA,” February 8, 2012 [Last updated], <https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html>.

⁸⁷ See Freedom House’s *Freedom in the World 2012: The Arab Uprisings and Their Global Repercussions*, http://freedomhouse.org/sites/default/files/inline_images/FIW%202012%20Booklet--Final.pdf.

pressing areas of concern. The implementation of programs to alleviate the extreme poverty and corruption in the country, however, do not seem far-reaching, according to activists and environmentalists.

What is likely to be of greatest concern for Nigeria's political stability is the ongoing ethno-religious tensions—a complex and intricate problem that cannot be properly addressed in this paper. Nigeria's economic lifeblood is the oil industry and the potential for insurgents or militants in the Niger Delta to reassert themselves is a looming threat. The government in 2009 granted MEND amnesty, cash payments and training if they agreed to put down their weapons. However, U.S. EIA notes "...the lack of progress in job creation and economic development has led to increased bunkering and other criminal attacks, which can significantly damage oil infrastructure."⁸⁸ The functioning of the oil industry, as mentioned, has been jeopardized by MEND in the past, and has disrupted oil production on many occasions. The government's agreement with MEND is tenuous.

Overall, the most pressing social issue in Nigeria remains the ethno-religious tensions that have gone unabated under military regimes and democracies. Nigeria has various flashpoints including in the city of Kano, with increasing terrorism and radicalization and the continuing socio-economic tensions due to income inequality and poverty. Economically, Nigeria is one of the richest countries on the continent of Africa, but the oil-wealth has generally benefited the elite and well-connected Nigerians.

⁸⁸ U.S. IEA, "Country Analysis Briefs: Nigeria," August 2011, <http://www.eia.gov/EMEUCabs/Nigeria/pdf.pdf>, p. 2.

Alleviating the poor economic circumstances and ongoing ethno-religious tensions remain the two greatest challenges for Nigeria.

VENEZUELA

1. Oil Power—Venezuela

Oil production in Venezuela began in 1914 with the first commercial oil well, Zumaque I, on Lake Maracaibo.⁸⁹ Royal Dutch/Shell had begun oil exploration around 1913 and production began the subsequent year. Standard Oil of New Jersey would also become involved in Venezuela's oil production. In the 1920s, there was a flurry of oil well discoveries, notably the La Rosa field in the Maracaibo Basin. The Maracaibo Basin would prove to be one of the richest oil regions in the world and an easy source of wealth for Venezuela.

During its early days of oil wealth, General Juan Vincente Gomez's regime had negotiated oil concessions that were lopsided in favor of outside oil companies. Gomez's rule was characterized by graft, repression and severe mismanagement, but this would change dramatically once Gomez died. Under the new government, the leadership would be mindful of contracts that would benefit all Venezuelans—not only a single authoritarian leader. Oil contracts, would be renegotiated and "...Gomez's successors set out to reform the chaotic regulation of the industry and effect a wholesale revision in the contractual arrangements between the nations and the companies that produced its oil, including a reallocation of rents. The United States government was catalyst to this

⁸⁹ OPEC, "Venezuela: Venezuela Facts and Figures," 2012
http://www.opec.org/opec_web/en/about_us/171.htm.

process.”⁹⁰ Standard Oil of New Jersey astutely attempted to fend off the nationalization of the Venezuelan oil fields by providing a generous fifty-fifty oil concession.⁹¹ Eventually, in 1973, Venezuela voted to nationalize its oil industry and Petróleos de Venezuela (PDVSA) emerged in 1976.

Venezuela is the 13th largest oil producer in the world and one of the founding OPEC members.⁹² The amount of oil exported has decreased because “Over the last decade the share of oil consumption in the country’s total energy mix has risen from 32 percent to 44 percent, largely because the Venezuelan government subsidizes liquid fuels.”⁹³ The country’s greatest strength is its vast oil reserves, which are the second largest in the world. In 2011, Venezuela had 211 billion barrels of proven oil reserves.⁹⁴ Much of the oil reserves are, however, the extra-heavy oil, which is more expensive to produce.

2. Subsidies, Social Programs and Breakeven Oil Prices—Venezuela

In 2009, Venezuela provided approximately 15 billion in energy subsidies.⁹⁵ The bulk of those subsidies were for oil. The vast oil subsidies and social programs have become characteristic of the Chavez regime. In general, Hugo Chavez has been spending heavily in the run up to his fall 2012 election bid.⁹⁶ The break-even oil price in

⁹⁰ Yergin, *The Prize*, p. 416.

⁹¹ Ibid.

⁹² U.S. EIA, “Countries, Top World Oil Producers, 2010”.

⁹³ U.S. EIA, Country Analysis Briefs: Venezuela,” March 2011, <http://www.eia.gov/EMEUCabs/Venezuela/pdf.pdf>, p. 2.

⁹⁴ Ibid.

⁹⁵ IEA, *World Energy Outlook 2010, Presentation to the press, London, 9 November 2010*, p. 6.

⁹⁶ Garman and Johnston.

Venezuela will be affected by additional election year budgetary expenditures, and like most Type I Petrostates, Venezuela's economy is heavily reliant on the hydrocarbon sector. According to Steve LeVine, "Venezuela's budget requires some \$110 a barrel, and that is before President Hugo Chavez...presumably boosts state spending in the runup to October [2012] elections."⁹⁷

3. Pressing Areas of Political, Economic and Social Instability—Venezuela

Since Hugo Chavez came to power in 1999, there has been an occasionally tense relationship between the oil industry and President Chavez. Although NOC management usually complies with the needs of the government, PDVSA is somewhat of an anomaly. Steve LeVine writes: "The trouble has been that, since Chavez took power 13 years ago, Venezuela's oil production has fallen to 3 million barrels a day, 16 percent less than the 3.5 million barrels a day it produced in the 1990s. This has resulted from Chavez forcing out key members of the skilled labor force and management of the state oil company, known as PDVSA, and his marginalizing of the other source of oil patch expertise -- foreign oil companies such as Chevron and Shell."⁹⁸

⁹⁷ Steve LeVine, "[On top of the Arab Spring, petro-tyrants now face perniciously low oil prices](#)".

⁹⁸ Steve LeVine, "Is Venezuela on the cusp of a post-Chavez oil boom?" The Oil and the Glory, (blog) February 22, 2012, http://oilandglory.foreignpolicy.com/posts/2012/02/22/is_venezuela_on_the_cusp_of_a_post_chavez_oil_boom.

Chavez's mismanagement of the oil sector is all the more troubling since Venezuela has many mature oil fields and the need for technical expertise, which means the need to allow private oil companies to help with extraction technologies.

The management of the oil sector is one area of concern for Venezuela, but political instability also looms large. Already the main contender to President Chavez, Henrique Capriles, has been gaining in popularity. The 2012 Venezuelan presidential elections may showcase more disenchantment with the current political system.

Algeria

1. Oil Power—Algeria

Oil was discovered in Algeria in 1956. Subsequently, in 1962, Algeria gained its independence from France. According to OPEC, "Algeria's first commercial oil discovery was Edjelleh in 1956, followed immediately by the Hassi Messaoud oil field the same year. Production began in 1958. With an estimated 6.4 billion barrels of proven oil reserves, Hassi Messaoud is Algeria's largest oilfield, producing more than 400,000 b/d."⁹⁹

Algeria has strong oil fundamentals. The country produces high quality light crude oil and was the 15th largest oil producer in 2010.¹⁰⁰ Oil production has been growing since about 2003, and its total oil reserves are an estimated 12.2 billion barrels.¹⁰¹ Algeria's state-run energy company, Sonatrach, has larger oil and natural gas reserves

⁹⁹ OPEC, "Algeria: Algeria Facts and Figures" 2012, http://www.opec.org/opec_web/en/about_us/146.htm.

¹⁰⁰ U.S. IEA, "Countries: Top World Oil Producers 2010" <http://www.eia.gov/countries/index.cfm>.

¹⁰¹ U.S. IEA, "Country Analysis Briefs: Algeria," March 8, 2012, <http://www.eia.gov/EMEUCabs/Algeria/pdf.pdf>, p. 1.

than Royal Dutch Shell and BP. (See Chart 1.1) In addition, Algeria has been a member of OPEC since 1969.

2. Subsidies, Social Programs and Breakeven Oil Prices—Algeria

In 2009, Algeria provided approximately five billion in energy subsidies to its population—these were primarily oil subsidies.¹⁰² In light of the Arab Spring, President Abdelaziz Bouteflika has used subsidies to temper protests: “The Algerian government avoided the fate of President Hosni Mubarak in Egypt in part by using some of this cash on subsidies -- to reduce consumer prices and raise public sector salaries, for example.”¹⁰³

With higher public spending, it is unsurprising that Algeria has one of the highest break-even oil prices. According to the IMF, FT, Carnegie Research and Bank of America statistics, the break-even oil price for Algeria is \$98. This number comes in at the second highest breakeven oil price for Type I Petrostates—Russia is number one.

Diversification, like in all Type I Petrostates, is a slow-going process in Algeria. “Algeria has struggled to develop industries outside of hydrocarbons in part because of high costs and an inert state bureaucracy. The government's efforts to diversify the economy by attracting foreign and domestic investment outside the energy sector have done little to reduce high youth unemployment rates or

¹⁰² IEA, *World Energy Outlook 2010, Presentation to the press, London, 9 November 2010*, p. 6.

¹⁰³ James Fallon, “Is Algeria next?” *Foreign Policy*, November 22, 2011, http://eurasia.foreignpolicy.com/posts/2011/11/22/is_algeria_next.

to address housing shortages.”¹⁰⁴ This lack of diversification and steep increases in public spending mean that the country will have to depend on higher oil prices to manage its budgetary expenditures.

3. Pressing Areas of Political, Economic and Social Instability—Algeria

Algeria has three primary areas of concern that affect its political stability: governance, long-term socio-economic viability and social instability due to group conflict. In the beginning of 2011, Algeria was caught up in the Arab Spring, although less attention was paid to protests there than in other North African and Middle Eastern countries since the Algerian government was not toppled. In part, these Algerian protests were driven by governance issues, but also the lack of fundamental social services. The second potential area of instability is due to socio-economic factors since unemployment is high, corruption is rampant and there is poor allocation of social services. Economic challenges are exacerbated because of a youth bulge and housing problems. The third area of concern for Algeria is residual angst against the government resulting from unresolved political issues from the 1990s. Much of this angst manifests in terrorism against the government. All three factors threaten political stability, although President Bouteflika has tried to remedy some of the societal and political grievances, in part for his political survival.

Politically, Algeria remains a fragile country due to a societal backlash by those seeking a more transparent society and a youth demographic influenced by the Arab

¹⁰⁴ Central Intelligence Agency (CIA), CIA World Factbook, “AFRICA: ALGERIA,” February 15, 2012 [Last updated], <https://www.cia.gov/library/publications/the-world-factbook/geos/ag.html>.

Spring. The Bouteflika government has been forced to provide some democratic concessions, particularly in light of the flare ups in protests throughout Algeria around the time of the Arab Spring. Regarding democratic initiatives, President Bouteflika has proposed reforms that include greater freedom of the press.¹⁰⁵ Parliamentary elections are in spring 2012 and the presidential elections are in 2014. These events will be the real litmus test of whether or not the Bouteflika government is providing true democratic concessions.

Economically, Algeria is a medium income country that has benefited from high oil prices. Nonetheless, it has long-term structural and environmental sustainability challenges. The country has persistent high unemployment, little arable land, an acute shortage of housing and an increasingly polluted coast due to the petrochemical industry. As noted in the US State Department Background Note: Algeria, “Soil erosion--from overgrazing, other poor farming practices, and desertification--and the dumping of raw sewage, petroleum refining wastes, and other industrial effluents are leading to the pollution of rivers and coastal waters. The Mediterranean Sea, in particular, is becoming polluted from oil wastes, soil erosion, and fertilizer runoff. There are inadequate supplies of potable water.”¹⁰⁶ The Mediterranean Sea coast has been considered an underdeveloped area that may have become be a tourist attraction, but the pollution and lack of infrastructure has hampered efforts in this area.

¹⁰⁵ BBC, “Algeria's Bouteflika to end state TV and radio control,” September 13, 2011, <http://www.bbc.co.uk/news/world-africa-14901330>.

¹⁰⁶ U.S. State Department, “Background Note: Algeria,” January 23, 2012, <http://www.state.gov/r/pa/ei/bgn/8005.htm>.

Algeria is perhaps one of the Type I Petrostate least discussed in international news. However, throughout the 1990s, the country was in turmoil after the falsified elections of 1990 when the Islamic Salvation Front (FIS) was delegitimized by the government due to concerns that it would not sweep the elections.¹⁰⁷ The widespread chaos of political reprisals was even felt in France where the FIS retaliated, through subway bombings, against the French government's support of the incumbent Algerian government. Massive political instability and terrorism raged in the country in this turbulent decade:

In 1994, Liamine Zeroual, former Minister of Defense, was appointed Head of State by the High Council of State for a 3-year term. During this period, the Armed Islamic Group (GIA) launched terrorist campaigns against government figures and institutions to protest the banning of the Islamist parties. A breakaway GIA group--the Salafist Group for Preaching and Combat (GSPC)--also undertook terrorist activity in the country. Government officials estimate that more than 150,000 Algerians died during this period.¹⁰⁸

In 1999, Bouteflika won the election and ushered in a period of relative calm. There have been measures taken by President Bouteflika's government to address economic concerns: "At the start of his third term in office, President Bouteflika announced that his 5-year plan (2009-2014) would include an increase from \$120 billion to \$150 billion in spending to improve national infrastructure, create three million jobs, and build one million new homes."¹⁰⁹

There is a great onus on President Bouteflika to assess public sentiment and remedy many of the socio-economic challenges and persistent group grievances that his

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

country faces. Bouteflika helped manage the post-1990s era of stability, and perhaps he can do the same, especially with the help of high oil prices.

Conclusion

A cursory overview of the Type I Petrostates' oil histories, budgetary pressures, and political, economic and social concerns or conflicts, suggests two trends across the countries. Notably, there are budgetary constraints and concerns. All the petrostates profiled have NOCs, and therefore, each government enjoys significant oil profits. However, the volatility of the oil markets create uncertainty year-to-year for petrostates to meet their budgetary obligations when they forecast break-even oil prices. Uncertainty about the future of global oil consumption leaves petrostates on a precarious revenue path. Various oil industry predictions suggest that oil demand will flatten in the next 20-25 years but diversification has been slow and inconsistent. Adding to this uncertainty is that not one of the Type I Petrostates is diversifying its economy. Diversifying petroleum-dominated economies in the next decades is necessary but seems ambitious, particularly as each country is trying to manage domestic spending patterns, weaken opposition or dissent and generally remedy widespread social ills.

Another major trend is that in each country citizens are increasingly voicing their dissent and concern about their governments' ability to keep pace with their economic and political aspirations. Type I Petrostates may enjoy high-priced oil in the short-term, but their future economic and political viability is questionable. Citizens in Type I Petrostates are medium to high income states. With this affluence is an increasing ability for middle-class citizens of these states to connect across time and space with

expat communities and their fellow citizens. This means a better understanding, of course, of what is going on around them and around the world. Repression will hold less appeal, even when petrostate governments assist citizens in meeting their basic needs. Petrostate longevity is tied to the ability of these governments to diversify and provide citizens with significant concessions, some political, particularly in the face of diminishing oil revenues. The Type I Petrostates' ability to manage their populations' demands will require a delicate balancing act of managing expectations and diversifying their economies. Type I Petrostates can buy time to extend domestic stability and their main source of power; however, oil power is ephemeral.

The next chapter more fully evaluates the relationship between oil prices and levels of instability and stability in petrostates. Four indicators are identified to measure levels of instability, and the precarious standing of petrostates is brought to light.

CHAPTER IV METHODOLOGY AND DATA ANALYSIS

Overview

This dissertation centers on a principal hypothesis: Petrostates are susceptible to oil price fluctuations so much so that trends indicating political instability increase after oil revenues decrease. A working assumption is that oil independence is an eventuality for most energy *importing* states due to peak oil, extreme climate change, disruptive technology, or because of a combination of these or other factors.¹ Any moves towards oil independence by major oil importing states would result in decreasing oil revenues for petrostates. The loss of oil revenues would mean reductions in petrostates' expensive, decades-long subsidies, which have been used to quell dissatisfied populations. As previously stated, the central research question that arises from this proposition is: Do petrostates become unstable politically as oil revenues decrease, and if so, will eventual oil substitutes lead to major political destabilization, or petrostates becoming fragile or failed states? The first half of this chapter presents the methodology for this study, and the second half presents a general quantitative analysis of the data results from the New York Times (NYT) online archive.

The research design in this study includes a mixed method, quantitative and qualitative, approach. To bolster the findings, a triangulation research design is employed. Triangulation can provide more than one means of validation, and cross-check how the data collected approximates with the dissertation question posed. As John

¹ Chapter IV discusses some of the other factors that could affect petrostate stability such as youth bulges, high unemployment, income inequality and popular movements and uprisings.

W. Creswell and Viki L. Plano Clark suggest, "...a Triangulation Design is used...to bring together the strengths of both data sets [quantitative and qualitative] to compare or validate results or to confirm or corroborate quantitative results with qualitative findings."² The quantitative data results are presented initially, in the second half of this chapter, and a qualitative analysis is provided in Chapter III to contextualize and triangulate the data results.³ Through the Political Instability Indicators identified, this study offers a novel approach to measuring how oil prices impact political instability in petrostates. In addition, utilizing data event analysis, correlation analysis, and qualitative historical analysis provides a fuller picture of how to assess petrostate stability.

The research design is mixed method, but the approach could also aptly be described as policy research. Generally, there is an attempt to show a causal relationship between decreasing oil revenues in petrostates and political instability. However, since only correlation can be perceived, as opposed to causation, the attempt here is to infer trends in the charts based on indicators used to assess political instability in the six petrostates. This research can serve as a springboard for policy researchers to further test the Political Instability Indicators and assess political instability in individual petrostates or beyond. This study can inform policy-makers of the geopolitical consequences of oil and petrostates. The research may also contribute to work conducted by scholars in academia and even have some utility for analysts in the oil market.

² John W. Creswell and Vicki L. Plano Clark, *Designing and Conducting Mixed Method Research*, Sage Publications (Thousand Oaks, CA: 2007) p. 96.

³ A sample of how the test results were cross-checked is provided in Appendix I.

Part I. Methodological Overview

1. NYT Online Archive as Dataset, Faceted Search, the Political Instability Indicators and the European Media Monitor

One of the first research steps was the identification of a major dataset that would fulfill three criteria: it would lend itself to data event analysis, country specific searches and contain optimal search terms (or tags) to retrieve the desired results. The dataset that fulfilled the three criteria best was the NYT online archive, which runs from 1981 to the present day, contains nearly three million articles and searchable terms for both country and content.

In order to evaluate the utility of the NYT as a data source and the quality of the political instability indicators developed in this study, a comparative qualitative analysis of a similar program, the European Media Monitor (EMM) was conducted. The main objective was to evaluate how these two tools treat the subject of political instability or political unrest. To achieve this objective, there is a comparison of the four NYT political instability indicators and the EMM's "NewsBrief" and NewsExplorer". Initially, a brief comparison of these two tools presents their similarities, differences, strengths and weaknesses with respect to assessing political instability or unrest. Subsequently, a comparison of the general content of articles used to denote political instability in the NYT political instability indicators and the EMM's NewsBrief's and NewsExplorer's political instability category is presented. The findings can be found in Appendix II.

Overview of the EMM, NewsBrief and NewsExplorer

The EMM was created by the European Commission's Joint Research Centre. An in-house computer program was developed by the Joint Research Centre to efficiently monitor media and replace manual media monitoring previously done by the EU. The goals of this aggregated search engine were to provide better accuracy when monitoring the media, automate a very labor intensive task, and ultimately provide relevant, up-to-the-minute news at the disposal of policy makers in the EU, who could also gauge possible crises around the world. The EMM "... reports from news portals world-wide in 43 languages, classifies the articles, analyses the news texts by extracting information from them, aggregates the information, issues alerts and produces intuitive visual presentations of the information found."⁴ The EMM contains four main divisions, or content areas, for producing and analyzing news data: NewsBrief, NewsExplorer, MedSys, and EMM-Labs. NewsBrief and NewsExplorer, viewed together, offer similar capabilities to the NYT Archive and NYT Political Instability Indicators. According to the EMM website, "NewsBrief categorises all news into hundreds of customer-orientated subject domains and according to the countries mentioned in the articles. Users opt to see only news falling into specific subjects or concerning countries of their choice."⁵ NewsExplorer culls the news articles related to a particular event or subject and these news articles are grouped into "...clusters and displayed by cluster size. Users can see the people, organisations and locations mentioned most in today's news...NewsExplorer keeps track of who gets mentioned where and how often, who gets mentioned with which

⁴ See <http://emm.newsbrief.eu/overview.html#brief>.

⁵ Ibid.

other persons or countries, etc... The database contains information on close to 700,000 names, extracted and aggregated from tens of thousands of articles every day written in 19 languages.”⁶

Both the NYT online archive and program created to search for articles related to the Political Instability Indicators, as well as the EMM have a major advantage to traditional media monitoring that relies on cut and paste methods, news wire monitoring, or a combination of the two.

The NYT online archive was ultimately selected as the data source for this study, but both the NYT online archive and EMM are research tools that provide automated media monitoring. Previous manual searches that involved data event analysis or media monitoring had several drawbacks: 1) both were extremely time-consuming and labor intensive; 2) sometimes, if print media was solely used, this process would exclude major new sources such as CNN, the BBC or Al Jazeera that do not have print editions; 3) there is a subjective aspect to classifying articles, particularly when there are topics that may overlap or if there is a wide-range of classifications a person may not always select the most precise one, and finally, 4) a person needs topical knowledge, and/or language skills to read certain articles. On all counts, both the NYT online archive and EMM have clear advantages for automation and consistent article classification. Furthermore, both tools are able to use specified search criteria for the desired data results. The key advantage for the NYT online was its potential to conduct historical data analysis, whereas EMM was recently launched and its article search begins in 2002. The NYT’s online archive begins in 1981. A clear advantage that EMM has in terms of

⁶ Ibid.

research is its ability to cull articles from multiple sources—not the only the NYT, but since the NYT has a global news presence, it remains a suitable alternative to EMM.

Only recently, in 2009, the NYT released the [Article Search Application Programming Interface \(API\)](#), which provides the ability to automate searches and data retrieval (from the NYT online archive), based on provided search criteria. Along with standard keyword searching, the Article Search API also offers “faceted searching.”⁷ Each article in the NYT online archive is tagged and categorized by one or more descriptive facets and one or more geographic facets. Descriptive facets (des_facet) are “descriptive subject terms assigned by Times indexers.”⁸ Geographic facets (geo_facet) are “standardized names of geographic locations assigned by Times indexers.”⁹ Descriptive facets were used to identify political instability indicators and geographic facets were used to identify the articles related to a specific country.

The next step to investigating the research question was to find terms that denote political instability, drawn from literature on failing/failed states, political instability and other models that attempted to examine political destabilization.¹⁰ The terms frequently found in failed states literature were often events that denote political instability, such as civil wars or coup d’etat. Once this general list for political instability terms or phrases was completed, based on the failed state literature, the goal was to find matching terms or

⁷ Note: The advantage of the Article Search API is that it “...supports faceted searching, which can be much more powerful than standard keyword searching.”

http://developer.nytimes.com/docs/article_search_api#updates.

⁸ See http://developer.nytimes.com/docs/article_search_api#updates.

⁹ Ibid.

¹⁰ The terms identified in the NYT archive searchable terms: Demonstrations and Riots, Civil War and Guerilla Warfare, Coups D’etat and Attempted Coups D’etat, and Terrorism, were frequently found in the literature on failed states or political instability. Although not exclusively, Robert I. Rotberg and Lester R. Brown research on failed states was most helpful in generating a list of terms that denote political instability. Another reference is The Fund for Peace’s “Failed States Index.”

similar phrases from the descriptive facet values found in the NYT online archive. There are tens of thousands of descriptive facet values in the NYT archive, and once a completed list of facet values was obtained for each country, I selected the values that most closely matched the terms from the literature on failed states. The process of selecting facet values was made easier because the NYT search program that was created is able to automatically generate all the descriptive facet values (from highest to lowest frequency of a term) for a specific country. The final step in this process was to select the descriptive facet values from the NYT archive that overlapped with the common terms identified from the failed states and political instability literature. In Table 4.1, shown below, there were four descriptive facet values that nearly matched the failed states literature, and these four descriptive facet values (hereafter referred to as Political Instability Indicators) are the basis for testing the hypothesis.

Table 4.1 Tests on Political Instability Indicators

Tests	New York Times descriptive facet values	Time period	Number of articles
Test 1	DEMONSTRATIONS AND RIOTS	1981-2010	23,319
Test 2	TERRORISM	1981-2010	55,462
Test 3	CIVIL WAR AND GUERRILLA WARFARE	1983-2010	23,383
Test 4	COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT	1983-2010	2,452

2. Testing, Variables, Sampling and Control Group

The aim of testing is to assess, from 1981-2010, levels of political instability in petrostates, and its correlation to fluctuations in oil prices. Thus, a test would be run for each political instability indicator, as shown in Table 3.1. The next step was to identify the independent and dependent variable. In this study, the independent variable is a country and the dependent variable is the NYT publication frequency.¹¹

Purposive sampling was conducted to identify the independent variable. Purposive sampling, also known as judgment sampling, is an advantageous sampling method in this study since the entire population of petrostates, (Type I-III in the petrostate classification) includes 33 states. The petrostate classification is derived from the following definition: Petrostates are those states that produce two million or more barrels of oil per day and/or where oil rents¹² are over 10% of GDP.¹³ Purposive sampling was based on Type I Petrostates discussed in Chapter II.¹⁴ The following nine countries, shown in Table 3.2, were tested: Algeria, Iran, Iraq, Kuwait, Nigeria, Russia, Saudi Arabia, The United Arab Emirates and Venezuela.

¹¹ Publication frequency refers to the number of articles published in the NYT per year and that satisfied the search criteria.

¹² The World Bank definition of oil rents is "...the difference between the value of crude oil production at world prices and total costs of production." <http://data.worldbank.org/indicator/NY.GDP.PETR.RT.ZS>

¹³ Other scholars have used *at least* 10% of net oil revenues to GDP to characterize petrostates. See Jeff Colgan's definition in "Oil and Revolutionary Regimes: A Toxic Mix," Paper prepared for the International Political Economy Society, Annual Meeting, Philadelphia, PA, November 2008, [online] http://ncgg.princeton.edu/IPES/2008/papers/F13_paper2.pdf See also Ryan Kennedy's unpublished dissertation, *Lifting the Curse: Distribution and Power in Petro-states*, [online] <http://etd.ohiolink.edu/send-pdf.cgi/Kennedy%20Ryan.pdf?osu1211481058>, 2008, p. 19, which also uses 10 percent of oil revenues to GDP to define a country as highly dependent on oil revenues.

¹⁴ To review the Petrostate Classification see Chapter II, pages 6-8. Type I Petrostates were selected as they fulfill both criteria in the definition.

The last step was to select the control group. To compare petrostate political instability to world political instability, for each year, the control group identified was all the countries indexed by the New York Times (NYT) online archive from 1981-2010.

3. Data Retrieval Software Program Created for the NYT and the Data Collection

A computer program was written in Java language to retrieve the data from the NYT online archive. The program developed performs the following steps:

- 1) Constructs a search query based on specific criteria.
- 2) Executes a faceted search (The Article Search API returns only 10 records at a time; therefore, in some cases the program has to execute thousands of search requests to retrieve all the search results).
- 3) Parses and aggregates the search results. The returned articles are aggregated by month, based on their publication date and monthly and yearly counts are calculated.
- 4) Saves results. The set of data files is produced for each search query.

For each test, country specific searches were conducted based on the selected geographic facets, as shown in Table 4.2.

Table 4.2 Number of Articles Retrieved from the NYT

	Saudi Arabia	Russia	Iran	United Arab Emirates	Nigeria	Kuwait	Iraq	Venezuela	Algeria	World
DEMONSTRATIONS AND RIOTS	17	504	285	0	124	3	259	130	64	23,319
TERRORISM	224	816	233	11	16	14	7,114	2	268	55,462
CIVIL WAR AND GUERRILLA WARFARE	0	422	9	0	41	0	474	5	94	23,383
COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT	0	290	29	0	104	0	39	95	7	2,451
Total	241	2,032	556	11	285	17	7,886	232	433	104,615

In the case of Russia, there were three searches due to the country's name change, and the final search results were aggregated. A total of 48 data retrievals were performed. After reviewing the data, three countries were determined to be outliers: Kuwait, the United Arab Emirates and Iraq. Kuwait and the United Arab Emirates produced 75 or less search results over the period of 29 years. Instead Iraq, after being invaded by outside forces and because of continuing sectarian strife, produced excessively high results, particularly in the category of terrorism. The number of countries to be tested dropped from nine to six. The following six Type I Petrostates were ultimately selected for continued testing: Algeria, Iran, Nigeria, Russia, Saudi Arabia and Venezuela. See Table 4.3.

Table 4.3 Type I Petrostates Tested (Without Outliers) and New York Times Geographic Facets

Country	New York Times geo_facet
Russia	UNION OF SOVIET SOCIALIST REPUBLICS UNION OF SOVIET SOCIALIST REPUBLICS (USSR) RUSSIA
Saudi Arabia	SAUDI ARABIA
Venezuela	VENEZUELA
Nigeria	NIGERIA
Iran	IRAN
Algeria	ALGERIA
All countries	N/A

Finally, the data results were then aggregated by year. Subsequently, the results were transferred to Microsoft Excel for data analysis. All the table and charts are provided in Part II of this Chapter.

4. Further Considerations Regarding the NYT and Additional Sources

As mentioned earlier, the decision to use the NYT online archive as the main source for data collection was based on its utility for data event analysis, its country-specific search capabilities and the ability to manipulate data to retrieve the desired results. However, the use of the NYT online archive, which is a secondary source,

should also be discussed in terms of its importance as an international news source that tracks events across the world.¹⁵

Aside from technical data retrieval considerations, there were several news-specific reasons why the NYT was selected as the primary data source. Foremost, the NYT has wide-reaching international coverage of events and has become a globally recognized, reputable news source. Its reputation has been bolstered by having won 106 Pulitzer Prizes in journalism as of 2010. The global version of the New York Times is the International Herald Tribune (IHT) and is available in 180 countries.¹⁶ In addition, the IHT teamed up with the NYT to launch an online Global Edition of news at global.nytimes.com. Its presence in 180 countries makes the NYT the newspaper with the most global reach.

The NYT was the main source of information but two additional sources were used. The online archives of the World Bank, specifically the Indicators section, were used for statistics on petrostates.¹⁷ The online BP Statistical Review of World Energy 2011 was used for oil prices.¹⁸

5. Strengths and Limitations

One of the key strengths of the research is the development of Political Instability Indicators to test the hypothesis. These indicators provide a basis for further research and

¹⁵ A basic validity test was conducted to see if there is similar news reporting (in terms of which stories were covered) for two other news agencies: The Wall Street Journal (print media) and CNN (cable news media).

¹⁶ See <http://www.ihinfo.com/about/history.html>.

¹⁷ See <http://www.dataworldbank.org>.

¹⁸ See <http://www.bp.com/productlanding.do?categoryId=6929&contentId=7044622>

development into measuring political instability as it relates to petrostates and oil price fluctuations. Beyond testing this study's research question, the indicators are a springboard for enhancing the study of political instability, which is at a nascent stage. There are no widely used metrics to assess political stability and/or instability of a state. Also, the NYT online archive is a resource that can further be exploited for data manipulation and development of modeling for political forecasting.

The indicators may be a major strength of the research, but the ability to identify the descriptive facet values could be viewed as a limitation since there were occasions when failed-states-related terms were not found in the descriptive facet list. Another issue regarding the initial identification of the Political Instability Indicators was the ability for the facet values to capture broadly or too narrowly search results that were relevant for the tests. For example, the Indicator "Demonstrations and Riots" captured all articles that included the terms demonstrations and/or riots. In addition, the Indicator generally captured articles which reported on protests, since almost consistently the search results for Demonstrations and Riots included the term protests. However, there were occasions when only the term "protest" was found in an article, and in that case, since it was not a descriptive value found in the NYT, it was not captured in the search results. Also, regarding the NYT, notwithstanding its extensive international coverage, the newspaper may be unable to report on smaller but significant news events in, for example, small cities where the NYT has no affiliates to report on the news. Even when there is a major news presence like the NYT and other news media outlets, there is no way to fully assess the scope of events that would suggest political instability. Finally, there may be

underreporting, particularly in the case where events are sustained, reporting may peter out.

Another limitation to this research is that there was no testing or experiments conducted on Type II and Type III Petrostates. Type II Petrostates in particular are greatly dependent on oil revenues and are the most vulnerable group to oil prices.

One of the more outstanding limitations in this study is that the quantitative data analysis timeframe was 1981-2010 and did not extend to 2011 or 2012. This study reflects the most current available data at the time of this writing. However, since BP's oil prices were not available for 2011, a crucial year was missed for this investigation. Thus, the time frame does not account for the Arab Spring, or more specifically the uprisings in the Arab world, Northern Africa and demonstrations extended to Russia in January 2012. These events certainly shock the foundations of political stability in many petrostates. Additional investigation into why the relatively high oil prices of 2011, nonetheless, resulted in considerable turbulence should be investigated.

6. Methodological Summary

The methodological steps taken to test the hypothesis were the following. A database was identified that fulfilled criteria needed for a mixed methods approach. Before testing, the independent variables, i.e. Type I Petrostates and the World, were selected and the publication frequency was identified as the dependent variable. Once a computer program was developed, a list of the descriptive facets, which may also be described as tags or classifiers in the NYT online archive, was generated for data retrieval. At that time, the failed states literature was studied to identify terms that denote political

instability and would match or closely match terms found in the descriptive facet list. The political instability indicators (See Table 4.1) were selected if they corresponded to available descriptive facet values and commonly used terms or phrases that denoted political instability found in failed states literature. Once the four descriptive facets were identified that also matched the failed states literature list of terms, as shown in Table 4.2, the Political instability Indicators could be used for testing Type I Petrostates. After initial testing of the Political Instability Indicators, three countries were found to be outliers: Iraq, Kuwait and The United Arab Emirates. Next, the six Petrostate Type I states were further tested.

Once testing was complete, the publication frequency of the articles was then tallied up and later charted. The produced result data files were subsequently imported into Excel spreadsheets for charting. Based on these data results, which are presented in tables and charts in the following section, there is an assessment of the correlation between oil prices in each of the six petrostates and publication frequency.

7. Data Event Analysis (or Events Analysis)

Data event analysis and basic correlation analysis are the principle methods used to research oil price fluctuations and political instability. This study uses data event analysis as the principle method to analyze the data retrieved from the NYT. Data event analysis has been of interest to scholars since at least the mid-1970s. Some researchers in international affairs and global affairs have been particularly interested in this method for its potential to build forecasting models. One of the pioneers in this field was Charles A. McClelland, whose World Event/Interaction Survey (WEIS), formed the foundation for

much of data event analysis.¹⁹ There are various interpretations of what data event analysis is and multiple perspectives on its utility in global affairs or international affairs research. Generally, data event analysis is a research method by which events are tracked and measured within a specific time frame and area of inquiry. Its utility is wide-ranging, and in this study is applied to political instability. Edward E. Azar, another pioneer in the still evolving field of data event analysis, wrote early on that data event analysis and forecasting strategies “...have been aided by the following: (1) the growth in the quality and quantity of longitudinal data sets about the attributes and behavior of international actors, primarily nation-states; (2) the continuous improvements and sophistication of research methods in social science; and (3) high-speed computers, where many variables and large amounts of data can be processed.”²⁰ It is notable that the last point regarding high-speed computers is even more applicable today than when Azar wrote about this potential research method back in 1978. Thus, this study takes advantage of the online NYT archive and even more, a computer program that was developed to retrieve and parse large amounts of data that would not be possible manually.

Part II. Analysis of the Data Results

There are some general points to make initially about the following tables and charts, and a more specific analysis will follow some of the tables and charts. The

¹⁹ See Charles A. McClelland, (Principal Investigator) *World Event/Interaction Survey (WEIS) Project, 1966-1978*, <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/05211>.

²⁰ Edward E. Azar, “An Early Warning Model of International Relations,” p. 223 in Nazli Choueri and Thomas W. Robinson, eds. *Forecasting in International Relations: Theory, Methods, Problems, Prospects*. San Francisco: W.H. Freeman and Company, 1978.

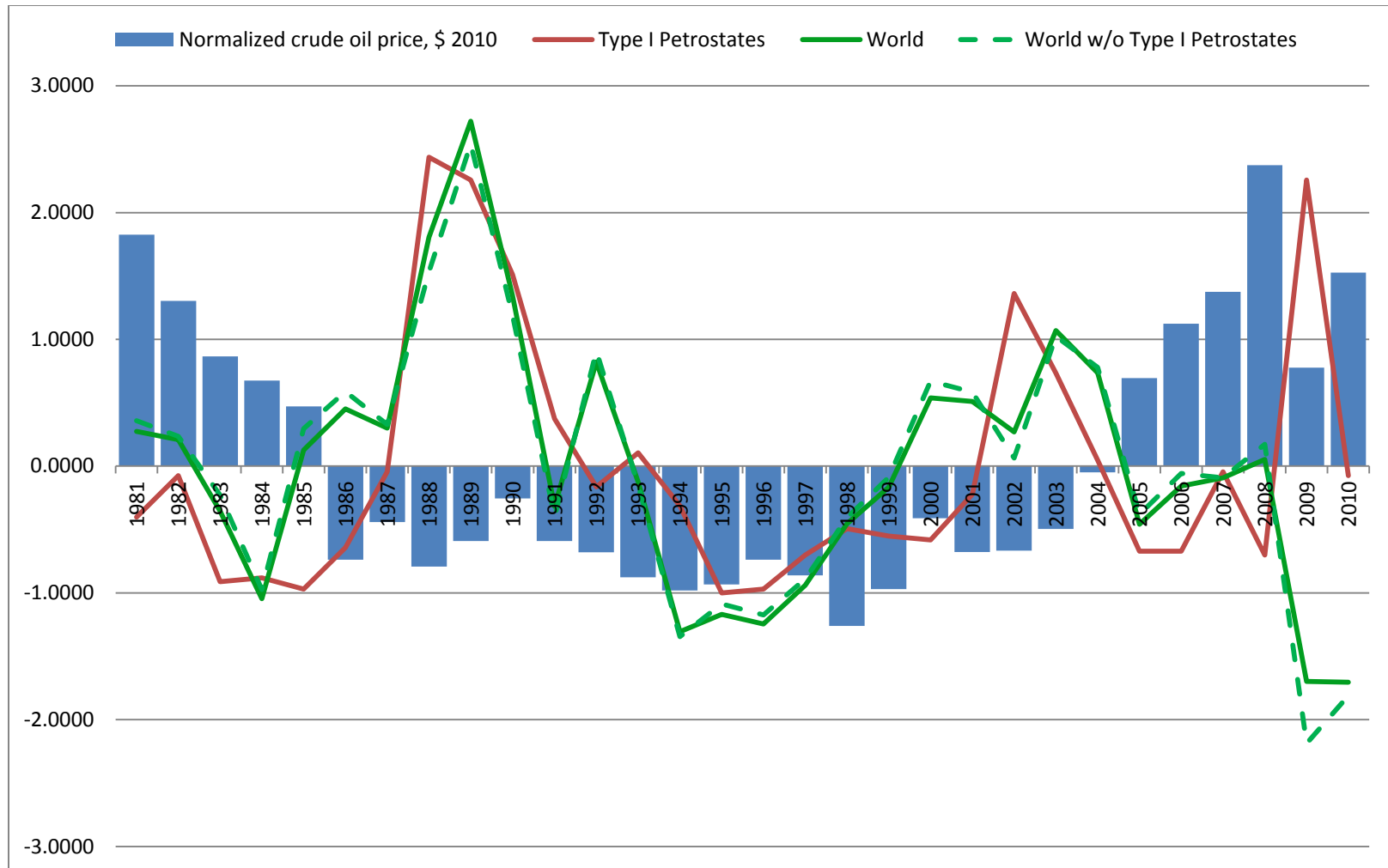
number of articles retrieved by the computer program is provided in the “Qty” columns for each country. The source for crude oil prices was BP, and all oil prices were adjusted for inflation and quoted in 2010 dollars. Because the countries in the test have different sizes and populations, it was useful to normalize the data for further analysis. Standard scores or z-values were calculated and specified in the columns of “Normalized Qty.” In order to provide a different perspective, data from all six countries is also aggregated in “Type I Petrostates” column.

Specifically, Charts 4.1-4.5 demonstrate standard scores for Type I Petrostates, all countries and oil prices. In Tables 4.8-4.11, there is an attempt to assess correlation between political instability and oil prices. In Tables 4.12-4.15, there is an assessment of the change in publication between high oil price and low oil price periods. Figure 4.5 is a summary of the change in publication frequency between high oil price and low oil price periods.

Table 4.4 Demonstrations and Riots Publications

Year	Crude oil price, \$ money of the day	Crude oil price, \$ 2010	Normalized crude oil price, \$ 2010	New York Times Articles, DEMONSTRATIONS AND RIOTS facet																	
				Russia		Saudi Arabia		Venezuela		Nigeria		Iran		Algeria		Type I Petrostates		World		World w/o Type I Petrostates	
				Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty
1981	\$35.93	\$86.19	1.8247	10	-0.2495	0	-0.4790	0	-0.4616	0	-0.9429	14	0.2262	0	-0.4863	24	-0.4027	837	0.2732	813	0.3583
1982	\$32.97	\$74.50	1.3033	28	0.4110	0	-0.4790	0	-0.4616	5	0.1986	2	-0.3771	0	-0.4863	35	-0.0738	823	0.2091	788	0.2358
1983	\$29.55	\$64.69	0.8659	4	-0.4697	1	0.3613	1	-0.3550	0	-0.9429	1	-0.4274	0	-0.4863	7	-0.9109	700	-0.3538	693	-0.2293
1984	\$28.78	\$60.40	0.6744	2	-0.5431	0	-0.4790	0	-0.4616	5	0.1986	1	-0.4274	0	-0.4863	8	-0.8810	549	-1.0448	541	-0.9735
1985	\$27.56	\$55.85	0.4715	4	-0.4697	0	-0.4790	0	-0.4616	0	-0.9429	1	-0.4274	0	-0.4863	5	-0.9707	805	0.1268	800	0.2946
1986	\$14.43	\$28.71	-0.7391	14	-0.1028	0	-0.4790	0	-0.4616	1	-0.7146	1	-0.4274	0	-0.4863	16	-0.6419	876	0.4517	860	0.5884
1987	\$18.44	\$35.39	-0.4413	30	0.4844	0	-0.4790	1	-0.3550	2	-0.4863	3	-0.3268	0	-0.4863	36	-0.0439	843	0.3007	807	0.3289
1988	\$14.92	\$27.51	-0.7927	99	3.0165	0	-0.4790	1	-0.3550	1	-0.7146	3	-0.3268	15	2.9384	119	2.4374	1172	1.8063	1053	1.5333
1989	\$18.23	\$32.05	-0.5901	92	2.7596	0	-0.4790	14	1.0309	5	0.1986	1	-0.4274	1	-0.2580	113	2.2580	1372	2.7216	1259	2.5420
1990	\$23.73	\$39.58	-0.2541	84	2.4661	2	1.2017	0	-0.4616	0	-0.9429	1	-0.4274	1	-0.2580	88	1.5106	1071	1.3441	983	1.1906
1991	\$20.00	\$32.03	-0.5912	35	0.6679	0	-0.4790	0	-0.4616	1	-0.7146	5	-0.2262	9	1.5685	50	0.3746	708	-0.3171	658	-0.4007
1992	\$19.32	\$30.03	-0.6803	2	-0.5431	1	0.3613	3	-0.1418	8	0.8836	6	-0.1760	12	2.2534	32	-0.1635	957	0.8224	925	0.9066
1993	\$16.97	\$25.61	-0.8773	31	0.5211	0	-0.4790	0	-0.4616	7	0.6553	2	-0.3771	1	-0.2580	41	0.1055	750	-0.1249	709	-0.1509
1994	\$15.82	\$23.27	-0.9816	4	-0.4697	2	1.2017	3	-0.1418	13	2.0251	3	-0.3268	2	-0.0297	27	-0.3130	492	-1.3057	465	-1.3456
1995	\$17.02	\$24.35	-0.9336	1	-0.5798	0	-0.4790	0	-0.4616	1	-0.7146	2	-0.3771	0	-0.4863	4	-1.0006	522	-1.1684	518	-1.0861
1996	\$20.67	\$28.72	-0.7384	1	-0.5798	1	0.3613	2	-0.2484	1	-0.7146	0	-0.4776	0	-0.4863	5	-0.9707	505	-1.2462	500	-1.1743
1997	\$19.09	\$25.94	-0.8627	4	-0.4697	0	-0.4790	1	-0.3550	3	-0.2580	4	-0.2765	2	-0.0297	14	-0.7016	572	-0.9395	558	-0.8903
1998	\$12.72	\$17.01	-1.2609	5	-0.4330	1	0.3613	1	-0.3550	12	1.7968	1	-0.4274	1	-0.2580	21	-0.4924	678	-0.4544	657	-0.4056
1999	\$17.97	\$23.52	-0.9705	0	-0.6165	0	-0.4790	0	-0.4616	1	-0.7146	16	0.3268	2	-0.0297	19	-0.5522	741	-0.1661	722	-0.0873
2000	\$28.50	\$36.08	-0.4102	1	-0.5798	0	-0.4790	2	-0.2484	8	0.8836	7	-0.1257	0	-0.4863	18	-0.5821	895	0.5386	877	0.6716
2001	\$24.44	\$30.10	-0.6772	1	-0.5798	0	-0.4790	4	-0.0352	5	0.1986	5	-0.2262	15	2.9384	30	-0.2233	889	0.5112	859	0.5835
2002	\$25.02	\$30.33	-0.6668	4	-0.4697	1	0.3613	42	4.0160	13	2.0251	22	0.6285	1	-0.2580	83	1.3611	836	0.2686	753	0.0645
2003	\$28.83	\$34.17	-0.4957	1	-0.5798	6	4.5630	29	2.6301	11	1.5685	15	0.2765	0	-0.4863	62	0.7333	1011	1.0695	949	1.0241
2004	\$38.27	\$44.17	-0.0495	8	-0.3229	1	0.3613	12	0.8177	12	1.7968	5	-0.2262	1	-0.2580	39	0.0457	938	0.7354	899	0.7793
2005	\$54.52	\$60.87	0.6955	9	-0.2862	1	0.3613	0	-0.4616	1	-0.7146	4	-0.2765	0	-0.4863	15	-0.6717	677	-0.4590	662	-0.3811
2006	\$65.14	\$70.46	1.1232	6	-0.3963	0	-0.4790	1	-0.3550	0	-0.9429	8	-0.0754	0	-0.4863	15	-0.6717	743	-0.1570	728	-0.0579
2007	\$72.39	\$76.13	1.3760	13	-0.1394	0	-0.4790	11	0.7111	4	-0.0297	8	-0.0754	0	-0.4863	36	-0.0439	757	-0.0929	721	-0.0922
2008	\$97.26	\$98.50	2.3738	5	-0.4330	0	-0.4790	1	-0.3550	3	-0.2580	5	-0.2262	0	-0.4863	14	-0.7016	789	0.0535	775	0.1722
2009	\$61.67	\$62.68	0.7762	3	-0.5064	0	-0.4790	1	-0.3550	0	-0.9429	108	4.9522	1	-0.2580	113	2.2580	406	-1.6992	293	-2.1878
2010	\$79.50	\$79.50	1.5261	3	-0.5064	0	-0.4790	0	-0.4616	1	-0.7146	31	1.0809	0	-0.4863	35	-0.0738	405	-1.7038	370	-1.8108

Figure 4.1 Demonstrations and Riots, Aggregated Publication Results, 1981-2010



Description of Figure 4.1 Demonstrations and Riots, Aggregated Publication Results, 1981-2010

In each histogram, Figures 4.1-4.4, the blue bars represent oil prices. From 1981-1985, oil prices were above average; from 1986-2004 oil prices were below average; from 2005-2010 oil prices were above average.¹ The Type I Petrostates are indicated by the red line, and The World is indicated by the green line.

Four major spikes in publication frequency occurred for the Type I Petrostates in 1988, 1989, 2002 and 2009. Three spikes for publication frequency occurred for the World in 1989, 1992 and 2003. Regarding the Type I Petrostates, the major events that are likely to have contributed to the four spikes of article publication on demonstrations and riots are discussed.

In 1988, there were 99 articles related to demonstrations and riots in Russia alone. It should be clarified that Russia was a republic of the Soviet Union, but nonetheless, Russia is an umbrella term used throughout the study.² (See Table 4.3.) There were no other Type I Petrostates with such a high number of reported articles on demonstrations and riots. Algeria had the second highest number of articles with a mere 15. The total number of articles on demonstrations and riots in 1988 in all Type I Petrostates was 119. This leads to the question: What major event occurred in the Soviet Union to contribute to the high number of demonstrations and riots?

In 1988, according to several of the NYT articles retrieved, the citizens across the Soviet Union's 15 republics were starting to assert national aspirations, specifically for statehood. There were several demonstrations—the first of their kind—in the Baltic

¹ Based on the BP data, oil prices were calculated for the period of 1981-2010 (in 2010 \$) to be an average of \$45.28.

² Note that for the purposes of data retrieval, and references throughout this study, Russia is sometimes used interchangeably for the Soviet Union.

countries, Georgia, Ukraine, Moldova and Belarus. In particular, there were frequent demonstrations and riots in Armenia and Azerbaijan where clashes over Nagorno-Karabakh had begun the same year. In Armenia, in February, Armenians held daily demonstrations in the capital Yerevan. Therefore, the spike in articles reported was clearly tied to the sharp uptick in demonstrations and riots across the Soviet Union's republics where many citizens asserted their national aspirations for statehood.

In 1989, a similarly high number of articles were reported on in Russia or the Soviet Union—this time there were 92 articles. The second largest number of articles, 14, was reported in Venezuela. The total number of articles for the Type I Petrostates was 113. In 1989, there was an intensification of the demonstrations and riots throughout the Soviet Union republics. Demonstrations became more violent as in the case of Georgia, and since the fighting in Nagorno-Karabakh continued. Here too, there reporting of demonstrations and riots in the Soviet Union showcased the growing political instability of the Soviet Union.

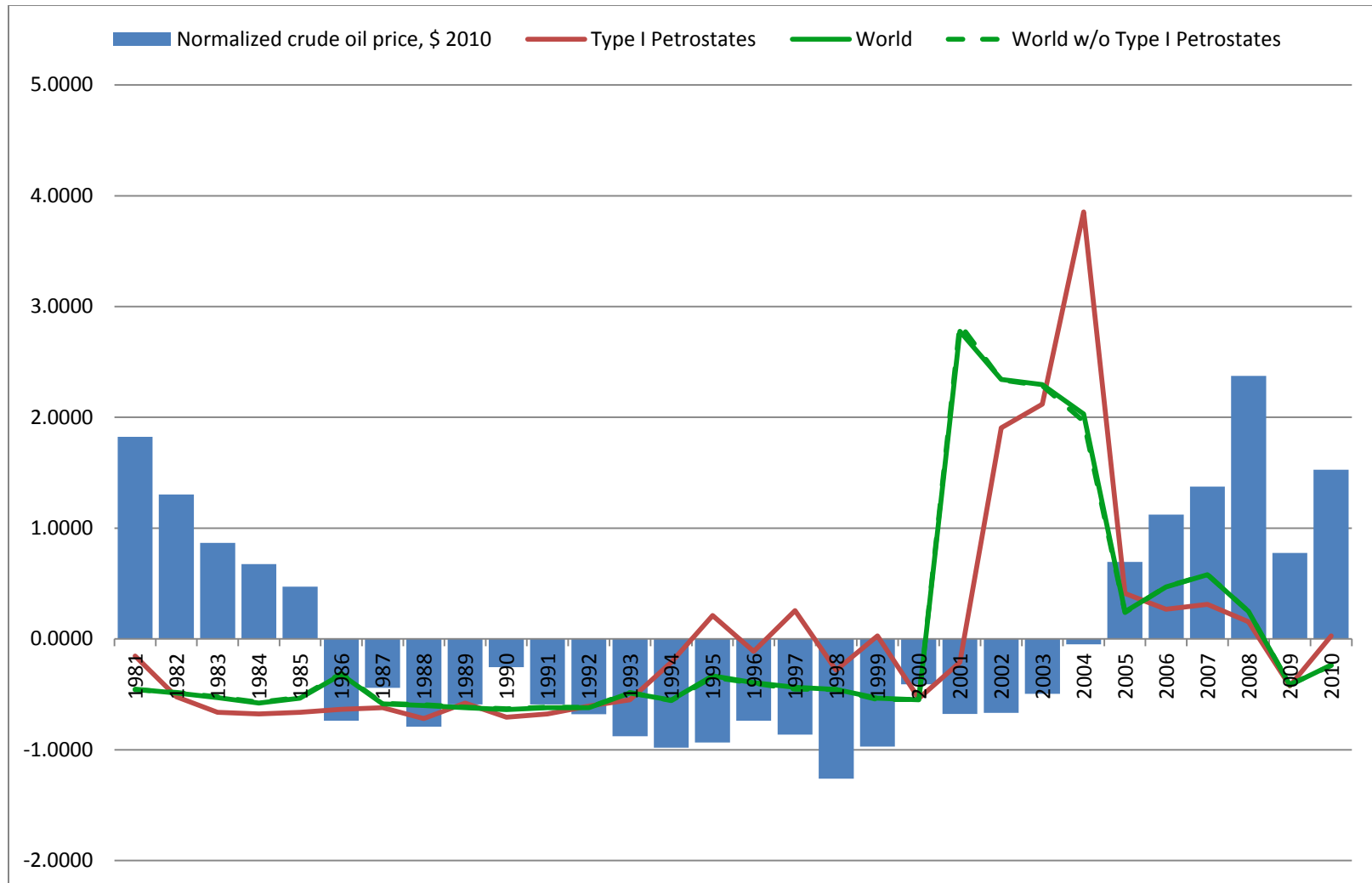
The next uptick in publications about demonstration and riots occurred in 2002, and this time there were 42 articles on Venezuela. The second highest number of articles was in Iran with 22 articles reported. The total number of articles for Type I Petrostates was 83. The circumstances leading to the high number of demonstrations and riots in Venezuela surrounded the failed coup of Hugo Chavez. Subsequently, there were mass demonstrations in April to restore Chavez to power. In this case, the demonstrations and riots were in support of a restoration of power to the status quo—not an overturning of the status quo.

The last major spike for the demonstrations and riots in the petrostates occurred in 2009. In the Type I Petrostates, the uptick in demonstrations and riots was especially pronounced in Iran. There were 108 articles published for Iran alone, and the second largest number of articles was only 3 in Russia. The main reason for the large number of articles was that Iran faced a political crisis from June 2009 until February 2010—an uprising that became known as “the Green Revolution”. Sustained, months long protests occurred after the disputed election of President Mahmoud Ahmadinejad. Protester backed Mir-Hossein Mousavi. The frequent demonstrations and riots in Iran explain the spike in publication in 2009.

Table 4.5 Terrorism Publications

Year	Crude oil price, \$ money of the day	Crude oil price, \$ 2010	Normalized crude oil price, \$ 2010	New York Times Articles, TERRORISM facet																	
				Russia		Saudi Arabia		Venezuela		Nigeria		Iran		Algeria		Type I Petrostates		World		World w/o Type I Petrostates	
				Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty
1981	\$35.93	\$86.19	1.8247	28	0.0154	0	-0.4686	0	-0.2800	0	-0.4775	13	0.6167	0	-0.6659	41	-0.1549	668	-0.4530	627	-0.4581
1982	\$32.97	\$74.50	1.3033	2	-0.4862	0	-0.4686	0	-0.2800	0	-0.4775	13	0.6167	0	-0.6659	15	-0.5220	576	-0.4883	561	-0.4839
1983	\$29.55	\$64.69	0.8659	2	-0.4862	0	-0.4686	0	-0.2800	0	-0.4775	3	-0.5625	0	-0.6659	5	-0.6631	468	-0.5297	463	-0.5223
1984	\$28.78	\$60.40	0.6744	2	-0.4862	0	-0.4686	0	-0.2800	0	-0.4775	2	-0.6804	0	-0.6659	4	-0.6773	343	-0.5777	339	-0.5709
1985	\$27.56	\$55.85	0.4715	4	-0.4476	0	-0.4686	0	-0.2800	0	-0.4775	1	-0.7983	0	-0.6659	5	-0.6631	457	-0.5339	452	-0.5266
1986	\$14.43	\$28.71	-0.7391	0	-0.5248	0	-0.4686	0	-0.2800	0	-0.4775	7	-0.0908	0	-0.6659	7	-0.6349	1010	-0.3218	1003	-0.3108
1987	\$18.44	\$35.39	-0.4413	2	-0.4862	0	-0.4686	0	-0.2800	0	-0.4775	6	-0.2087	0	-0.6659	8	-0.6208	321	-0.5861	313	-0.5810
1988	\$14.92	\$27.51	-0.7927	1	-0.5055	0	-0.4686	0	-0.2800	0	-0.4775	0	-0.9163	0	-0.6659	1	-0.7196	284	-0.6003	283	-0.5928
1989	\$18.23	\$32.05	-0.5901	7	-0.3897	0	-0.4686	0	-0.2800	0	-0.4775	4	-0.4446	0	-0.6659	11	-0.5784	234	-0.6195	223	-0.6163
1990	\$23.73	\$39.58	-0.2541	0	-0.5248	0	-0.4686	0	-0.2800	0	-0.4775	0	-0.9163	2	-0.5168	2	-0.7055	186	-0.6379	184	-0.6316
1991	\$20.00	\$32.03	-0.5912	4	-0.4476	0	-0.4686	0	-0.2800	0	-0.4775	0	-0.9163	0	-0.6659	4	-0.6773	229	-0.6214	225	-0.6155
1992	\$19.32	\$30.03	-0.6803	0	-0.5248	0	-0.4686	1	3.7200	0	-0.4775	2	-0.6804	6	-0.2185	9	-0.6067	230	-0.6210	221	-0.6171
1993	\$16.97	\$25.61	-0.8773	0	-0.5248	0	-0.4686	0	-0.2800	0	-0.4775	3	-0.5625	10	0.0798	13	-0.5502	579	-0.4871	566	-0.4820
1994	\$15.82	\$23.27	-0.9816	0	-0.5248	1	-0.4059	0	-0.2800	0	-0.4775	2	-0.6804	34	1.8695	37	-0.2114	409	-0.5523	372	-0.5579
1995	\$17.02	\$24.35	-0.9336	18	-0.1775	1	-0.4059	0	-0.2800	0	-0.4775	4	-0.4446	44	2.6152	67	0.2122	979	-0.3337	912	-0.3465
1996	\$20.67	\$28.72	-0.7384	16	-0.2161	9	0.0960	0	-0.2800	1	0.4234	4	-0.4446	14	0.3781	44	-0.1125	822	-0.3939	778	-0.3990
1997	\$19.09	\$25.94	-0.8627	2	-0.4862	19	0.7233	0	-0.2800	2	1.3243	1	-0.7983	46	2.7644	70	0.2546	709	-0.4372	639	-0.4534
1998	\$12.72	\$17.01	-1.2609	4	-0.4476	6	-0.0922	0	-0.2800	0	-0.4775	4	-0.4446	18	0.6764	32	-0.2819	662	-0.4553	630	-0.4569
1999	\$17.97	\$23.52	-0.9705	46	0.3627	1	-0.4059	0	-0.2800	0	-0.4775	5	-0.3267	2	-0.5168	54	0.0287	455	-0.5347	401	-0.5466
2000	\$28.50	\$36.08	-0.4102	10	-0.3319	0	-0.4686	0	-0.2800	0	-0.4775	4	-0.4446	0	-0.6659	14	-0.5361	415	-0.5500	401	-0.5466
2001	\$24.44	\$30.10	-0.6772	26	-0.0232	3	-0.2804	0	-0.2800	0	-0.4775	2	-0.6804	6	-0.2185	37	-0.2114	9087	2.7769	9050	2.8404
2002	\$25.02	\$30.33	-0.6668	140	2.1763	26	1.1625	0	-0.2800	0	-0.4775	11	0.3809	10	0.0798	187	1.9064	7951	2.3411	7764	2.3368
2003	\$28.83	\$34.17	-0.4957	96	1.3274	73	4.1110	0	-0.2800	2	1.3243	29	2.5035	2	-0.5168	202	2.1182	7834	2.2962	7632	2.2851
2004	\$38.27	\$44.17	-0.0495	246	4.2215	47	2.4799	0	-0.2800	1	0.4234	25	2.0318	6	-0.2185	325	3.8547	7140	2.0300	6815	1.9651
2005	\$54.52	\$60.87	0.6955	54	0.5171	15	0.4724	0	-0.2800	1	0.4234	9	0.1450	2	-0.5168	81	0.4099	2488	0.2453	2407	0.2390
2006	\$65.14	\$70.46	1.1232	42	0.2855	5	-0.1550	0	-0.2800	0	-0.4775	16	0.9705	8	-0.0694	71	0.2687	3072	0.4693	3001	0.4716
2007	\$72.39	\$76.13	1.3760	12	-0.2933	5	-0.1550	0	-0.2800	5	4.0270	22	1.6781	30	1.5712	74	0.3110	3360	0.5798	3286	0.5832
2008	\$97.26	\$98.50	2.3738	4	-0.4476	5	-0.1550	1	3.7200	0	-0.4775	29	2.5035	24	1.1238	63	0.1557	2494	0.2476	2431	0.2484
2009	\$61.67	\$62.68	0.7762	10	-0.3319	6	-0.0922	0	-0.2800	2	1.3243	4	-0.4446	0	-0.6659	22	-0.4231	765	-0.4158	743	-0.4127
2010	\$79.50	\$79.50	1.5261	38	0.2084	2	-0.3432	0	-0.2800	2	1.3243	8	0.0271	4	-0.3676	54	0.0287	1235	-0.2355	1181	-0.2411

Figure 4.2 Terrorism, Aggregated Publication Results, from 1981-2010



Description Figure 4.2 Terrorism, Aggregated Publication Results, from 1981-2010

The testing results for terrorism showed four spikes in publication frequency. Two small spikes in publication frequency occurred for the Type I Petrostates in 1995 and 1997, and a major spike occurred in 2004. There was only one major spike for the World in 2001. 2001 was also the same year when there was a notable divergence between the Type I Petrostate, which had only 37 articles published, compared to the unusually high World publication frequency of 9087 articles. Regarding the Type I Petrostates, there are several events that contributed to the two small spikes for articles on terrorism in 1995 and 1997 and the larger spike in articles published in 2004.

In 1995, in Algeria, there were 44 articles on terrorism. Russia was in second place with 18. There were a total of 67 articles about terrorism for all Type I Petrostates. In that year in Algeria, according to several of the NYT articles retrieved, a civil insurrection that began in the early 1990s was ongoing in the country. There was an uptick in domestic terrorism during the lead up to the controversial election of President Liamine Zeroul in November 1995. Earlier, in 1995, a string of assassinations of journalists and police officers contributed to the high number of terrorism articles. Russia had the second highest number of articles on terrorism in 1995, and this is because 1995 was the height of the first civil war in Chechnya.

In 1997, 46 articles were reported on in Algeria. The second largest number of articles, 19, was reported in Saudi Arabia. The total number of articles for the Type I Petrostates was 70. In Algeria, the articles from the NYT report frequent violence perpetrated by armed groups opposing the Algerian government and military. The target of the terrorists, however, was not only government and military officials, but often times the terrorist attacks were indiscriminate and civilians were targeted. In this same year in

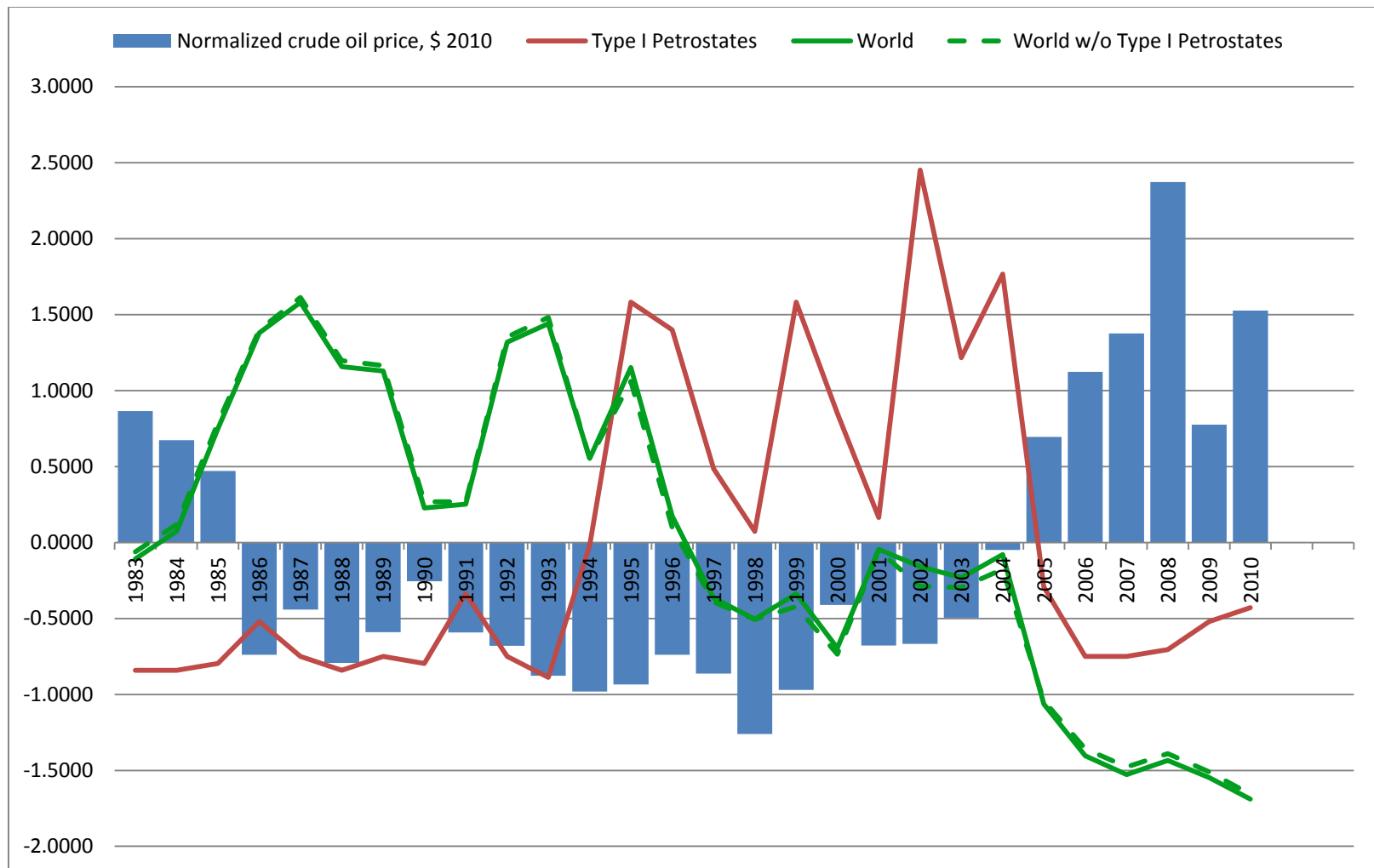
Saudi Arabia there were continuing negotiations between the US and Saudi Arabia regarding finding and prosecuting the Saudi Arabian terrorists suspected of killing 19 American servicemen in 1996. This year there were also several letter bombs sent to a newspaper owned by a Saudi prince.

The third uptick in publications occurred in 2004, and this time there were 246 articles in Russia. Saudi Arabia had 47 articles published related to terrorism—the second highest number. The total number of articles for Type I Petrostates was 325. In Moscow in February 2004 bomb exploded outside a subway killing more than 40 people and seriously injuring approximately 130 people. This year there were also a string of bombings that killed at least 15 people across Russia and assassinations in Chechnya. The widespread political turbulence and domestic terrorism explains that high number of reports on terrorism. In Saudi Arabia in 2004 there was reporting about several foreigners who had been targeted and killed by terrorists, and an American engineer was held hostage and threatened with execution. There were also several attacks on oil installations.

Table 4.6 Civil War and Guerrilla Warfare Publication

Year	Crude oil price, \$ money of the day	Crude oil price, \$ 2010	Normalized crude oil price, \$ 2010	New York Times Articles, CIVIL WAR AND GUERRILLA WARFARE facet																	
				Russia		Saudi Arabia		Venezuela		Nigeria		Iran		Algeria		Type I Petrostates		World		World w/o Type I Petrostates	
				Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty
1983	\$29.55	\$64.69	0.8659	0	-0.7453	0	0.0000	1	1.7083	0	-0.5840	1	0.7907	0	-0.5572	2	-0.8413	792	-0.1075	790	-0.0613
1984	\$28.78	\$60.40	0.6744	0	-0.7453	0	0.0000	0	-0.3750	0	-0.5840	2	1.9535	0	-0.5572	2	-0.8413	865	0.0746	863	0.1198
1985	\$27.56	\$55.85	0.4715	2	-0.6464	0	0.0000	0	-0.3750	0	-0.5840	1	0.7907	0	-0.5572	3	-0.7955	1135	0.7481	1132	0.7873
1986	\$14.43	\$28.71	-0.7391	5	-0.4980	0	0.0000	0	-0.3750	0	-0.5840	4	4.2791	0	-0.5572	9	-0.5210	1388	1.3792	1379	1.4002
1987	\$18.44	\$35.39	-0.4413	1	-0.6958	0	0.0000	0	-0.3750	2	0.2160	1	0.7907	0	-0.5572	4	-0.7498	1469	1.5812	1465	1.6136
1988	\$14.92	\$27.51	-0.7927	1	-0.6958	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	1	-0.3914	2	-0.8413	1299	1.1572	1297	1.1967
1989	\$18.23	\$32.05	-0.5901	4	-0.5475	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	0	-0.5572	4	-0.7498	1288	1.1297	1284	1.1645
1990	\$23.73	\$39.58	-0.2541	3	-0.5969	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	0	-0.5572	3	-0.7955	926	0.2267	923	0.2687
1991	\$20.00	\$32.03	-0.5912	12	-0.1518	0	0.0000	0	-0.3750	1	-0.1840	0	-0.3721	0	-0.5572	13	-0.3381	936	0.2517	923	0.2687
1992	\$19.32	\$30.03	-0.6803	1	-0.6958	0	0.0000	0	-0.3750	1	-0.1840	0	-0.3721	2	-0.2255	4	-0.7498	1364	1.3193	1360	1.3531
1993	\$16.97	\$25.61	-0.8773	1	-0.6958	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	0	-0.5572	1	-0.8870	1413	1.4415	1412	1.4821
1994	\$15.82	\$23.27	-0.9816	10	-0.2507	0	0.0000	0	-0.3750	1	-0.1840	0	-0.3721	9	0.9353	20	-0.0178	1057	0.5535	1037	0.5516
1995	\$17.02	\$24.35	-0.9336	46	1.5297	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	9	0.9353	55	1.5833	1297	1.1522	1242	1.0603
1996	\$20.67	\$28.72	-0.7384	48	1.6286	0	0.0000	0	-0.3750	1	-0.1840	0	-0.3721	2	-0.2255	51	1.4003	905	0.1743	854	0.0975
1997	\$19.09	\$25.94	-0.8627	5	-0.4980	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	26	3.7546	31	0.4854	688	-0.3670	657	-0.3913
1998	\$12.72	\$17.01	-1.2609	3	-0.5969	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	19	2.5937	22	0.0737	633	-0.5042	611	-0.5055
1999	\$17.97	\$23.52	-0.9705	47	1.5791	0	0.0000	1	1.7083	1	-0.1840	0	-0.3721	6	0.4378	55	1.5833	700	-0.3370	645	-0.4211
2000	\$28.50	\$36.08	-0.4102	36	1.0351	0	0.0000	0	-0.3750	1	-0.1840	0	-0.3721	2	-0.2255	39	0.8513	557	-0.6937	518	-0.7363
2001	\$24.44	\$30.10	-0.6772	19	0.1944	0	0.0000	0	-0.3750	1	-0.1840	0	-0.3721	4	0.1061	24	0.1651	817	-0.0452	793	-0.0539
2002	\$25.02	\$30.33	-0.6668	71	2.7661	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	3	-0.0597	74	2.4524	772	-0.1574	698	-0.2896
2003	\$28.83	\$34.17	-0.4957	38	1.1340	0	0.0000	2	3.7917	6	1.8160	0	-0.3721	1	-0.3914	47	1.2173	742	-0.2323	695	-0.2970
2004	\$38.27	\$44.17	-0.0495	46	1.5297	0	0.0000	0	-0.3750	10	3.4160	0	-0.3721	3	-0.0597	59	1.7662	803	-0.0801	744	-0.1755
2005	\$54.52	\$60.87	0.6955	12	-0.1518	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	2	-0.2255	14	-0.2923	409	-1.0629	395	-1.0415
2006	\$65.14	\$70.46	1.1232	3	-0.5969	0	0.0000	0	-0.3750	0	-0.5840	0	-0.3721	1	-0.3914	4	-0.7498	272	-1.4046	268	-1.3566
2007	\$72.39	\$76.13	1.3760	0	-0.7453	0	0.0000	0	-0.3750	1	-0.1840	0	-0.3721	3	-0.0597	4	-0.7498	223	-1.5269	219	-1.4782
2008	\$97.26	\$98.50	2.3738	1	-0.6958	0	0.0000	0	-0.3750	4	1.0160	0	-0.3721	0	-0.5572	5	-0.7040	260	-1.4346	255	-1.3889
2009	\$61.67	\$62.68	0.7762	3	-0.5969	0	0.0000	1	1.7083	4	1.0160	0	-0.3721	1	-0.3914	9	-0.5210	215	-1.5468	206	-1.5104
2010	\$79.50	\$79.50	1.5261	4	-0.5475	0	0.0000	0	-0.3750	7	2.2160	0	-0.3721	0	-0.5572	11	-0.4296	158	-1.6890	147	-1.6568

Figure 4.3 Civil War and Guerrilla Warfare, Aggregated Publication Results, from 1983-2010



Description of Figure 4.3 Civil War and Guerrilla Warfare, Aggregated Publication Political Instability Indicators, from 1983-2010

The testing results for civil war and guerrilla warfare produced seven major spikes in publication frequency. Four spikes in publication frequency occurred for the Type I Petrostates in 1995, 1999, 2002 and 2004. There were three major spikes for the World in 1987, 1993 and 1995. There was a significant divergence between the Type I Petrostate and the World from 1984-1994. Regarding the Type I Petrostates, there are several events that will be discussed that contributed to the four major spikes.

In 1995, in Russia, there were 46 articles published on civil war and guerrilla warfare and Algeria was in second place with nine articles published. There were a total of 55 articles for all the Type I Petrostates. As previously mentioned, 1995 was the height of the first Chechen war in Russia. In Algeria, the 1990s were generally turbulent and marked by terrorism. In this year Algerian rebel and terrorist groups attempted to upset the November 1995 presidential elections.

In 1999, a spike in publication frequency occurred in Russia. There were 47 articles related to civil wars and guerrilla warfare. The second highest number came from Algeria with 9 articles published. The total number of articles for Type I Petrostate published was 55. In Russia, the spike in articles related to civil wars and guerrilla warfare coincided with the start and more specifically the battle phase of the “Second Chechen War” that Russia initiated.

In 2002, Russia had the largest number of articles published related to civil wars and guerrilla warfare. There were a total of 74 articles published about civil wars and guerrilla warfare. There were 71 articles concerning Russia and only three articles

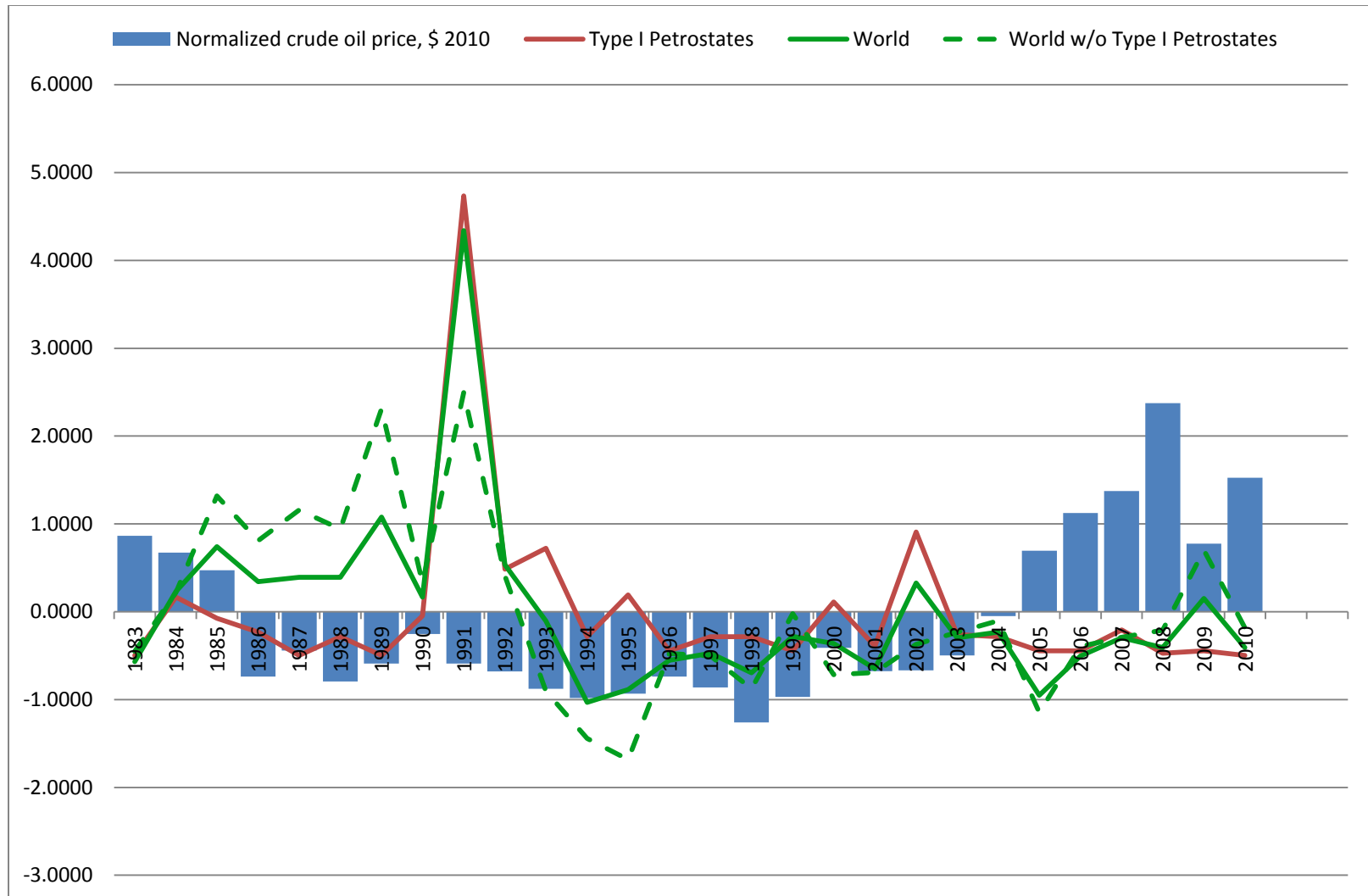
concerning Algeria under this Political Instability Indicator. In Russia, in this year, there was the continuing civil war in Chechnya and increasing unrest, including terrorism, in the Russian republics of Ingushetia and Dagestan. The infamous hostage taking by Chechen terrorists of a Moscow theater with over 700 attendees took place in October.

In 2004, Russia had 46 published articles—once again, the highest number of articles for the Type I Petrostates. Nigeria had the second highest published articles with 10. The total number of articles published for all the Type I Petrostates was 59. The total number of were a total of The year included several terrorist and rebel attacks due to the ongoing civil war in Chechnya and civil unrest in Ingushetia. A few notable terrorist attacks included a train bombing in southern Russia and two passenger airliners that simultaneously crashed. In the fall, one of the most infamous terrorist attacks occurred in Beslan, Russia where terrorists overtook a school, held the children, their parents, teachers and administrators hostage, and ultimately hundreds were killed. Since Russia was the only Type I Petrostate that experienced two major civil wars and several insurgencies, it consistently resulted in the highest publications for this Political Instability Indicator. Algeria was the other petrostate that in the 1990s had an ongoing civil unrest. Nigeria also experienced civil wars. However, since the NYT online archive spans 1981 to present, it did not account for Nigeria's civil wars pre-1981.

Table 4.7 Coup d'etat and Attempted Coup d'etat Publications

Year	Crude oil price, \$ money of the day	Crude oil price, \$ 2010	Normalized crude oil price, \$ 2010	New York Times Articles, COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT facet																	
				Russia		Saudi Arabia		Venezuela		Nigeria		Iran		Algeria		Type I Petrostates		World		World w/o Type I Petrostates	
				Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty	Qty	Normalized Qty
1983	\$29.55	\$64.69	0.8659	0	-0.2792	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	0	-0.4237	0	-0.4979	52	-0.5679	52	-0.4497
1984	\$28.78	\$60.40	0.6744	0	-0.2792	0	0.0000	0	-0.3363	24	2.9794	0	-0.2391	1	1.2712	25	0.1660	102	0.2311	77	0.2199
1985	\$27.56	\$55.85	0.4715	0	-0.2792	0	0.0000	0	-0.3363	16	1.8047	0	-0.2391	0	-0.4237	16	-0.0730	134	0.7424	118	1.3179
1986	\$14.43	\$28.71	-0.7391	6	-0.1175	0	0.0000	0	-0.3363	4	0.0426	0	-0.2391	0	-0.4237	10	-0.2323	109	0.3429	99	0.8091
1987	\$18.44	\$35.39	-0.4413	0	-0.2792	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	0	-0.4237	0	-0.4979	112	0.3909	112	1.1572
1988	\$14.92	\$27.51	-0.7927	6	-0.1175	0	0.0000	0	-0.3363	2	-0.2511	0	-0.2391	0	-0.4237	8	-0.2854	112	0.3909	104	0.9430
1989	\$18.23	\$32.05	-0.5901	0	-0.2792	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	0	-0.4237	0	-0.4979	155	1.0780	155	2.3088
1990	\$23.73	\$39.58	-0.2541	6	-0.1175	0	0.0000	1	-0.2371	8	0.6300	2	0.2207	0	-0.4237	17	-0.0465	98	0.1671	81	0.3270
1991	\$20.00	\$32.03	-0.5912	196	5.0024	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	1	1.2712	197	4.7331	359	4.3378	162	2.4963
1992	\$19.32	\$30.03	-0.6803	16	0.1520	0	0.0000	19	1.5486	0	-0.5448	0	-0.2391	2	2.9661	37	0.4846	121	0.5347	84	0.4073
1993	\$16.97	\$25.61	-0.8773	36	0.6909	0	0.0000	2	-0.1379	8	0.6300	0	-0.2391	0	-0.4237	46	0.7236	81	-0.1045	35	-0.9049
1994	\$15.82	\$23.27	-0.9816	8	-0.0636	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	0	-0.4237	8	-0.2854	23	-1.0313	15	-1.4405
1995	\$17.02	\$24.35	-0.9336	2	-0.2253	0	0.0000	0	-0.3363	24	2.9794	0	-0.2391	0	-0.4237	26	0.1925	32	-0.8875	6	-1.6816
1996	\$20.67	\$28.72	-0.7384	2	-0.2253	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	0	-0.4237	2	-0.4448	53	-0.5519	51	-0.4764
1997	\$19.09	\$25.94	-0.8627	2	-0.2253	0	0.0000	0	-0.3363	6	0.3363	0	-0.2391	0	-0.4237	8	-0.2854	58	-0.4720	50	-0.5032
1998	\$12.72	\$17.01	-1.2609	0	-0.2792	0	0.0000	2	-0.1379	6	0.3363	0	-0.2391	0	-0.4237	8	-0.2854	44	-0.6957	36	-0.8781
1999	\$17.97	\$23.52	-0.9705	0	-0.2792	0	0.0000	1	-0.2371	0	-0.5448	0	-0.2391	1	1.2712	2	-0.4448	70	-0.2803	68	-0.0212
2000	\$28.50	\$36.08	-0.4102	0	-0.2792	0	0.0000	0	-0.3363	0	-0.5448	23	5.0483	0	-0.4237	23	0.1129	65	-0.3602	42	-0.7175
2001	\$24.44	\$30.10	-0.6772	2	-0.2253	0	0.0000	0	-0.3363	2	-0.2511	0	-0.2391	0	-0.4237	4	-0.3917	47	-0.6478	43	-0.6907
2002	\$25.02	\$30.33	-0.6668	2	-0.2253	0	0.0000	51	4.7232	0	-0.5448	0	-0.2391	0	-0.4237	53	0.9095	108	0.3269	55	-0.3693
2003	\$28.83	\$34.17	-0.4957	0	-0.2792	0	0.0000	7	0.3581	2	-0.2511	0	-0.2391	0	-0.4237	9	-0.2589	69	-0.2963	60	-0.2354
2004	\$38.27	\$44.17	-0.0495	0	-0.2792	0	0.0000	4	0.0605	0	-0.5448	2	0.2207	2	2.9661	8	-0.2854	73	-0.2323	65	-0.1015
2005	\$54.52	\$60.87	0.6955	0	-0.2792	0	0.0000	2	-0.1379	0	-0.5448	0	-0.2391	0	-0.4237	2	-0.4448	28	-0.9514	26	-1.1460
2006	\$65.14	\$70.46	1.1232	0	-0.2792	0	0.0000	0	-0.3363	2	-0.2511	0	-0.2391	0	-0.4237	2	-0.4448	56	-0.5040	54	-0.3961
2007	\$72.39	\$76.13	1.3760	4	-0.1714	0	0.0000	5	0.1597	0	-0.5448	2	0.2207	0	-0.4237	11	-0.2058	69	-0.2963	58	-0.2890
2008	\$97.26	\$98.50	2.3738	0	-0.2792	0	0.0000	1	-0.2371	0	-0.5448	0	-0.2391	0	-0.4237	1	-0.4713	62	-0.4081	61	-0.2086
2009	\$61.67	\$62.68	0.7762	2	-0.2253	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	0	-0.4237	2	-0.4448	97	0.1512	95	0.7019
2010	\$79.50	\$79.50	1.5261	0	-0.2792	0	0.0000	0	-0.3363	0	-0.5448	0	-0.2391	0	-0.4237	0	-0.4979	62	-0.4081	62	-0.1818

Figure 4.4 Coup d'état and Attempted Coup d'état, Aggregated Publication Results, from 1983-2010



Description of Figure 4.4 Coup d'état and Attempted Coup d'état, Aggregated Publication Results, from 1983-2010

The testing results for coup d'état and attempted coup d'état produced five spikes in publication frequency. There were two spikes for the Type 1 Petrostates—one major spike in 1991 and one minor spike in 2002. There were three spikes for publication frequency for the World—a minor one in 1989, a major spike in 1991 and a minor spike in 2002. There was a significant divergence between the Type I Petrostate and the World from 1984-1990. Regarding the Type I Petrostates, there are several events that will be discussed that contributed to the two major spikes.

In 1991, there were a total of 197 articles published for the political indicator of coup d'état and attempted coup d'état; however, the vast majority of those articles, 196, were related to the Soviet Union or Russia. This spike in publication was directly associated with the disintegration of the Soviet Union and the emergence of Russia as a state that year.

In 2002, for all the Type 1 Petrostates there were 53 articles. The bulk of the article published on coup d'état and attempted coup d'état came from Venezuela. It was in 2002 that the failed coup d'état to overthrow Hugo Chavez occurred. During the period of 1983-2010, three Type One Petrostates, Russia, Venezuela and Nigeria faced fundamental threats to the stability of the state. Russia's and Venezuela's coup d'état were mentioned since explained the spike in publication. Nigeria's 1984, 1985, 1990, 1993, 1995, 1997 and 1998 coup d'état or attempted coup d'état were not part of the spikes in publication but were included in the NYT search results.

1. Oil Price Correlation Analysis

To measure the direction and strength of a straight line relationship between oil price and publication frequency, the correlation r has been calculated for each country. In Test 1. Demonstrations and Riots, all countries, except Iran, demonstrated a negative association between the variables. Of all the countries, Nigeria has the highest $r = -0.372$, while Venezuela has the lowest $r = -0.163$.

Table 4.8 Oil Price and Demonstrations and Riots Correlation

Variable	Mean Value	Standard Deviation	Correlation, r
Crude oil price	45.28	22.42	
New York Times Articles (DEMONSTRATIONS AND RIOTS, Russia)	16.80	27.25	-0.172
New York Times Articles (DEMONSTRATIONS AND RIOTS, Saudi Arabia)	0.57	1.19	-0.210
New York Times Articles (DEMONSTRATIONS AND RIOTS, Venezuela)	4.33	9.38	-0.163
New York Times Articles (DEMONSTRATIONS AND RIOTS, Nigeria)	4.13	4.38	-0.372
New York Times Articles (DEMONSTRATIONS AND RIOTS, Iran)	9.50	19.89	0.222
New York Times Articles (DEMONSTRATIONS AND RIOTS, Algeria)	2.13	4.38	-0.347
New York Times Articles (DEMONSTRATIONS AND RIOTS, Type I Petrostates)	37.47	33.45	-0.155
New York Times Articles (DEMONSTRATIONS AND RIOTS, World)	777.30	218.51	-0.179
New York Times Articles (DEMONSTRATIONS AND RIOTS, World w/o Type I Petrostates)	739.83	204.24	-0.166

In Test 2. Terrorism. Venezuela, Nigeria and Iran demonstrated a positive association, while Russia, Saudi Arabia and Algeria demonstrated a negative association. Iran has the highest $r = -0.505$, while Russia has the lowest $r = -0.018$.

Table 4.9 Oil Price and Terrorism Correlation

Variable	Mean Value	Standard Deviation	Correlation, r
Crude oil price	45.28	22.42	
New York Times Articles (TERRORISM, Russia)	27.20	51.83	-0.018
New York Times Articles (TERRORISM, Saudi Arabia)	7.47	15.94	-0.106
New York Times Articles (TERRORISM, Venezuela)	0.07	0.25	0.230
New York Times Articles (TERRORISM, Nigeria)	0.53	1.11	0.271
New York Times Articles (TERRORISM, Iran)	7.77	8.48	0.505
New York Times Articles (TERRORISM, Algeria)	8.93	13.41	-0.154
New York Times Articles (TERRORISM, Type I Petrostates)	51.97	70.83	-0.001
New York Times Articles (TERRORISM, World)	1848.73	2606.59	-0.010
New York Times Articles (TERRORISM, World w/o Type I Petrostates)	1796.77	2553.62	-0.010

In Test 3, Civil War and Guerilla Warfare, Venezuela, Nigeria and Iran demonstrated a positive association, while Russia and Algeria demonstrated a negative association. Saudi Arabia was not included because it had zero results. Algeria has the highest $r = -0.403$, while Iran has the lowest $r = -0.014$.

Table 4.10 Oil Price and Civil War and Guerilla Warfare Correlation

Variable	Mean Value	Standard Deviation	Correlation, r
Crude oil price	45.28	22.42	
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Russia)	15.07	20.22	-0.360
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Saudi Arabia)	0.00	0.00	N/A
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Venezuela)	0.18	0.48	0.020
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Nigeria)	1.46	2.50	0.314
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Iran)	0.32	0.86	0.014
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Algeria)	3.36	6.03	-0.403
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Type I Petrostates)	20.39	21.86	-0.408
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, World)	835.11	400.89	-0.669
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, World w/o Type I Petrostates)	814.71	403.00	-0.643

In Test 4. Coup d'état and attempted coup d'état, all countries demonstrated a negative association. Saudi Arabia was not included because it had zero results. Russia had the highest $r = -0.155$, while Iran has the lowest $r = -0.037$.

Table 4.11 Oil Price and Coup D'état and Attempted Coup D'état Correlation

Variable	Mean Value	Standard Deviation	Correlation, r
Crude oil price	45.28	22.42	
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Russia)	10.36	37.11	-0.155
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Saudi Arabia)	0.00	0.00	N/A
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Venezuela)	3.39	10.08	-0.137
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Nigeria)	3.71	6.81	-0.078
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Iran)	1.04	4.35	-0.037
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Algeria)	0.25	0.59	-0.106
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Type I Petrostates)	18.75	37.66	-0.209
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, World)	87.54	62.58	-0.119
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, World w/o Type I Petrostates)	68.79	37.34	0.011

2. Publication Frequency Change Analysis

While correlation analysis can be useful, it is limited to measuring only the straight line association.¹ The political instability indicators may not follow year-to-year oil price fluctuations. Thus it would be useful to compare instability between two periods: high oil price period and low oil price period. The crude oil price mean value for the period covered in this paper, from 1981-2010 is \$45.28. The high oil price period would include the years 1981-1985, then from 2005-2010 when average oil price in those years

¹ David S. Moore and William I. Notz. *Statistics: Concepts and Controversies*. (New York: W.H. Freeman and Company, 2009) p. 298.

was above the mean value of \$45.28. The low oil price period includes 1986-2004, when the average oil price was below the mean value of \$45.28. For each period the average NYT frequency per year was calculated for each country, in each test. Furthermore, the change in publication frequency between these two periods has been calculated.

In Test 1. Demonstrations and Riots, all countries, except Iran, exhibited increased instability in low oil price period, while instability for all countries during that time increased by 22.33 %. Type I Petrostates, as a group, increased by 54.07%.

Table 4.12 Publication Frequency Change for Demonstrations and Riots

Variable	Average Publication Frequency Per Year		
	Crude oil price > \$45.28	Crude oil price < \$45.28	% Change
Crude oil price			
New York Times Articles (DEMONSTRATIONS AND RIOTS, Russia)	7.91	21.95	177.50%
New York Times Articles (DEMONSTRATIONS AND RIOTS, Saudi Arabia)	0.18	0.79	334.21%
New York Times Articles (DEMONSTRATIONS AND RIOTS, Venezuela)	1.36	6.05	343.86%
New York Times Articles (DEMONSTRATIONS AND RIOTS, Nigeria)	1.73	5.53	219.94%
New York Times Articles (DEMONSTRATIONS AND RIOTS, Iran)	16.64	5.37	-67.73%
New York Times Articles (DEMONSTRATIONS AND RIOTS, Algeria)	0.09	3.32	3547.37%
New York Times Articles (DEMONSTRATIONS AND RIOTS, Type I Petrostates)	27.91	43.00	54.07%
New York Times Articles (DEMONSTRATIONS AND RIOTS, World)	681.00	833.05	22.33%
New York Times Articles (DEMONSTRATIONS AND RIOTS, World w/o Type I Petrostates)	653.09	790.05	20.97%

In Test 2. Terrorism. Russia, Saudi Arabia and Algeria demonstrated an increase in publication during the low oil price periods, while Venezuela, Nigeria and Iran demonstrated a decrease in publication frequency related to terrorism. Overall, the world exhibited 43.72% increase, while the Type I Petrostates, as a group, increased by 49.59 %.

Table 4.13 Publication Frequency Change for Terrorism

Variable	Average Publication Frequency Per Year		
	Crude oil price > \$45.28	Crude oil price < \$45.28	% Change
Crude oil price			
New York Times Articles (TERRORISM, Russia)	18.00	32.53	80.70%
New York Times Articles (TERRORISM, Saudi Arabia)	3.45	9.79	183.38%
New York Times Articles (TERRORISM, Venezuela)	0.09	0.05	-42.11%
New York Times Articles (TERRORISM, Nigeria)	0.91	0.32	-65.26%
New York Times Articles (TERRORISM, Iran)	10.91	5.95	-45.48%
New York Times Articles (TERRORISM, Algeria)	6.18	10.53	70.28%
New York Times Articles (TERRORISM, Type I Petrostates)	39.55	59.16	49.59%
New York Times Articles (TERRORISM, World)	1447.82	2080.84	43.72%
New York Times Articles (TERRORISM, World w/o Type I Petrostates)	1408.27	2021.68	43.56%

In Test 3. Civil War and Guerilla Warfare. Russia and Algeria, demonstrated an increase in publication frequency during the low oil price periods, while Venezuela, Nigeria and Iran demonstrated a decrease in publication frequency related to Civil War and Guerilla Warfare.² Overall, the world exhibited 108.49% increase and the Type I Petrostates, as a group, increased by 353.51 %.

² Saudi Arabia had no results.

Table 4.14 Publication Frequency Change for Civil War and Guerilla Warfare

Variable	Average Publication Frequency Per Year		
	Crude oil price > \$45.28	Crude oil price < \$45.28	% Change
Crude oil price			
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Russia)	2.78	20.89	652.21%
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Saudi Arabia)	0.00	0.00	N/A
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Venezuela)	0.22	0.16	-28.95%
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Nigeria)	1.78	1.32	-25.99%
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Iran)	0.44	0.26	-40.79%
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Algeria)	0.78	4.58	488.72%
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, Type I Petrostates)	6.00	27.21	353.51%
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, World)	481.00	1002.84	108.49%
New York Times Articles (CIVIL WAR AND GUERRILLA WARFARE, World w/o Type I Petrostates)	475.00	975.63	105.40%

In Test 4. Coup d'état and Attempted Coup d'état . Russia, Venezuela, Iran and Algeria, demonstrated an increase in publication frequency during the low oil price periods, while Nigeria demonstrated a decrease in publication frequency related to Civil War and Guerilla Warfare.³ Overall, the world exhibited 28.01% increase and the Type I Petrostates, as a group, increased by 274.13%.

In Test 4. Coup d'état and attempted coup d'état. All countries demonstrated a negative association. Saudi Arabia was not included because it had zero results. Russia had the highest $r = -0.155$, while Iran has the lowest $r = -0.037$.

³ Saudi Arabia had no results.

Table 4.15 Publication Frequency Change for Coup D'état and Attempted Coups D'état

Variable	Average Publication Frequency Per Year		
	Crude oil price > \$45.28	Crude oil price < \$45.28	% Change
Crude oil price			
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Russia)	0.67	14.95	2142.11%
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Saudi Arabia)	0.00	0.00	N/A
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Venezuela)	0.89	4.58	415.13%
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Nigeria)	4.67	3.26	-30.08%
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Iran)	0.22	1.42	539.47%
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Algeria)	0.11	0.32	184.21%
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, Type I Petrostates)	6.56	24.53	274.13%
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, World)	73.56	94.16	28.01%
New York Times Articles (COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT, World w/o Type I Petrostates)	67.00	69.63	3.93%

Data Results Summary

The research results presented in Tables 4.1- 4.16 and Charts 4.1 – 4.5 present the initial findings after testing the research question: Do petrostates become unstable politically as oil revenues decrease? And if so, will eventual oil substitutes lead to major political destabilization, or petrostates becoming fragile or failed states? While Chapter III presents the quantitative side of the research, Chapter IV presents the qualitative-driven aspect of answering the research question.

By analyzing the correlation of political instability to fluctuating oil prices in six petrostates, it is possible to explore and compare some of the theories on fragile/failing states and gain insight into the future status of petrostates and their impact in global affairs. During testing, the aim was to find NYT articles that indicated political instability in six petrostates—Algeria, Iran, Nigeria, Russia, Saudi Arabia and Venezuela, and to

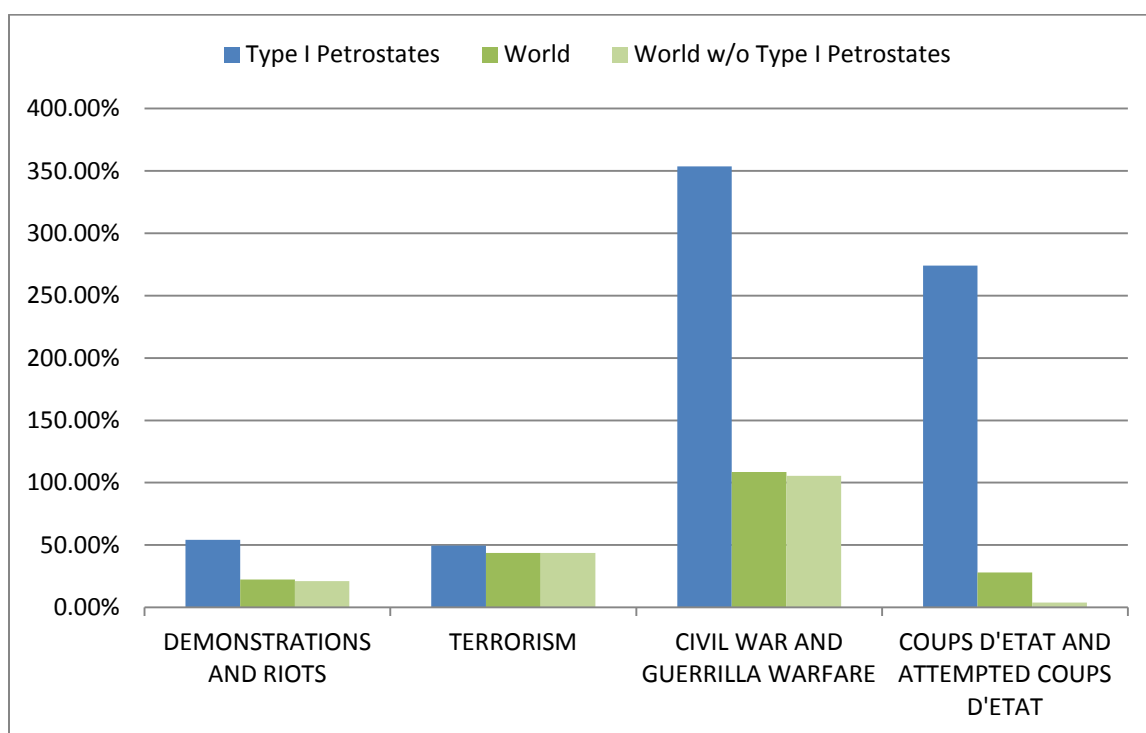
correlate the frequency of events, as reported on in the NYT, with an overlay time line of oil prices. The overall goal was to assess political instability and the relationship to oil price fluctuations in petrostates.

After testing and review of the publication frequency results from year-to-year, it is not possible to reject or support the hypothesis; however, a comparison between the high and low-oil periods supports the hypothesis. There was weak correlation with annual oil price fluctuations and frequency of political instability indicators. This may not outright disprove the hypothesis at this point due to possible variables or mitigating domestic circumstances that were discussed in Chapter III. It should be noted that from year-to-year some petrostates are able to use their sovereign wealth funds, for example, to compensate for low oil prices, or they may be able to borrow money for domestic spending programs, which may mitigate domestic instability. Conversely, when there was a comparison between high and low oil price periods, during all four tests, petrostates as a group displayed higher levels of instability, more so than all other countries (the control group). These findings are presented in Table 4.16 and Figure 4.5, and support the hypothesis.

Table 4.16 The Percentage Change of Publication Frequency for Political Instability Indicators from High to Low Oil-Price Periods

Variable	Average Publication Frequency Per Year, % Change		
	Type I Petrostates	World	World w/o Type I Petrostates
DEMONSTRATIONS AND RIOTS	54.07%	22.33%	20.97%
TERRORISM	49.59%	43.72%	43.56%
CIVIL WAR AND GUERRILLA WARFARE	353.51%	108.49%	105.40%
COUPS D'ETAT AND ATTEMPTED COUPS D'ETAT	274.13%	28.01%	3.93%

Figure 4.5 The Percentage Change of Publication Frequency for Political Instability Indicators from High to Low Oil-Price Periods



CHAPTER V CONCLUSION

Overview

Why should anyone, outside of petrostates, worry about the future of these oil rich countries? More than countries where terrorism emanates, or where civil war rages, the domestic status of petrostates profoundly affects developed nations due to oil supplies. This answer seems too facile, but because of growing oil demand, these states have been elevated to major global players. In addition, the high price of oil has precipitously risen from 2005 and has enriched petrostates immensely. Whether it is a case of a suspected pipeline explosion in Saudi Arabia, imminent sanctions against Iran, continuing civil unrest in Nigeria, terrorism in Algeria, or the 2012 elections in Russia and Venezuela, the immediate concern is the maintenance of domestic stability to ensure stable oil supplies and low gas prices for consumers. Petrostate instability has global ramifications. Any signs of turbulence in these countries cause oil markets to react dramatically, and that is why gauging how high and low oil prices affect petrostates' domestic stability is a worthwhile endeavor.

The goal of the quantitative data collection process in Chapter IV was to find *New York Times* (NYT) articles indicating political instability in the six petrostates tested and to correlate the frequency of events (reported on by the NYT) to oil price fluctuations. In this study there were four experiments, each one testing a different Political Instability Indicator (Civil War and Guerilla Warfare, Coup d'Etat and Attempted Coup d'Etat, Demonstrations and Riots and Terrorism). The data results using the Political Instability Indicators showed that during high and low oil price periods, the Type I Petrostates (excluding the outliers) displayed higher levels of instability than the control group (all

countries). However, on a year-to-year basis, when the Type I Petrostates were tested, there was weak correlation with oil price fluctuations and increases in political instability. This suggests increases in political instability in Type I Petrostates cannot be accounted for from year-to-year, but that instability is greater in Type I Petrostates in low oil price periods. In this study the low oil price period lasted for 19 years when the oil price was below \$45.28.

In light of these data results, do Type I Petrostates become unstable politically as oil prices fluctuate, and if so, are these countries significantly at risk of becoming failing states? During the short term, regardless of low oil prices, petrostates are still likely to maintain stability. If there is short-lived instability, a petrostate has the capacity to disperse social entitlements, deploy a strong security apparatus, and utilize sovereign wealth funds to stave off uprisings and similar domestic turbulence. As suggested by the data, there is residual, low-level political instability, regardless of the high and low oil periods. Based on the Political Instability Indicators, petrostate governments do not seem able to entirely reduce domestic instability regardless of oil prices. Thus, intense political instability that drags on for months or years poses tremendous risk for a petrostate. In particular, during prolonged periods of low oil prices, petrostates are at risk of becoming fragile states. Their budgets are increasingly dependent on oil revenues.

As outlined in Chapter III, petrostates are increasingly dependent on higher break-even oil prices and are not diversified; these states sustain themselves primarily through oil revenues. This means increasing uncertainty that these countries can meet their annual budgetary obligations and maintain high levels of social spending, especially since they lack a consistent tax base (if there is one) and are not diversified economically. The

citizens of many Type I Petrostates have also grown accustomed to improving living standards as a result of economic growth. Austerity measures would face strong resistance. However, low oil prices put a petrostate at risk of not meeting its budgetary requirements, not funding social programs, slowed growth and the worsening of any preexisting social grievances due to unfilled social obligations.

Along with combating poverty, crime or other social ailments, the petrostate government has to prepare to manage long term expectations of its citizens. Strong states, as noted in Chapter I, are those states that can effectively deliver goods and services to its citizens. Across the world, states are under strain, partially due to countervailing globalizing pressures that undermine the state and empower citizens to demand more from their elected leaders. Type I Petrostates may be attempting to deliver goods and services to their citizens, some to a greater extent than others, but the basis on which these governments are meeting citizens' needs is not a sustainable or sound foundation. Oil revenues being reallocated to citizens is not a remedy for creating a thriving political and economic system and leaves petrostates in a precarious position.

Contributions and Further Areas of Research

This study presents a modest contribution to the subject of oil politics and aspects of failed states theory, particularly when gauging political instability. It does not argue that oil is the sole cause of political instability, but rather that oil wealth and revenue do allow petrostates greater leverage to mitigate political instability or quell political dissent. In Chapter II, a typology of petrostates is developed that provides a framework for analysis. Not everyone will agree with this formulation of what is and what is not a

petrostate; however, since there are no specific conceptual frameworks for researching petrostates, and definitions are rare, this definition and typology can be scrutinized and elaborated upon within the field. I also sought to gauge political instability in petrostates, and offer a foundation through the identification of Political Instability Indicators. The optimal metrics for gauging political instability have long eluded political scientists, economists and policy makers. This study presents data event analysis in a novel way to gauge political instability and showcases the potential for data sets that have a substantial historical timeline to assess trends in petrostates or other research groups.

A secondary finding, according to the data, is that petrostates are more volatile or unstable than all other countries. Accounting for this greater level of political instability, as compared to the world, is beyond the scope of this study, but is another potential area of research, possibly in the area of failed states theory. This study has not proposed that petrostates are likely to become failed states, but on the spectrum of state fragility, as elaborated on by the Fund for Peace, petrostates may become more fragile, or unstable with systematic budgetary uncertainty. However, there are ways to avoid or plan for a scenario where petrostates have a significant drop in their revenue base, and this too can be an area for further research.

The Way Forward for Petrostates

This study asks whether higher oil prices can stabilize petrostates, or, conversely, if lower oil prices destabilize the six Type I Petrostates investigated. The premise is that these states, through oil revenues, have the ability to co-opt and repress citizens domestically by using oil revenues. The prospects of In the coming decades, the next

problem to consider is how the world community can prevent a proliferation of states whose entire economic viability has been jeopardized. In other words, the international community needs to consider the future prospects of petrostates becoming destabilized.

Is it feasible that petrostates will lose their main source of revenues in the next decades? Oil's dominance as the fossil fuel of choice will likely end around 2030 as industry analysts have suggested. There are additional reasons why global oil consumption will decrease and petrostates will lose their global clout: depletion of major oil reserves, environmental concerns leading to renewable energy sources, increased unconventional oil sources such as ultra-deep water drilling or hydraulic fracturing of oil from deep shale formations, improved fuel efficiency globally, and the outgrowth of energy innovations, especially if oil prices go higher. Besides prognostications about the future of global oil consumption, political will by China and the US has already resulted in increasing energy security, or specifically oil security. The US has increased fuel efficiency, and China has invested in new modes of transportation, such as an "electric bike" and major transportation infrastructure to avoid being susceptible to the tightening oil market.

Petrostates' oil influence matters and will remain vibrant in the next 20 years. Yet long-term viability, 20 years and after, is not on sound footing. The economic sustainability on which petrostates have built their societies is never adequately questioned. There is little will and few tools that international organization and states can bring to bear on Petrostates Type I and II to help diversify and enable a more equitable distribution of oil wealth. Policy papers have been written by the World Bank and IMF to suggest effective ways to lower oil wealth dependency, diversify and the

remove wasteful energy subsidies. So far there have been modest successes in these endeavors. Perhaps the most hopeful framework to improve petrostate economic and political outcomes is based on the Extractive Industries Transparency Initiative (EITI). EITI “...aims to strengthen governance by improving transparency and accountability in the extractives sector.”¹

In addition, leaders of petrostates are starting to understand their *modus operandi* is under threat and unsustainable. Some governments have tried to diversify and others have found ways to appease the population through modest democratic concessions. The volatile oil market continues to remind these leaders that there is little certainty when wagering everything on oil prices. Some contingencies were created, such as sovereign wealth funds by Saudi Arabia and Russia, but even those massive funds were nearly exhausted after the 2008 global financial crisis. These states proclaim that they will work on diversification, but in the meantime, if diversification is not possible, then other contingency plans need to be made. No government wants to relinquish power, but in order to remain in power, ironically, some petrostate governments may need to give up control by offering their citizens greater freedom. In light of the Arab Spring, democratic concessions appear to be a surprising alternative to managing massive and impractical domestic subsidies or even large scale diversification. While this study does not consider the democratic concessions made in the Type I Petrostates, future studies can look at how democratic openings and incremental signs of progress have sprung up in each country, in part as a result of the Arab Spring, and in part because of the ever increasing pressures that these countries will have to provide economic opportunities to their citizens, outside the oil industry. Oil can extend domestic stability only temporarily. The future stability

¹ See The Extractive Industries Transparency Initiative at <http://eiti.org/eiti>.

of Type I and Type II Petrostates depends on these governments offering at least incremental freedom and representation to their citizens.

Suggested throughout this study is that petrostates have maintained clout globally, in large part because of oil, or through a combination of strengths. Yet, as noted, there is an increasingly uncertain oil future for petrostates if oil prices dip, let alone if oil becomes obsolete. In either case, petrostate influence would clearly wane internationally and domestically. This would put Type I and Type II Petrostates in a dire predicament. The foundation on which these petrostate governments have sustained themselves—oil revenues—would be shaken and also undercut their domestic authority and legitimacy. This will result in weakened or fragile petrostates. The eventuality of reduced oil demand leads to two possible outcomes. One scenario is that petrostates may face irrelevance internationally, these governments may lose their grasp on their citizens and there is the prospect of a new crop of fragile states, previously wealthy oil states, is probable. Another scenario is that as oil becomes less dominant, petrostates will incrementally offer more democratic concessions that provide a more optimal transition for diversifying economically. It cannot be forgotten that there is nothing that seals the fate of any state, not even oil.

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APPENDIX I. A Sample of a Qualitative Analysis of Russia and Terrorism

Date of event	RUSSIA—TERRORISM	
	Events during High Oil Periods (>45.28) Years: 1981-85, 2005-2010	Events during Low Oil Periods (<45.28) Years: 1986-2004
06/1995		Chechen commandos take 1000 hostages in Budyonnovsk, Russia.
06/1996		Bomb kills 4 in Moscow subway
07/1996		Trolleybus bomb set off. No one killed but 30 injured
08/1996		Train explosion in Southern Russian injures 8
11/1998		Blast at Kremlin hurts 3 guards
03/1999		Bomb blast in Vladivkavkask 62 kills, 100 wounded
09/1999		A series of apartment blasts, possibly by terrorists, in Buyanaksk, Dagestan, Moscow and Volgodonsk . A total of 293 people are killed and 651 are injured.
09/10/99		90 people died in an apartment blast.
09/13/99		2nd apt. blast kills 19 people
09/14/99		3rd blast kills 95
08/2000		Underground pedestrian walkway is bombed. Seven die and 97 wounded.
02/2001		Bomb wounds 9 in busy station in Moscow
03/2001		Bombs kill 20 in 3 Russian villages
04/2002		7 are killed in blast in Russia in Vladikavkaz
10/2002		40 Chechen guerillas take over theater in Moscow and hold 800 hostages. Over 117 people (67 captives and 50 Chechens) died from an incapacitating gas that Russian special forces used to sedate the terrorists who had bombs strapped to them.
05/2003		Bomb at parade kills 34 in Kaspiisk, Russia.
05/2003		41 die in suicide bombing using a truck bomb (Chechnya).

05/2003		15 die in 2nd suicide bombing during a religious festival
06/2003		A woman blew up a bus killing Russian military personnel. 18 died.
06/2003		A truck bomb explodes and 2 people die.
07/2003		Explosion kills 17 at a rock concert in Moscow.
02/2004		39 die in Moscow bombings in subway.
08/2004		Two planes crashed near Moscow, believed to be hijacked and then exploded.
09/2004		Suicide bomber kills 9 at Moscow subway station
09/2004		Hostages taken at school in Beslan, Russia. Standoff is for 52 hours. Over 334 hostages died. 10-21 Russian soldier and 31 terrorists also died
03/2010	Subway blast kills dozens in Moscow.	

APPENDIX II. Comparison of the New York Times Online Archive and Europe Media Monitor

Point of Comparison	New York Times online archive	Europe Media Monitor	Additional Information
1. Number of: (a) categories and (b) keywords	(a) (b) Tens of thousands of facets that can serve as both categories and keywords	(a) approximately 1000 (b) 35,000	
2. Timeline	1981-present	2002-present	
3. Languages	One language, English	43 different languages	Europe Media Monitor has automatic translations; however, some translations are not accurate.
4. Coverage NYT and EMM Newsbrief	Global—news coverage across the world	Global—news coverage across the world	
5. The Political Instability Indicators versus the category of “Political Unrest”	Search results are based on the four specific Political Instability Indicators: (1) Demonstrations and Riots, (2) Civil War and Guerilla Warfare, (3) Coups D’Etats and Attempted Coups D’Etats and (4) Terrorism.	Search results are generalized and based on various terms or themes that may (or may not) denote political instability.	

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