Curse or Blessing? – Challenges of Commodity-Based Economies

by

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SUBMITTED TO THE MIT SLOAN SCHOOL OF MANAGEMENT IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN MANAGEMENT STUDIES
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

JUNE 2011

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ABSTRACT

The idea that massive natural resource endowments would lead countries to weak economic growth and development is counterintuitive. Oil, gas, copper, gold or other resource riches should, at least in theory, spearhead countries with such natural wealth to growth that parallels non-commodity-based economies and help them achieve high-income status. This has not been the case for majority of the endowed countries particularly in North Africa, the Middle East and Latin America. With few exceptions, such as Norway, Botswana, Chile or Australia, the resources proved to be a curse.

I begin with a survey of previous academic literature and research on the effects of natural resources on a given country’s economic, social and political development. I then move to exploring the many challenges and pitfalls faced by resource-based economies. Such concepts as the Dutch Disease, Rentier State, Governance and Corruption are discussed.

In the final section, outline different methods of the resource curse management by first exploring monetary and fiscal policies, and later touching upon the issues of responsible governance. I conclude by proposing a multi-step framework for resource management.
Acknowledgments

I would like to express a complete sense of gratitude to my thesis advisor, Roberto Rigobon, for his support and enthusiasm in encouraging me to pursue this thesis topic. Through my frequent interaction with Roberto and through his two courses that I took at MIT, 15.014 Macroeconomics, Development & Sustainability and 15.012 Applied Macroeconomics & International Economics, during the 2010/11 academic year I learned more about economics and social dynamics than in my past eighteen years of schooling in Poland, Belgium, France and the U.S.A.
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Introduction

Men of a fat and fertile soil, are most commonly effeminate and cowards; whereas contrariwise a barren country makes men temperate by necessity, and by consequence careful, vigilant, and industrious.

- Jean Bodin, Six Books of the Commonwealth, 1955

I became first interested in the topic of natural resource endowments and their effects on governments and societies while studying for Bachelors of Arts in Political Science at Fordham University in New York. Throughout my academic inquiry I read much about histories and evolutions of political systems of countries across the globe. I have been always struck by how poorly developed some of the most resource-endowed nations were, and by the vast income gap between the ruling elite and the citizens. During my senior year at Fordham, I conducted a semester-long research on the oil dependence of Iraqi economy where I came to a conclusion that the massive oil and gas wealth was like a curse to the country. While I was unable to prove a causal relationship between the resource endowment and poor economic development, the correlation was clear. My interest in the topic has further intensified during internships at the United Nations in New York and at the European Parliament in Brussels. Through this thesis I continue satisfying my unquenched fascination with the complex concept of the resource curse.

Year 2011 has woken up to major social unrests in Egypt, Libya, Tunisia and several demonstrations, albeit muted, in Iran and Iraq. Apart from vast social and economic inequalities, authoritarian forms of government and relative unsophistication of the economic base, these all countries depend heavily on their natural resources riches to generate fiscal rents and employment opportunities within the society.
Natural resources endowment has historically been one of the key factors determining a given country’s growth. Throughout centuries the commodity “blessing” has been a source of massive wealth, from a gold-rich Brazil in 1600s to oil-abundant Middle East of the present time. Yet, the abundance of natural resources has not always translated into riches for the country’s inhabitants, nor into robust economies and citizen friendly forms of government. In this thesis I seek to inquiry into the phenomenon that many has labeled “the commodity curse.” Namely, has natural resource been more of a curse or blessing given the vast discrepancy of economic, political and social progress amongst commodity-rich countries? I seek to determine why certain countries such as Norway, Chile and Botswana have been able to surpass in terms of economic growth and civil liberties other commodity-endowed nations, mostly found in Latin America, North Africa and the Middle East. For example, why Norway with export revenues from oil and gas amounting to 45% of total exports and constituting 20% of total GDP has been so successful in exploiting its natural resources and passing down the wealth onto the citizens while Libya, with a quarter of GDP made up of domestic oil revenues, has fared much worse, to say the least? In light of volumes of academic literature written on the subject, answered to these questions have proven difficult, if not elusive. There are however common mistakes that commodity-rich nations seem to commit, and examples of successful as well as failed policies abound. The next section explores the many challenges faced by countries endowed with resource riches, and the mistakes they commit when managing such endowments. The following chapter explores potential monetary, fiscal and governance remedies to the resource curse.
The Commodity Curse or Blessing?

All in all, I wish we had discovered water.
- Sheik Ahmed Yamani, Oil minister, Saudi Arabia

It is the devil’s excrement. We are drowning in the devil’s excrement.
- Juan Pablo Perez Lafonso, Founder of OPEC

To refer to a vast, valuable energy resource as the source of a "disease" sounds rather ungrateful.
- The Economist on the Netherlands

Since 1980s political scientists and economists have produced a flood of research examining the long-term effects of the natural resource wealth on a given country’s economic development. The research points to the fact that countries abundant in oil, natural gas, mineral deposits or other valuable natural resources do not necessarily outgrow economically resource-poor counterparts. The East Asian economies of Korea, Taiwan, Singapore, Japan or Hong Kong achieved high-standard of living without the presence of exportable natural resources. On the other hand, oil and mineral-rich African countries such as Congo, Nigeria, Angola, Sudan and Libya are on the bottom of economic development league tables in spite of the commodity wealth. For decades inhabitants of such countries continue to experience low quality of life and low levels of income per capita. It was not until 1993 that Richard Auty first coined the term “resource curse” in an academic article attempting to explain the lagging behind in economic development (in addition to higher economic and political inequality) by resource-rich countries. He concluded that possession of oil and other commodities curses a country.
Others were quick to follow Auty’s rhetoric. Amongst many, Moisés Naim, a popular Venezuelan writer and columnist, stated in the Foreign Policy Magazine:

Oil is a curse. Natural gas, copper, and diamonds are also bad for a country’s health. Hence, an insight that is as powerful as it is counterintuitive: Poor but resource-rich countries tend to be underdeveloped not despite their hydrocarbon and mineral riches but because of their resource wealth. One way or another, oil -- or gold or zinc -- makes you poor. This fact is hard to believe, and exceptions such as Norway and the United States are often used to argue that oil and prosperity can indeed go together. (Naim 2010)

The resource curse phenomenon is not universal. Norway quickly comes to mind as a model country for the exploitation of natural resources. As the world’s eighth natural gas and twelfth oil producer\(^1\), Norway tops the international league tables for governance and economic performance. Similarly, Botswana, world’s top three diamond exporter is amongst the best performers in Africa in terms of democracy, stability and income levels per capita. Contrast it to Congo, another world’s major diamond exporter, and the numbers look bleak. Twenty-seven of the thirty-six states in the World Bank’s most troubled category severely indebted low-income countries are primary commodity exporters. Nigeria, despite being Africa’s highest oil producer netting approximately $350 billion in oil revenues in the past 35 years, experienced 30% decline in per capita GDP from in the period of 1965 to 2000. Similarly, Venezuela’s terms of trade increased by 13.7% per year during 1970-1990 due to oil exports while the GDP per capita fell by 1.4% per year. In spite of the two year sharp increase in oil price in 1979, Venezuela’s government actually run a current account deficit because of a massive jump in public

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\(^1\) 2010 BP Annual Energy Review
spending. Even in Saudi Arabia, the world’s largest oil producer, the GDP per capita in 1999 was lower than the figure before the 1970s oil spikes.

In addition, the OPEC member states in the period between 1965 and 1998 experienced on average a 1.3% contraction in the gross national product while the rest of the developing world recorded a 2.3% GNP growth (Gylfason 2001). In the period of 1965-1998, the per capita GNP growth was on average -1% per year in Iran and Venezuela, -2% in Libya, -3% in Iraq and Kuwait, and -6% in Qatar (Gylfason 2005). More worringly, several studies have shown that the probability of engaging in a military conflict (civil war or conflict between nations) increases with the presence of natural resources (Worse & Collier 2003). It remains puzzling why resource-abundant countries like Nigeria, Mexico, Venezuela or the Gulf States have not historically sustained a rapid economic growth even though they have been resource-rich for a prolonged period of time.

These examples form a consistent pattern. Out of 65 resource-rich countries only four attained a combination of long-term investment exceeding 25% of GDP on average between 1970 and 1998 (which equals that of successful non-commodity, industrial countries) and per capita GNP growth above 4% per year over the same period. The four countries are diamond-rich Botswana, and three Asian countries – Indonesia, Malaysia and Thailand.

For countries abundant in resources, the importance of revenues stemming from the exploitation of such wealth is clear. Three-quarters of countries in the sub-Saharan Africa
and two-thirds of states in Latin America, the Caribbean, North Africa and the Middle East depend on primary commodities such as oil, gas, minerals and precious metals for as much as half of their export income (Deacon 2010). For example, commodity producing countries in Latin America derive on average 24% of total fiscal revenues from commodities compared with 9% for the advanced resource-rich economies (Sinnott, Nash & de la Torre 2010). There is still no definite agreement as to what may cause such a counterintuitive phenomenon, but it is important to take stock of the empirical evidence before attempting to explain the causes.

A number of past studies support the idea that the cure in fact exists. With few exceptions, the resource-abundant states have stagnated in economic growth since the early 1970s. The phenomenon is not easily explained by other variables, or by alternative ways to measure resource abundance. Empirical studies are not bulletproof, but they do present quite convincing arguments based on historical data. One of the earliest studies done by Nankani in 1980 shows that the leading hard-rock mineral exporters had a per capita GDP growth rate of 1.9%, which was half the rate of non-mineral control group of states. Another study from 1984 showed a negative correlation between the share of hard-rock minerals in total exports and the economic performance of thirty African states (Wheeler 1984). Similarly, a study by the World Bank examining economic performance of major oil exporters and mineral exporters during the 1971-83 boom years showed that the commodity-rich countries performed less well than their resource-poor counterparts (Gelb 1988; Auty 1993). In 1995, Davis confirmed the previous conclusions. The resource rich states of Latin America fell behind resource-poor East Asia in the 1970s and 1980s.
It was not however until 2001 Jeffrey D. Sachs and Andrew M. Warner’s comprehensive study of ninety-seven countries over a nineteen-year period, using regression analysis to measure the impact of mineral and other resource exports on GDP growth that a much gloomier picture emerged. In their “Natural Resource Abundance and Economic Growth”, the two economists show that countries with a high ratio of commodity exports to GDP in 1971 had abnormally slow growth rates between 1971 and 1989. Even after controlling for a wide range of variables such as per capita income, investment rates, trade policy, geographic region, impact of export and price volatility, income distribution and bureaucratic efficiency, the correlation remained significant. The study survives a long list of control variables. The study further stipulates that a one standard deviation increase in the primary products export share reduced a country’s growth rate by 0.6 to 1.5 percentage points.

The following figure, taken from Sachs and Warner’s 2001 article in the European Economic Review, shows that virtually none of the extremely resource-rich countries in 1970 managed to grow rapidly for the next 20 years. Interestingly, most of the countries studied (with Malaysia, Mauritius and Iceland as the only exceptions, and not that strong exceptions for that matter) that did in fact grow rapidly started as resource poor, not resource abundant.
The findings of the study seem to be counterintuitive and to run against a universal belief that many current high-income countries developed with the aid of their natural resources. The natural resource curse seems to contradict the story of growth. For example, it is a common belief that the abundance of resources in North America in 19th century explains why the US surpassed England during that period (Habakkuk 1962). The abundance of natural resources is seen as beneficial for certain developing countries. Former President Clinton in 2000 declared that "With...vast human and natural resources, a revitalized Nigeria can be the economic and political anchor of West Africa."

Sachs and Warner question the validity of the above argument stating that:

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2 From remarks on signing of a joint declaration with Nigerian President Obasanjo, August 26, 2000. (Obtained from CNN.com transcripts.)
Although the data are scarce, when one measures natural resource intensity using historical data, the ratios as a percent of GDP are much smaller than the ratios that many countries have achieved in the mid-to-late 20th century. Sweden, Australia and the United States in earlier times never approached the level of natural resource intensity we see today in the Gulf-States. (Sachs & Warner 2001)

Several scholars have recently questioned the findings of the study stating that the use in empirical work of commodity exports’ share of total exports or GDP as a measure of dependence in regressions explaining growth pose problems of endogeneity (Sinnott, Nash & de la Torre 2010). Namely, one cannot say if the countries in question were unable to grow because of their dependence on commodities or because they were not able to grow any other of their economic sectors they became dependent on commodities. Also, it have been argued that the notion of the natural resources course is overgeneralized, and that it primarily applies to countries with poor governance, which in turn negatively impact economic growth, and to countries abundant in oil and minerals (Collier & Goderis 2007). Others have argued that the link between natural resources dependence and growth is indirect (van der Ploeg & Poelhekke 2009). Even some statistical studies have shown no evidence of the curse (Delacroix 1977; Davis 1995; and Herb 2005). But a 2009 research by Alexeev and Conrad found a positive effect of oil and mineral wealth on income per capita in East Asian and Latin America.

It is reasonable to say that there is still no clear cut consensus on whether the natural resources wealth hinders economic development. One of the reasons why some studies come to different conclusions might lie in the fact that while a commodity wealth my increase to some extent a per capita income level, it may simultaneously reduce or fail to rise the growth rate of income. Also, as have been noticed for a long time, resource
abundant countries do not tend to develop highly diversified economies. The 18th century French philosopher Montesquieu seemed to have right pointed out that “in countries where nature easily bestows her bounty, there is little incentive to engage in other, more burdensome productive activities and that this “indolence” leads to the failure of the country to develop.” This in itself may not necessarily be a bad thing as it could be to the advantage of the given country to specialize and develop a comparative advantage in a given industry. The intricacies associated with the so called “Dutch Disease” will be discussed in the next chapter.

Statistically however, on average resource-rich countries do typically experience slower growth, are less economically diversified, have more corruption, oppression and government opacity, are subject to greater economic volatility and are more prone to internal conflicts than their non-abundant counterparts with comparable income levels. Resource-rich states, coincidentally, are also overwhelmingly autocratic, a trend further explored in the next chapter. Regardless of arguments over the linkage of natural endowment and economic growth, non-resource rich countries on average seem to be fare better.

The question at the end is not whether natural resources abundance will in the future hinder economic development of a given country. Commodity abundance does pose numerous risks to a country, which if not properly managed may bring it to a brink of collapse. It would not be advisable for countries to either not develop their natural wealth or that it would be better off ridding itself of the oil. As Norway or Australia has shown oil and
mineral rich countries can succeed provided one can make the best use of the natural endowment. The issue seems to lie in how to make the best use of such wealth so a country turns out as Botswana rather than Bolivia or Chile rather than Congo. Much seems to also depend on the particular circumstances of a given country and on the type of resource abundance present.
Challenges and Pitfalls of Resource-Based Economies

Is there such a thing as having too much oil for the country's own good?
- Ricardo Housmann and Roberto Rigobon, 2002

If ... oil revenue is managed well, it can educate, heal and provide jobs for ...the people. But oil brings risks as well as benefits. Rarely have developing countries used oil money to improve the lives of the majority of citizens or bring steady economic growth. More often, oil revenues have caused crippling economic distortions and been spent on showy projects, weapons and Paris shopping trips for government officials.

The natural resources curse is multidimensional in nature. Vast differences exist in the commodities extracted ranging from base metals, precious metals, energy products to agricultural products. In spite of diverse and varied circumstances of every commodity-abundant country, there are commonalities across the board when it comes to exploration and management of the natural resources endowment. The curse does not manifest itself merely in terms of economic distortions (the “Dutch Disease” discussed below), but also in it has strong cultural, institutional and political dimensions that breed inadequate transparency, corruption, protectionism, and, in many cases, instability and violent power struggles. An inquiry into the commodity curse merits inspection of each of these considerations. While for the purpose of discussion the resource challenges and pitfalls are explored separately, it is important to remember that they all are intertwined in one way or another.

Prices of commodities globally tend to follow cycles. There seem to be overall agreement amongst policymakers, economists and academia on the typical pitfalls that many of the commodity-rich countries succumb to. Despite this prevailing knowledge and “role
model” countries, decade after decade governments tend to commit the same mistakes. This chapter discusses the challenges and pitfalls associated with a high resource endowment. One can divide the negative effects of natural resource exploration on a given country into direct: the Dutch Disease, and indirect: rent-seeking, corruption and governance deficiencies. Next chapter moves beyond the pitfalls to discuss ways of effective resource management and prevention of the pitfalls.

**The Dutch Disease**

One of the most prevailing reasons for long-term economic stagnation of commodity-rich countries is the so called “the Dutch Diseases”\(^3\). The phenomenon refers to the damaging effects on the economy that the exploitation and export of natural resources bring about. Such effects include domestic currency appreciation and changes in the cost of factors of production. The term was first coined after the experience of the Netherlands since 1959 when a discovery was made of a large natural gas reservoir on the Dutch territory. By 1976 the country recorded revenues of $2 billion along with $3.5 billion of savings in imports. However, with record revenues and import savings gross corporate investment had dropped by 15% in 1970s, while employment in manufacturing had declined by 16%. The total level of unemployment had increased from a modest 1.1% to 5.1%, while the share of profits in national income which had averaged 16.8% in the 1960s had fallen to 3.5% in the first half of the 1970s.

\(^3\) The term “Dutch Disease” was first used by The Economist in 1977
Why then in light of a massive revenue windfall that the natural gas bonanza had brought about did the Dutch economy suffer? In a nutshell, there are two effects that typically follow revenue windfalls from natural resources: appreciation of the local currency and tendency of the booming sector to draw capital and labor away from non-booming sectors, such as agriculture and manufacturing, hence raising their production costs (Deacon 2010). The country’s exchange rate should appreciate because foreigners are purchasing the natural resources and, as the national revenues rise government spending (also called "spending effect") on such sectors as health, welfare or military follow, which in turn should affect the wages (Corden & Neary 1984). During the energy price boom of 2001-2008, in the fixed-rate exchange regime oil-producing countries such as Saudi Arabia the real rate appreciation came through money inflows and inflation. In the floating-rate exchange regime countries such as Chile, Mexico, Norway, Russia, Kazakhstan or South Africa, the real appreciation came through the appreciation of nominal currency. Under the fixed exchange regime, the domestic money supply should increase because of the commodity-induced surplus on the balance of payments. The inflow of reserves and the increased money supply often leads to inflation and overheating (Frankel 2010). For instance, a 2005 study by Frankel (2005) of the Kazakh currency Tenge and his subsequent 2007 study of the South African Rand suggest a relationship between the real prices of each country’s commodity, oil for Kazakhstan and minerals for South Africa, and their exchange rates. Typically, the currency falls when the prices of natural resources are declining and appreciates when prices boom, as was the case between 2002-2006.
The second Dutch Disease effect concerns crowding out of non-commodity sectors, rising their productions costs and rendering them less competitive. Multiple studies by Sachs and Warner show the impact of positive wealth shocks creating excess demand for non-traded products and driving up non-traded prices, including input costs and wages (Sachs & Warner 1995, 1999; Sachs 1996). Accordingly, manufacturing, or other sector that produces traded products, suffers profits squeeze because of high priced non-traded products that are essentially manufacturing inputs. Because manufacturing products are typically sold on international markets with competitive price levels, such products’ competiveness suffers. In 1970s, the Dutch manufacturers forced to use overpriced domestic inputs and export products were outcompeted by lower-cost foreign companies. The declining manufacturing can lead to further ramifications on the growth of a given economy depending on the importance and size of such sector. Consequently, the commodity export bonanza discourages diversification of non-commodity exports subjecting country to future shocks shall prices follow boom and bust cycles, which they always do.

Gylfason (1999, 2000) goes further arguing that the natural resource abundance does not only crowd out non-commodity activity, it also crowds out entrepreneurial activity and innovation. Namely, if wages in the commodity-booming sectors rise high enough to attract entrepreneurs and potential investors, they will be discouraged by rent-seeking government officials who are also drawn to such sectors by high and concentrated revenues. State officials will therefore be tempted to crowd out innovators and entrepreneurs and rent-seek on their own putting a dent to pro-growth activities. The
predatory state crowds out the development state. State officials, having the regulatory and legal authority, can successfully discourage entrepreneurs from entering the wealthy, albeit fixed, space of commodity exploration. Natural resource countries, the author argues, would therefore experience lower innovation, lower entrepreneurial activity, poorer governments and lower growth.

In a nutshell, the two effects combined lead to a decline in exports in the non-booming sectors due to higher exchange rate, to the corresponding higher costs of goods becoming less competitive in the world markets, and to an increase in prices of domestic goods and services (due to higher wages) that cannot be imported. Consequently, a country becomes even more dependent on natural resources and their revenue windfalls. Accordingly, because almost every commodity-based country is a price taker of commodities, it becomes vulnerable to the commodity price fluctuations. The countries are price takers because commodities of one country do not differ that much from commodities of another country; they can be easily substituted. Hence, such tradable goods’ prices are usually set on world markets.

But why this phenomenon should be seen as a problem? Could one not argue that a resource boom ultimately brings about a windfall of revenues that should make the per capita income levels higher? Shouldn’t then such countries adjust to the “blessing” and specialize in its exploitation, even if the discovery shifts their comparative advantage away from other sectors such as manufacturing? In practice, however, there is widespread concern that the contraction of a manufacturing sector, which typically follows
natural resource discoveries, is a bad thing. The worry seems to be that when the natural resources run out or when the production diminishes, the lost manufacturing sectors will not come back (Krugman 1987) and the overall economic activity of a country will suffer. Specialization in the extraction of natural resources proves difficult in light of wide commodity price fluctuations. Since most countries are price takers, they have little influence over the volatile revenue streams. There are ways to hedge price fluctuations, but they come at a cost and, if designed and implemented improperly, may lead to losses. Shifting away from manufacturing, or any other industry base for that matter, can be detrimental to the economy:

If the natural resources begin to run out or if there is a downturn in prices, competitive manufacturing industries do not return as quickly or as easily as they left. This is because technological growth is smaller in the booming sector and the non-tradable sector than the non-booming tradable sector. Since there has been less technological growth in the economy relative to other countries, its comparative advantage in non-booming tradable goods will have shrunk, thus leading firms not to invest in the tradable sector. (Van Wijnbergen & Sweder 1984)

Corden and Neary (1982) have also argued that a resource boom will create the “resource movement effect.” The shifting production landscape will increase the demand for labor in the booming sector. This effect is however negligible considering the fact that while in the Middle Eastern countries, oil and natural gas account for more than 80% of government revenues, these sectors typically employ less than 10% of the country's workforce. Mining and hydrocarbons are capital-intensive businesses, employing relatively few. This staggering disproportion may explain the prevailing double digit unemployment rates in the region. According to the United Nations Development Program, the average unemployment rate is 15% in the Arab world reaching 40% among people between the
ages of 15 and 25, totaling 66 million out of the total Arab population of 317 million. The development of natural resources has not resulted in a widespread improvement in employment levels in commodity-rich countries. Specialization in the exploitation of one or a few commodities leads to a sprawling public sector and underdeveloped private sector. Inevitably, this may lead to high income inequality as the overextended public sector provides much of the employment opportunities, while private sector lags behind. The public sector is however unable to absorb all or most of the job seekers.

Furthermore, because of price volatility in the commodity markets and the corresponding uncertainty about revenue streams, firms may be reluctant to invest denting economic growth. The issue of investment disincentive is especially relevant in exploration of mineral and energy resources because of high up front investments and long, often uncertain, time horizons for cash flows. Additional investment risks encompass state price controls and threats of nationalization. Due to the high sunk costs and political risks, the governments will often dominate the resource exploitation. In such cases, private investment is difficult to come by even though Sachs and Warner (1997), in one of their studies, have found little evidence that resource abundance was associated with lower investment.

It is however easy to imagine a situation where it becomes more profitable to attempt to gain a share of the wealth being generated by that one resource industry, rather than engage in more entrepreneurial activity and commit investments in other industries. The incentives of attempting to gain a foothold in an already tested and highly profitable
commodity enterprise are high, often outweighing potential benefits of venturing to other sectors. Because the resource industry’s growth is constrained by external factors such as the size of reserves or the rate at which they can be explored, more resources put into the sector will not expand it, as they would in other industries. When the size of the pie is fixed, people compete for a larger share instead of deriving profits from increasing the size of the economy.

The Dutch Disease discussion is incomplete without mentioning the effects of booming sector revenues on domestic fiscal spending, which eventually become unsustainable and politically difficult to curtail. The volatility of commodity-induced income may create a difficult political dynamic where public expenditures take a stop and go pattern. The next section in this thesis explores this issue in greater depth, but I found the topic also relevant to the Disease phenomenon. Ellman (1981) argues that expanding public sector was more detrimental to the Dutch economy than the adverse effects on manufacturing from real appreciation. Procyclical fiscal policy seems to be especially pronounced in developing countries reliant on natural resources for revenue. The logic is simple: in times of price booms governments enjoy income windfalls. Unable to resist temptation or political pressures, they increase fiscal spending proportionally or even more than proportionally. They try to do too much too soon overextending the fiscal expenditures. Several past studies of commodity-dependent Latin American and Middle Eastern governments have shown positive correlation between commodity booms and spending booms (Cuddington 1989; Sinnott 2009).
There are two significant fiscal expenditures that dominate procyclical fiscal spending: the government wage bill and investment projects. Frankel (2010) argues that problem is the perverse tendency for oil exporters to respond to high oil prices by increasing the number of workers employed by the state and their rate of compensation – and then, when oil prices fall, to face the painful and unpopular necessity of cutting back on the public sector wage bill. Over the period 1974-1997, his study shows high positive correlation between the price of oil and the government wage bill in Mexico, Venezuela and Iran. Interestingly Norway shows no such correlation possibly because of mature political institutions that shield against such effect. Increasing the wage bill and the number of workers is simple in light of price booms. It is much harder to reverse it and cut back when prices go down. For instance, Frankel (2009) illustrates this point by examining the public sector wage bill in Indonesia and Iran (two oil producers) against prices of oil over the preceding three years during 1977-1997. The relationship is clearly positive even with a three year lag, which indicates that public sector wage cuts are not easy to implement, and that it is not easy to lay the workers off. With respect to the second type of fiscal expenditure, large scale investment projects should arguably have a positive long-term effect on an economy if well-designed. However, many countries seem to fall into trap when such investments are stranded as soon as commodity prices go down because of insufficient funds required for their completion and maintenance. Projects are then either abandoned entirely or indefinitely postponed affecting long-term economic development.

All of the above factors contribute to the disease, which is primarily born out of the temporary nature of commodity booms. Sooner or later, it seems, when revenues from
natural resources dry up, the country is left with uncompetitive export sector, expensive
and overextended government sector and a large debt that resulted from the excessive
borrowing from abroad to finance the development of the domestic commodity industry.
Even if the price bonanza prevails for a substantial period of time, the crowding out of
non-commodity exports is often harmful because the manufacturing sector has usually
greater externalities for long-term growth of a given country.

Problems with Governance and Power Struggles

While the Dutch Disease provides an economic analysis of the pressures and dynamics that
the reliance on a commodity production entails, a less quantifiable matter involves the type
and quality of governance, institutions and political actors in the resource endowed
countries. Often, the economic pressures of the Dutch Disease seem to be exacerbated by
the actions and polices of the state officials stemming from a deficient system of
governance. The examples of Norway and Botswana, on the one hand, and Nigeria and
Iran, on the other hand, show the differences of outcomes in a given country's economic
prosperity of its inhabitants. Such diverging outcomes seem highly related to the quality of
institutions that control the domestic natural resources. Statistically however, it is far less
likely that an authoritarian oil country will transition to democracy than that a resource-
poor autocracy will. On average oil-rich governments spend two to 10 times more on their
militaries than countries without oil and are more prone to go to war. Most oil exporting
countries that do not have strong democratic institutions before they start exporting crude
inevitably create an inhospitable environment for democracy (Naim 2009).
Easy money, as has been extensively argued in the literature, can poison institutions—possibly more when resource discoveries and booms materialize when the country’s institutions are already deficient—and weak institutions can in turn undermine growth (Sinnott, Nash & de la Torre 2010). Norway and Botswana are two good examples of countries with already developed systems of governance prior to the discoveries of massive natural gas and gold reserves, respectively. One could as easily list countries whose institutional makeup had been deficient prior to the resource discoveries, and which stayed that way long after. In many autocratic countries the growing dependence on commodities as a source of fiscal revenue has been matched by an increase in dependence on commodity revenues to finance large increases in fiscal spending. Revenue windfalls induce rent seeking behavior and lead to poor governance, which in turn inhibits development of good institutions. Poor governance leads to lack of preparation in face of price fluctuations, exponential spending (and expansion of the public sector) during boom times and inefficient allocation of resources due to government patronage of the commodity sector when commodity prices fall. The cycle is self-reinforcing making attempts to remedy the situation all the more difficult.

Previous empirical studies have shown that economic dependence on oil and mineral is correlated with authoritarian government (Barro 2000; Wantchekon 2002; Jenson & Wantchekon 2004; Ross 2006) and that authoritarian regimes have lasted longer in countries with oil wealth. However, this is not a rule. In case of Venezuela, for example, the authoritarian regime had been already in power before oil development, and the country transitioned to democracy during the production boom. The correlation of
authoritarian regimes and natural-resources-riches is particularly pervasive in the Middle East and North Africa where the same ruling family or elite stays in power for decades.

The type of system of governance seems to bear high importance on what happens with the commodity revenue windfalls. In countries where physical command of mineral or oil deposits by the those in power automatically confers wealth on the them, there may be lesser incentives to develop institutions and practices that define high quality systems of governance, such as a strong rule of law and decentralization of decision-making. Such high quality institutions are conducive to economic development, and their absence or deficiency tends to have a negative impact on the level of development in a given country. A study of 93 commodity producing countries during 1970-2007 by two IMF economist Rabah Arezki and Markus Bruckner (2010), reveal that positive commodity price shocks lead to a reduction of in the level of external debt in democracies, while no significant reduction in external debt in autocracies. The external debt moves counter cyclically with commodity prices in democracies, but in autocracies there is no significant relationship. Such a phenomenon can be explained by the data that shows that the higher fiscal revenue from the boom cycle corresponds to significantly higher government spending in developing and emerging market countries:

In autocracies, windfalls from international commodity prices lead to a statistically significant and quantitatively large increase in government spending. In democracies on the other hand, the response in government spending to windfalls from international commodity prices is quantitatively small and statistically not significant. Hence, an examination of movements in government spending shows that commodity price shocks were associated with a significant procyclicality of

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5 The average level of external debt in autocracies is not significantly different in the authors’ sample from the average level of external debt in democracies
government expenditures to international commodity price shocks in autocracies, while in democracies government expenditures were acyclical. (Arezki & Bruckner 2010)

Karl (1997) further argues that:

Dependence on petroleum revenues produces a distinctive type of institutional setting, the petro-state, which encourages the political distribution of rents. Such a state is characterized by fiscal reliance on petrodollars, which expands state jurisdiction and weakens authority as other extractive capabilities wither. As a result, when faced with competing pressures, state officials become habituated to relying on the progressive substitution of public spending for statecraft, thereby further weakening state capacity. (Karl 1997)

Interestingly, the author’s study shows that in democracies the commodity price windfalls corresponded to improvements in the rule of law and real per capita GDP. In autocracies, on the other hand, no such experience has been recorded in spite of significant increases in governmental expenditures. In many of the commodity-rich countries this phenomenon is pervasive. For example, in Latin America commodity producing countries derive on average 24% of total fiscal revenues from sales of commodities compared to just 9% for the advanced resource-rich economies (Sinnott, Nash & de la Torre 2010).

Krugman (1989) argues that high external debt levels effectively act as a tax on future investment projects, and thus constrain the financing of these projects in the future. Democracies use the revenue windfall from high commodity prices to reduce their external debt levels while autocracies systematically fail to do so. Instead, the later directly spend a large part of their additional revenues on government expenditures. Finally, Krugman’s study shows that such windfall reduced the risk of default on external debt in democracies, and that such risk increased in autocracies.
But why would autocracies increase government spending in light of revenue windfalls? In democracies the political process is more transparent. Would not then one expect politicians in democracies to substantially increase government spending because of electorate pressures associated with the election process? In democracies politicians would rather focus on reducing external debt because it is a clear and transparent strategy that will be associated with a lower tax on future investment projects. As a result:

Spending revenue windfalls on reducing external debt rather than increasing total government expenditures should therefore be the preferred strategy by the majority of citizens, and hence by the median voter, if there is a severe risk that revenue windfalls from international commodity price shocks are sub-optimally administered by the government. (Arezki & Bruckner 2010)

Since the politicians in democracies are more easily held accountable by the public, they are pressured to spend more effectively. In autocracies, on the other hand, the way spending is administrated is not very transparent. Autocratic leaders are much less accountable to the citizens creating a space for abusing public office for private purposes. Spending large chunks of commodity windfalls on government expenditures does not put them under similar public scrutiny as it normally does in democratic systems where government officials need to answer to the electorate or to independent government bodies that have oversight over such expenditures. Strong democratic institutions successfully constrain powerful groups from extracting transfers from the government budget.

The Islamic regime in Iran during 1980 to 1997 is an apt example of a vast misuse of commodity-revenues by the state (Badiei & Bin 2002). Iran’s economy depends on the
collection of revenues from a single commodity, oil. And oil is one of the commodities whose price has been determined by the globalized markets. Following 1980s, the government has allocated revenues from oil rents to unproductive activities and politically motivated consumption expenditures. Presumably the goal of such revenue allocation was to limit and contain potential internal uprisings and external threats. The government of Iran has consistently channeled the commodity riches into all sorts of formal and informal subsidies benefiting those interest groups that provided a sustained ideological and material support for the regime in Iran. During the said period, the government failed to accumulate capital and build up long-term investments.

It is easy to see that the higher the payoff that the commodity rents generate for those in power, the higher the chance that the government will spend extra resources to ensure retaining the power or being reelected (Robinson 2006). In moderate systems of governance, this phenomenon will manifest itself in patronage of key stakeholders which in turn may lead to inefficient resources allocation. A government that wants to maintain power may use government expenditures to target important constituencies. It may, for example, expand the public sector by hiring more civil servants or allocate money to "pork barrel" projects. Shopping for votes can turn the commodity revenues into politically expedient projects at a cost of economic growth.

In light of high unemployment levels and vast income inequalities that often plague commodity-rich countries, governments, or rulers, have long resorted to food and fuel subsidies as a way to keep the popular discontent at bay and to boost the dependence on
government services. In 2009, fuel subsidies amounted to roughly $150 billion in the Middle East and North Africa. At that time oil cost just over $60 a barrel. It is easy to see what happens when price of oil on the global markets shots up. In early 2011, the price nearly doubled leading to regional fuel subsidies to rise to almost $300 billion per year representing 7.5% of the area’s GDP. One way to prevent such a jump in expenditures would be to increase domestic fuel prices. However, oil-producing countries are likely to charge lower domestic gasoline prices. The income obtained from upstream activities subsidizes domestic downstream consumption. According to the Economist\(^6\), as of March 2011, a liter of petrol at retail cost the consumer $0.20 in Saudi Arabia, under $0.10 in Venezuela and $1 in Russia (and the U.S for that matter), while in Germany and the U.K. consumers pay close to $2.5 per liter. Apart from modest subsidy cuts in Qatar and Iran, no other Middle Eastern country has slashed the generous subsidies.

The tradition of splurging revenue windfalls on handouts to the public to buy off economic discontent has been particularly pervasive since the toppling down of the Egyptian ruler Mubarak in early 2011. Increasing wages in the public sector has been the most common way. For example, Saudi Arabia boosted public-sector pay by 15% as part of extra $36 billion spending program. According to the Financial Times\(^7\), the level of government spending in Saudi Arabia is so high that in 2011 the price of oil will need to be at least at $80 per barrel for the government just to balance its budget. Similarly, Egypt, Jordan, Oman and Syria have followed the footsteps. In Syria and Jordan alone, the one-time wage increase amounted to 0.4-0.8% of GDP. Kuwait, on the other hand, has offered free

\(^6\) "Throwing money at the street," The Economist, March 10, 2011
\(^7\) "Wells of anxiety," The Financial Times, March 29, 2011
food to everyone for 14 months and $4000 per person. This is not to say that most of these economies do not have the money to spend. Each $1-a-barrel increase in the price of oil adds about $3 billion to the Saudi treasury. Yet if the prices of commodities do in fact fall in the future, such spending programs quickly become unsustainable. If they do, and if the governments will need to curtail their lavish fiscal programs, popular discontent is sure to ensue.

Another peculiar phenomenon besetting commodity-rich countries are low or nonexistent taxes. Governments in such countries need not depend on taxing the population to generate fiscal revenues – the resource sector provides revenues; hence, the leaders have little incentive to be responsive and accountable to the taxpayers. Such an arrangement may have freed those in power from the need for democracy. The need for tax revenue is believed to require democracy under the theory “no taxation without representation.” In this case however there is “no representation without taxation”. The state’s primary role becomes distribution or allocation of revenues rather than extraction of income from citizens. The government is relieved from political accountability that the taxation entails and uses its role as distributor of wealth as a source of legitimacy. Question of democracy is not a problem for such states. Money is the ultimate source of control, used to develop the economy in a way that will maximize obedience, which is obtained by controlling the structure of the market and the flow of funds (Okruhlik & Gwenn, 1999). Inhabitants in turn have a parasitic links with the state. One could argue that the there is little incentive for a person receiving monthly government checks to innovate and engage in entrepreneurial pursuits. Rich parents sometimes spoil their kids. Mother Nature is no
exception (Gylfason 2006). Low or non-existent taxes and generous welfare programs may also discourage groups from mobilizing around economic issues solidifying the power of those on the top.

In countries with weak governance and large income inequality amongst the population, controlling natural resources creates not only a significant pay off for those in power, but also a large pay-off for those in a position to contest that power. Natural resources are more easily appropriated by those in power than the output of the industrial sector or other sources of wealth. Because of concentration of wealth in one sector that generates substantial revenues such countries are prone to experience power struggles as the potential challengers have strong incentives to topple the existing governing government, often through violent means such as coup d'etats. The higher probability of losing power to a successful challenger reduces the effective rate of return to investing in the country’s development for the existing elite, and may induce them to undersupply human capital, infrastructure, contractual enforcement, and the rule of law (Caselli 2006).

For example, Nigeria, the world’s top ten oil exporter, suffered eight successful coups since gaining independence in 1960, the last one in 1993, amounting to two forceful changes of government per decade. The nature of Nigerian power struggle shows the self-interested, short-term motives of the group of individuals seeking control over the state: by assuming power they become instantly recipients of fortunes. As the rulers remained in power for short period of times, they tried to “get rich quickly” by accumulating vast personal wealth, mostly in foreign accounts. The latest dictator, Sani Abacha, amassed a
fortune worth billions of U.S. dollars. Such self-interested dynamics of the ruling elite leave little room to use the oil wealth to help the country industrialize and develop. With a high forced government turnover ratio, those in power have no motivation to pass on economic benefits that should flow from productive utilization of oil windfalls to future leaders or the citizens.

Similarly, Hodler (2010) developed a model where natural resources lead to fighting among groups. Fighting in turn is assumed to reduce the protection of property rights, and through this to reduce private investment. In addition, Acemoglu, Robinson, and Verdier (2004) argue that abundant natural resources provide kleptocratic rulers with the resources to buy off the opponents. Fearon and Laitin (2003), Collier and Hoefller (2004), Humphreys (2005) and Collier (2007, Chapter 2) all find that economic dependence on oil and mineral wealth is correlated with civil war. Angola and Sudan are adequate examples of this hypothesis. Brunnschweiler and Bulte (2009) however argue that conflicts increases dependence on resource extraction, rather than the other way around. Regardless of the cause-effect relationship, the fact of the matter remains unchanged: natural resources and the presence of power struggles and conflicts go hand in hand.

Rentier State and Rentier Economy

The concept of rentier state was first popularized by the economist Hussein Mahdavy who, by looking at the examples of the Middle Eastern countries, argued that governments

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8 Caselli and Coleman (2006) also present a model where natural-resource abundance can lead to fighting, and lower incomes.
receiving significant oil revenues from abroad tend to become detached from their societies, autocratic and unacceptable to their own citizens. The vast amounts of foreign currency and credit generated from the oil industry flooded the state coffers and as a result turned oil-producers in the Middle East into rentier states (ex. Kuwait, Quatar, Iran, Iraq). One of the main characteristics of the rentier state is that the revenues come from abroad and accrue directly to the state, and not to the private sector. Until mid-1970s virtually every petroleum and mineral exploration company was a foreign owned multinational that would repatriate the commodity economic rents. Since 1980s the dynamics changed as the governments in many commodity-based developing states took measures to nationalize the companies and capture the rent bounty. Historically, rents came from the exports of precious and base metals and oil. Following Mahdavy's footsteps two economists, Hazim Beblawi and Giacomo Luciani, coined the term “rentier economy” arguing that the rentier state is a subset of a rentier economy, and that the nature of the state is best examined primarily through its size relative to that economy and the sources and structures of its income. A rentier economy is an economy in which rent plays a major role, and in which that rent is external to the economy.

The issue of the ownership change of the resources industries is an important one because it posed harmful consequences to many developing countries. Foreign corporations had the technological and industry know-how that acted as buffers to international market shocks. With the governments taking over the commodity production, entire economies became directly more exposed to export instabilities. The buffer that foreign multinationals created was essentially gone. State ownership could have also induced the
tendency to over borrow to develop the capital intensive commodity infrastructure and industry base (particularly in the energy exploration space). In the past, this cost would have been primarily bared by the private sector. Finally, one could call into question the inefficiencies of state-owned companies and the corresponding impacts on productivity.

Rentier-states derive most of their revenue from external sources, which in case of natural resource-based economies are from the exports of the commodities, but it can also take form of foreign aid. Such governments as a result are freed from the need to collect income domestically in the form of taxes and hence become less accountable to the people they govern. The pervasive incentives in rentier-state seem to explain the lack of democratic pressures and weak record of economic development in many of the oil exporters in the Middle East and Sub-Saharan Africa. Mahdavy also suggests that commodity rents make government officials risk-averse and prone to devote much of their resources to protect the status quo rather than promote economic development. Similarly, rentier states adopt policies that are exceptionally risk-averse, favoring “egalitarian current consumption” over development policies that while furthering social and economic transformation, risk provoking social conflict (Chaudhry1989). All these arguments have at their core two nonobvious claims: first, that states are revenue satisficers, not revenue maximizers; and, second, that when a state's demand for revenue diminishes, so will the soundness of its economic policies. These theories conversely imply that states that are revenue-poor and tax their populations more heavily will adopt sounder economic policies and have better growth records (Deacon 2010).
As two recent papers on Brazil demonstrate, windfall rents may exacerbate the quality of institutions. Caselli and Michaels (2009) find that the oil-driven increases in municipal revenues and reported spending have not been accompanied by a commensurate improvement in the welfare of people living in the municipalities. In particular, the increase in municipal spending was not matched by a corresponding increase in the provision of public goods and services, as recorded by household survey–based measures. Observed increases in household income associated with royalty-induced government revenues were negligible. What then happened to the oil revenues? The authors find evidence that the revenues went disproportionately to municipal employees and were partly accounted for by some degree of rent seeking and corruption. Similarly, Brollo, Nannicini, Perotti, and Tabellini (2010) find empirical evidence that the large windfall transfers to Brazilian municipalities seem to have induced more political corruption, as measured by a random audit program.

Finally, Lane and Tornell (1997) point out that commodity windfalls may cause a "feeding frenzy" in which competing groups fight for the natural resource rents thereby inefficiently exhausting the public good. This effect is exacerbated by the direct accrual to the government of a significant portion of the rents, possibly impeding the implementation of needed structural reforms and sometimes distracting public officials from pursuing growth-supporting policies.
Corruption

The issue of corruption seems to invariably flow from the discussion of the quality of governance and the rentier economy. It is relevant because commodity abundance translates into extremely high rents, and it will therefore likely create rent-seeking behavior. Countries with weak governance systems that discover substantial resource endowments are particularly at risk. For example, a developing country on its way to economic development invests substantial financial and physical resources to develop capital intensive natural resource projects. As the projects start bringing revenues the lagging institutions are unable to keep apace creating fertile conditions that breed corruption and unproductive activities. The system fosters relocation of talent from productive to rent-seeking activities. Corruption (such as instances of bribery) enables the most effective and efficient rent-seeking in those circumstances.

Bhattacharyya and Hodler (2008) show that resource abundance increases corruption in countries with poor democratic institutions, but not in countries with comparatively better democratic institutions. Based on empirical data the authors found that the resource abundance is positively associated only in countries that have endured a non-democratic regime for more than 60% of the years since 1956. Resource-rich countries with long history of democratic governments such as Norway or Australia do not succumb to corruption to the same extent because the governments are directly accountable to the people. In non-democratic countries there is a tendency for governments to be corrupt because resource windfalls encourage rent-seeking, which in turn is left under little public
scrutiny. Hence, governments will tend to allocate the high financial windfalls at will growing corrupt in the process of doing so. Naim (2010) gives an example of several sovereign wealth funds and oil-stabilization funds adopted by countries to counteract the negative effects of commodity-dependence such as price volatility, excessive fiscal spending, indebtedness and export-inhibiting appreciating exchange rates. Such funds seem to rarely work especially when strong governance is lacking. The funds are either exhausted prematurely or spent on poor investments. In fact, the presence of excessive corruption usually entails high-levels of procyclical government spending of the revenue windfalls.

An economy more open to trade (a higher value for trade openness), with stronger institutions (a higher score for rule of law), and with a higher degree of political stability (a lower value for political instability) would tend to have less corruption. The case of power struggles and corresponding high level of corruption illustrates the how a poor institutional make-up in a given country fosters rent seeking behavior. The state’s interest is to capture the rents, but often such behavior is paralleled by corruption. “Mines and oil- and gas fields often involve high sunk costs and low variable costs, making them a tempting target for expropriation.”9 Therefore, privatization and nationalization cycles usually follow price cycles in commodities.

Education Neglect

When researching the types of mistakes that resource rich countries tend to make the prevailing literature on the topic ignores the importance of development of human resources through a long-term sustained investment in education. Investment in human capital seems essential in keeping the growth engine running for any country, let alone one that is subject to high volatility in revenues and the possibility of eventual depletion of the sources of revenues. Joseph Stiglitz puts it aptly:

> You get older one year at a time, and no matter what innovations have occurred, that process of ageing has not stopped. So therefore if you don't renew your human capital, it depreciates just like physical capital depreciates … In economies, you have to run to stay still; that the world is changing, and you have to change even if nothing else is going on. (Stiglitz 2010)

I found Gylfason’s (2000) assessment of the issue particularly interesting. Statistics show that school enrollment tends to be negatively correlated to natural resource endowments. In late 1990s, secondary school enrollment amounted to 57% in OPEC countries against 64% in the world on average. OPEC counters would also spend about 1% less of GNP (about 4%) on education than for the world as a whole. Gylfason suggests that in many of the commodity-rich countries the resource endowment is deemed most important at the expense of human capital: “Their natural wealth may blind them to the need for educating their children.” The author further argues:

> …resource-rich countries become overconfident and therefore tend to underrate or overlook the need for good economic policies as well as for good education. In other words, nations that believe that natural capital is their most important asset may develop a false sense of security and become negligent about the accumulation of human capital. Indeed, resource rich nations can live well of their natural
resources over extended periods, even with poor economic policies and a weak commitment to education. Awash in easy cash, they may find that education does not pay. Nations without natural resources have a smaller margin for error, and are less likely to make this mistake. (Gylfason 2000)

Without special policies and programs, resource-rich countries risk falling behind in terms of population skill-sets and capabilities as compared to non-resource-based economies. Commodity industries tend to be low-skill labor intensive (particularly mining, agriculture, fisheries, forestry); there are however few expectations such as oil-drilling operations. On average such countries run the risks of locking too many people in low-skilled industries with little chances to advance their earning power and education, lagging the non-commodity countries in terms of productivity and social mobility. A notable exception to this dynamic is Botswana, which I will discuss in a greater detail in the next chapter. The Botswana public officials seem to understand the long-term implications of neglecting the development of human capital where expenditures on education relative to income are amongst highest in the world. In the country where proceeds from a single luxury resource account for more than one-third of GDP, 80% of exports and about half of the government revenues, the importance of investing in human capital seem to be understood. Similarly, Norway where government takes in about 80 percent of the oil rent through taxes and fees boasts one of the highest college attendance numbers since the discovery of oil fields in late 1970s. The proportion of collage attendees have been rising steadily from 26% inn 1980 to 62% in late 1990s.


**Remedies for Resource-Based Economies**

*If one wants to achieve economic security, economic stability, sustainable development, one has to engage in participatory processes in trying to absorb some of the lessons that some of the other resource-rich countries have absorbed.*

- Joseph Stiglitz

The previous section discussed many of the challenges and pitfalls that natural resource-endowed countries face. Such riches by itself do not immediately confer good economic performance nor oil, gold, copper or silver wealth need necessarily lead to inferior economic or political development. There are ways through which most of the challenges can be successfully mitigated and the commodity revenue windfalls turned into good uses short-term and long-term. But the presence of such wealth resembles a double-edged sword that if mishandled results in malady for the majority of inhabitants of a resource-rich country rather than prosperity. The priority for any government should be to avoid the dangers while taking advantage of the endowment so the curse turns into a blessing. It is not an impossible task with countries like Norway, Botswan and Chile serving as models of responsible resource management.

Because the role of the government is so important in managing the resource sectors in all of the resource-rich countries, particularly those in the developing world, the monetary, fiscal and legal tools are essential in mitigating the hardships described in the previous chapter. Governments are key as they can diversify their export base and direct investments to boost productivity in resource sectors to offset the decline in the terms of trade; they can counteract the income volatility through fiscal policies and sovereign wealth funds; they can mitigate the negative effects of the Dutch Disease by managing the
exchange rate, subsidizing non-commodity sectors and placing windfalls in foreign currency to prevent the rapid appreciation of domestic currency. As Neary and van Wijnbergen (1986) suggested:

In so far as one general conclusion can be drawn (from our collection of empirical studies) it is that a country's economic performance following a resource boom depends to a considerable extent on the policies followed by its government. ...Even small economies have considerable influence over their own economic performance. (Neary & van Wijnbergen 1986)

There needs to be a comprehensive plan incorporating most if not all of the policies and measures that are described in greater depth. There is not a single golden rule, but rather a multitude of different measures that need to act in a concert with one another. In this section, I begin my inquiry into the different methods of the resource curse management by first exploring monetary and fiscal policies. I move later to the issue of good governance, and conclude by proposing a multi-step framework for a responsible resource management.

**Monetary Policy Response**

The Dutch Disease can be remedied effectively by various governmental and monetary practices. The combined effect of two outcomes that follow resource booms, i.e. the appreciation of the real exchange rate caused by an increase in exports and the tendency to crowd out non-commodity industries by drawing the capital and labor away rising their production costs, can be counteracted by monetary and policy moves.
To remedy the volatile nature of commodity revenue flows that invariably affect the exchange rate governments can set the exchange rate policy between fixed and floating regime or a derivative of the two. They each have their advantages, and depending on the size of the economy, trading patterns and importance of the natural resources endowment in the economy, one should be preferable over the other. A price boom in commodity markets should lead to the real exchange appreciation for commodity exporters while a shock in terms of trade should have the opposite impact, i.e. a real devaluation. The major advantage of the fixed regime is that it should reduce costs of trade and help central banks achieve credibility in fighting inflation, which is an important factor for many of the developing countries with weak governments. In such a regime the changes in the price of commodities in global markets manifest themselves in forms of inflation (for real depreciation) and deflation (for real appreciation). The fixed exchange rate regime seems to be a better fit for commodity exporters that have open trade policies with a small non-tradable sector and whose economies are relatively small. Such countries are not limited to pegging their domestic currency to the dollar or euro. They can choose a basket of currencies that reflects the diversity of their trading partners. Most of the Middle Eastern oil producing countries and countries like Ecuador have adopted fixed regimes in the past decade.

On the other hand, the main advantage of the floating exchange rate regime for a commodity exporter is the automatic adjustment of the exchange rate in response to commodity price volatility: during a price boom the currency appreciates and depreciates when prices fall. Such a process should prevent the economy from overheating by
curtailing some of the excessive capital inflows. A commodity exporter with a large non-tradable sector prone to experiencing shocks that are not symmetric to those in its main trading partner and exposed to volatile terms of trade could be better off with a floating exchange rate regime. A flexible currency should in principle help a country adjust more quickly to the rapid price changes in the relevant commodity markets implying better inflation management in the boom years. Chile and Mexico are examples of pure floating commodity producers.

Because of the vast discrepancies in the domestic economic conditions and trading partners of the commodity producers there is no one-size-fits-all exchange rate regime that ameliorates the effects of the Dutch Disease on the real exchange rate. One interesting option has been put forth recently by Frankel (2010) who advocates that commodity exporters adopt Peg the Export Price (PEP) regime. The idea behind PEP is that the monetary policy should keep the local-currency price of the export commodity stable on daily basis. For example, if for an oil exporter the price of the commodity on international markets go up by 1%, the dollar price in terms of local currency should also go up by 1% making the local price of oil unchanged. Frankel argues that “PEP combines the best of both worlds: it automatically accommodates terms of trade changes, as floating is supposed to do, while simultaneously abiding by a pre-announced nominal anchor.” The nominal anchor here refers to inflation targeting. When one incorporates the PEP regime to the examples of Indonesia and Russia in late 1990s, the simulations show that both of the countries would undergo automatic currency depreciation when prices of oil dropped without experiencing the actual currency crises.
The second Dutch Disease issue of crowding-out of other economic sectors, such as manufacturing or agriculture, by the resource industries should be quite easily dealt with by the government, at least in theory. Subsidies to the affected sectors (as long as not too excessive) and taps on fiscal expenditures should prevent labor and capital from being drawn away. Efforts to diversify the production structure of the economy and the export profile should prove beneficial in the long-run. Several empirical studies have however suggested that this phenomenon is not as pervasive as commonly deemed. A research by Gelb (1990) of seven oil exporters during 1971-1983 price boom showed that only four countries experienced the crowding-out effect. Other studies seem to point that the manufacturing sector of mineral and oil exporters are unharmed by commodity export booms. One would need to however examine the manufacturing sector to discern the effects. For example, if the majority of the manufacturers import intermediate goods, a currency appreciation would make their costs of production cheaper; hence their competitiveness may not be damaged. In case of the agriculture on the other hand, the negative effects seem to be more pronounced.

The example of Australia indicates the positive effects of the Dutch Disease where the shift of labor and capital towards the booming minerals sector indicated a change in the country’s comparative advantage. The shift enabled Australia to enjoy higher income through participation in the international trade. A reduction in aggregate income did not occur. Australia become a high-income country, based largely on its resource wealth. From an economic perspective, the specialization brought about by Dutch disease is a
malady only to the extent that devoting a country’s real resources to producing commodities is in some way inferior to devoting them to producing something else, which was not the case here (Sinnott, Nash & de la Torre 2010).

**Fiscal Policy Response**

One of the biggest challenges faced by resource abundant countries deals with the issue of going on a spending spree once the commodity revenue windfalls hit the state coffers, i.e. the excess in pro-cyclical government spending. Commodity revenues pose three problems for the governments: response to short-term price volatility, long-term wealth management and diversification of revenue base in case of the bust cycle. The central issue when it comes to revenue allocation and management deals with the ability, or rather inability, of state officials to put the money into use gradually over time to benefit the public’s welfare in the long-run. This situation is akin to a poor person winning a lottery. More often than not, a poor person squanders the winnings because he/she does not know how to manage it.

The issue takes on different forms depending on the nature of a given commodity producer’s governance structure. In democracies where policy horizons are often dictated by short-term election cycles, those in power place little value in saving the revenue windfalls for future consumption. Such governments often lack credibility to save today and spend tomorrow. In autocratic regimes, on the other hand, commodity rents are more
likely to fall prey to corrupt officials, and more likely to be used as means to keep population’s in check.

To shield governments, state officials and politicians from the temptation or political pressure of a pro-cyclical spending bonanza, a set of legally enforceable rules and peculiar institutional arrangements need to be organized. The enforceability of such rules will largely depend on the quality of legal institutions in a given country and the strength of the rule of law. Chile provides an apt example of a commodity-exporter whose fiscal policy is governed by a set of specific rules aimed at managing the cyclical budget surpluses. The country has achieved what few of the resource-rich countries have been able to achieve: pure countercyclical fiscal policy. As the world’s biggest copper exporter, Chile has adopted a set of budget targets depending on the copper revenues (originally the target was a surplus of 1% of GDP, but then lowered to 0% in response to sharp price drops in 2009.) Under Chilean rules there are two circumstances when the government can run a deficit larger than the predetermined target: 1) during a recession when output falls by bigger than expected, 2) when price of cooper is below a 10-year equilibrium (Frankle 2010). Crucially, there are two panels of experts that meet mid-year to determine the 10-year equilibrium price of copper and the output gap.

Such fiscal device has served Chile well. During the copper boom of 2003-2009, the public pressure mounted on the expert panels to declare the rise in copper prices permanent as a way to justify the need to increase the government spending proportionally to the increasing export revenues. The panel did not yield and ruled the copper price boom
temporary. At the peak of prices in mid-2008, the Chilean fiscal surplus reached almost 9% allowing the country to pay down its debt to 4% of GDP and saving $20 billion, equal to about 12% of GDP in the sovereign wealth fund. When prices drastically reversed in late 2008 and early 2009, the government released some of the previously stored funds to stimulate the wounded economy by spending an equivalent of 3% of GDP on a whole host of programs. For example, as part of the fiscal stimulus in 2009, Chilean government made one-time transfers of money to the poorest 40% of the population, which amounted to about two months’ worth of income. Chile was able to do so without running a budget deficit thanks to savings accumulated in the boom times. On a smaller scale, Bolivia, Mexico and Peru have also saved part of their windfall gains from high commodity prices. Modeled on Chile, Brazil’s congress is considering a law according to which a chunk of the revenue from the new deep-sea oilfields will be saved in a special social fund. However, it is assumed that most of the windfall money will not be saved but rather spent on education and anti-poverty programs.

A consequential and rigid policy is usually domestically unpopular. As a country enjoys soaring income from commodity exports, few excess revenues trickle down to the people. In June 2008, the president of Chile, Michele Bachelet, and the Finance Minister, Andres Velasco, suffered one of the lowest approval ratings in the history of Chilean democracy. Yet, as soon as the fortunes reversed and copper prices fell sharply, the country managed to escape relatively unscratched one of the worst global economic recessions since the Greta Depression. As expected, just one year later in mid-2009 the two state officials enjoyed the highest approval ratings of any President and Finance Minister.
The legal framework stipulating budget surplus targets and providing legitimacy to the expert panels were proved to be very effective tools. Such measured combined another feature that is often found in successful resource producers: commodity and sovereign wealth funds. Given the price volatility and the risk of depletion of natural resources establishing a commodity fund to save some of the excess revenues for a rainy day is a wieldy used and an essential policy tool.

**Case of Norway – Sovereign Wealth Fund**

Norway with population of 4.9 million is considered one of the wealthiest countries in the world. Norway ranks as the second wealthiest country in the world in monetary value, with the largest capital reserve per capita of any nation. However until 1970s, few envisioned that this country would in just 30 years turn to be a model for other countries to follow.

Norway has historically dependent primarily on agriculture and fisheries. It was one of the worst hit economies post WWI and post WWII. As a small open economy that historically thrived on international trade, the post-war recessions hit the country hard. Its largest trading partners UK and Sweden were weak. Secondly, the combination of strong and mostly pro-cyclical inflationary monetary policy between 1914 and 1920 and thereafter a hard deflationary policy made the crisis even worse. It would be naive to assume that Norway owes its current economic success exclusively to a discovery of vast petroleum
resources at the Ekofisk field, positioned as part of the Norwegian continental shelf, in 1959 by Philips Petroleum. Examples abound of countries lagging in terms of development and standard of living that possess equivalent resource endowments. Rather, for Norway it was the 20 year preceding the resource discovery where one can clearly see an impressive track record of responsible economic planning and fiscal management. The so-called golden era of the Norwegian economy between 1950 and 1970, has seen an annual growth of GDP per capita of 3.3%, increased foreign trade, almost nonexistent unemployment and tame inflationary pressures. The core of the Nordic model with a large public sector delivered social security and evenly-distributed wealth, but it did not necessarily give very high economic growth. The Norwegian growth rate in the period was lower than that for most western nations. But the Norwegians had already established good economic planning, an experience of which would prove crucial in managing the natural-resource period that followed.

The effects of the discovery of the vast oil and gas reserves in the North Sea have not however allowed Norway to fully escape the Dutch Disease. While the government’s countercyclical fiscal spending policy following the 1973 oil price shocks helped the country avoid succumbing to a prolonged recession and the slow growth experienced by other developed economies (the country in fact recorded higher economic growth and lower unemployment levels in 1970s than in most other Western countries), Norway lost significant competitive power in the international markets. The procyclical spending policy concentrated on doling out subsidies to Norwegian companies making such firms respond more to the changing government policies rather than competitive pressures in the
market. A vast number of Norwegian firms started to lag behind foreign counterparts in terms of productivity resulting in a large-scale deindustrialization.

The rising prices of petroleum products in late 1970s and early 1980s translated into significant growth of the energy sector and rapid crowding out of manufacturing. The high oil revenues pushed labor costs high in the oil sector, which in turn spilled over to other sectors making Norwegian exports less competitive. The country suffered a much quicker pace of deindustrialization than its major trading partners. While the country was unsuccessful escaping the main threats of the Dutch Disease, smart government planning and long-term policy view enabled the country to maximize the benefits of the generous, albeit volatile, energy sector shifting its comparative advantage away from non-oil industries.

Ever since the 1959 discovery, oil and gas production has been a big part of the Norwegian economy. Nowadays, export revenues from oil and gas amount to 45% of total exports and constitute more than 20% of the GDP. While not a member of OPEC, Norway is the fifth largest oil exporter and third largest gas exporter in the world. What sets Norway apart from the majority of other commodity producers in the Middle East, North Africa and Latin America is not necessarily almost absolute control of the industry by the government (this trend prevails worldwide), but rather the quality of windfall revenue management system and the responsible (and more importantly consequential) policy planning related to the oil/gas industry. The Norwegian government controls licensing of
exploration and production of all the fields. It holds major ownership stakes in the big energy players in the country: 65% stake in Statoil, 100% stake in Petoro and SDFI.

Established in 1995 the Government Pension Fund ("Fund") is the main tool for the oil/gas revenue management. Its main objective is the equitable distribution across generations of the natural resource income achieved by minimizing uncertainty from volatile commodity revenues and reduction of the possibility of over-heating in economy during boom cycles. The Fund is funded with revenues from oil/gas sales, taxation on the resource-related activities, dividends from the investments that the Fund makes and licensing fees. Valued at $500 billion 2010, it is world’s second largest sovereign wealth fund in 2010. The savings accumulated in the Fund equal the Norwegian GDP and are the largest capital reserve per capita of any nation. According to conservative estimates the fund may reach $900 billion by 2017.

The value of the Fund is not only correlated to the increasing petroleum windfalls but also to the value of the investments that are made with the Fund’s capital. Up to a maximum of 60% of the Fund’s capital can be invested in the shares of companies outside of Norway with the remaining placed in bonds and real-estate. The investments are made with a long-term horizon in a diversified portfolio with less liquid and riskier assets constituting major portfolio weightings. There are many guidelines and rules that govern the management and investment process of the Fund. For instance, the interest and dividends from the Fund’s investments are used to balance the structural, non-oil deficit in bad times, while the principal can only be used to cover future pension liabilities. In addition, strict
budgetary guidelines prevent the state officials from overspending the Fund’s riches during difficult times. Currently, the government can use up to 4% of the Fund each year.

The mere existence of a sovereign wealth fund does not guarantee restrained fiscal spending during boom cycles and responsible spending in the bust cycles. Russia has used Norway’s Fund as a model for managing its own commodity revenues, yet it has not been nowhere near as successful succumbing to short-term political pressures and an opaque investment process. Even with a clearly stated objective of long-term saving policy, good intentions are necessarily but not sufficient. Many other factors come into play. Norway had a track record of responsible fiscal and monetary policies prior to the discovery of the petroleum wealth in 1959. The massive wealth windfalls have shifted the country’s comparative advantage to the energy sector, but other factors enabled the country to sustain a long-term economic growth. Davis, Ossowski, and Fedelino (2003) credit Norway’s “mature democracy and strong, consensus-oriented parliamentary institutions as key factors behind [the] outcome.” Sinnott, Nash and de la Torre (2010) argue that:

The country benefits from a broad societal understanding of the need to restrain public spending and avoid volatile expenditure patterns. Transparent political and bureaucratic processes and stable policies that incorporate long-term considerations contribute to the prudent fiscal outcomes. Prudence and long-time horizons for managing windfall commodity rents are arguably easier to achieve where private enterprise thrives. A strong and efficient private sector that perceives broad opportunities to engage in productive enterprise is less likely to engage in rent-seeking activities. (Sinnott, Nash and de la Torre 2010)

But Norway is just one example of a commodity fund. The oldest and biggest funds belong to the Middle Eastern oil and gas exporters – Kuwait and the United Arab Emirates.
Out of twenty countries in the world with the biggest sovereign wealth funds, twelve are strictly commodity-based. Mere creation of a fund will not guarantee that short-term oriented politicians or corrupt government figures will keep their hands off the saved commodity windfalls. The funds need to be transparent and governed by a clearly defined set of rules and restrictions spelling out the specific circumstances under which commodity revenues are to be saved, invested or spent. Humphreys and Sandhu (2007) recommend that spending choices are part of the official governmental budget, so they do not become any politicians’ private “slush funds.” To avoid short-term pressures from the political cycles in democracies and public discontent in non-democratic regimes in earmarking the commodity revenues for specific good causes such as education, health, or retirement support for a future generation should prove an effective policy choice. If people know how and when the money is spent, they should be more tolerant of the countercyclical spending policies and have greater oversight over potential transgressions by state officials.

Additional Measures – Reserves Accumulation, Capital Inflows Restrictions and Permanent Funds

In addition to sovereign wealth funds or commodity funds, there are additional ways for countries to save during commodity price booms and spend when the resource revenues dry up. One of the measures involves accumulation of foreign reserves by central banks through the exchange intervention. The goal is to smooth spending over time. Yet many economist shave deemed this method a suboptimal choice because of low returns and potential inflationary pressures. Such foreign reserves would earn low yields because they
would primarily be riskless bonds such as the US treasury bills. Increasing foreign reserves on the central bank’s balance sheet would need to lead to a monetary expansion and hence inflation. Frankel (2010) argues that in the event of excessive foreign reserves, a central bank should sell some of it to the country’s commodity fund/sovereign wealth fund. Such a move should be however dependent on whether such a fund is politically independent. In case that it does not have independence, and the central bank does, foreign reserves should be kept unsold where they cannot be easily raided. Furthermore, in case of excessive foreign reserves buildup, a government should consider lifting any restrictions (or even encourage) of its citizens to invest abroad. Similarly, a country could also place capital inflow controls shielding itself from the possibility of overwhelming the domestic economy. For example, Brazil has introduced a range of targeted capital controls since 2009 to discourage short-term speculative flows.

Finally, an interesting example of preventing the government from making choices as to what to spend the commodity windfalls on is illustrated by the Alaskan Permanent Fund. While the earnings from the Alaskan oil sector flow directly to the Fund, it is mandated under the state law that half of such earnings are to be distributed to the local population on per capita basis. The idea is that people know better how to spend the money than the government. Similar approach has been recently proposed for resource windfall management in Nigeria and Iraq (Subramanian 2003; Birdsall & Subramanian 2004)

**Potential Solutions to Governance Deficiencies**
Monetary and fiscal measures aimed at shielding countries from the many challenges faced by relying too much on the resource production and exportation are rather easily defined and have been tested historically in a number of commodity-based states. As I have discussed above, a commodity-producing country has numerous weapons at its disposal to fight off the resource curse. Any state can adopt policies dealing with the excessive and volatile nature of commodity cycles modeled on policies of such successful commodity managers as Chile or Norway. The inability of many states to live up to the potential that the resource endowments can bestow upon them comes down to factors that are more difficult to define and that go against some of the basic human instincts. The type of governance and the attitudes of those in power are usually highly indicative whether the resource wealth turns into a cure or a blessing. For example, how would one change the culture of power struggles, rent-seeking and corruption in Nigeria so that responsible management of oil revenues can benefit citizens domestically?

Even in less extreme cases many of the difficulties in optimal management of the commodity incomes come down to the credibility of governments handling the windfalls. If citizens do not trust state officials’ promises to manage the wealth responsibly and save for the future, they will not support decisions of the government to keep the wealth untapped for the possible future disbursement when the commodity cycle enters a down cycle. In such a climate the resources will most likely be overexploited, the excess revenue spent in the short-term and rents unevenly distributed and unfairly dissipated. In Latin America, to give an example, high income inequality stemming from uneven distribution of commodity windfalls has resulted in failure to accumulate social and human
capital, interfering with sustained growth and economic diversification (Leamer 1999). In such conditions, long-term wealth creation will not materialize and the country will continuously be subject to the danger of the boom-bust cycles. How would than a country break such a cycle, and how would a government gain the much needed credibility? Further questions linger: how to make countries turn the revenues into savings and productive investments? How not to give out energy subsidies but spend that amount on education and development of human and physical capital?

If governments are unable to improve internally, strict external measures can be placed to help them stir in the right direction. One example would be the Extractive Industries Transparency Initiative (EITI) announced in 2002 by, then, UK Prime Minister Tony Blair. The framework mandates participating governments and oil companies to disseminate detailed information on quantities extracted, revenues, signature bonuses, and royalties paid to the governments in commodity-abundant regions. Most of the time, host countries lack technological know-how and physical capital to extract the resource wealth, and need assistance from the big energy multinationals, foreign governments and international organizations such as the IFC. The EITI’s goal is to target the lack of accountability and transparency in exploration and sales activities so the development of a given country’s resource base does not exacerbate poor governance and lead to corruption, conflict and poverty.

In light of government’s lack of credibility, other external measures have been successfully incorporated. For example, the World Bank has conditioned its financing of the Chad-
Cameroon oil pipeline that the money paid to the government is put into an escrow account and its destination scrutinized by an oversight committee. The agreement also stipulated that Chad would spend 72% of its oil export earnings on poverty reduction such as health, education and infrastructure building, and put aside 10% in a “future generations fund.” The energy multinational involved in the project, ExxonMobile, was to deposit the oil revenues in an escrow account at Citibank and the government was to spend them subject to oversight by an independent committee. Similarly, the IMF has exerted pressure on governments to be more transparent about the uses of their resource windfalls so to discourage the resource royalties from being appropriated by the ruling elite for its own benefit. In countries with a history of violent power struggles, such initiatives aim at lessening the incentives for potential challengers to stage a coup d’etat by diminishing the pay-offs of those in power.

Countries with poor institutions would benefit from establishing a mechanism akin to the Chilean expert panels. The details governing the workings of the panels should be formalized into law and the panel’s members given legal independence. The members should be further protected by laws shielding them from arbitrary firings (similar to the laws protecting heads of independent central banks). Such an arrangement should enforce the separation of decision-making powers between the members of the panels and politicians. The former would determine the total amount of spending while the latter would determine the allocation of resources. Finally, based on my research of the resource curse the quality of regulation, such as the predictability of changes of domestic laws, as

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10 Sadly, once the money started rolling in, the government of Chad reneged on the agreement.
well as anticorruption policies, such as accountability and transparency in the public sector, are important factors for effective natural resource management and growth.

**Case of Botswana – Good Governance**

Botswana, until 1966 a British colony, boasts currently one of Africa’s most dynamic economies. The country’s rich mineral deposits, particularly diamonds, have historically been the main drivers of economic expansion. In 2002, Botswana exported $2 billion dollars’ worth of diamonds, nickel, gold, and other natural resources. With diamond mining alone accounting for nearly 30% of GDP, close to 80% of export earnings and a half of government’s revenues, how has this small country in one of the most improvised and violent continents been able to escape the natural resource curse? Governance alone, it seems, determines the extent to which growth effects of the commodity wealth can materialize. Botswana’s high quality institutions, particularly in the private property area, have stemmed from the limited British colonialism, strong political leadership since independence, and the country’s elite’s motivation to support the strong institutional make-up of the country. The country has succeeded in developing a solid institutional structure – something that the majority of resource based economies failed to do (Acemoglu, Johnson, and Robinson 2002).

Good government policies and a sound long-term development plan have served Botswana well in driving the remarkable economic performance. The country has been able to avoid many of the effects of the resource curse, and managed to redirect the resource windfalls
into investments in healthcare and education. Effective anticorruption laws and high level of public engagement have also placed government officials under close scrutiny and forced them to be more transparent about how the country’s natural resources wealth is spent and distributed. The country’s main diamond company, Debswana, is owned equally by the government of Botswana as well as the De Beers Group, an international family of companies dominating the diamonds business. Debswana’s involvement in the country is not limited to the mineral exploration. The company invests in the local communities by building hospitals, schools, and recreational facilities for employees and local residents. Because virtually every aspect of the diamond production (mining, cutting, polishing, manufacturing and trade) is done from within Botswana, the country retains most of the revenues coming from the diamonds business. Other diamond-rich countries derive wealth purely from rough diamonds exports; the total revenues are therefore much smaller.

Iimi (2006) credits four aspects of governance for the successful natural resource management in Botswana. First, voice and accountability measured by the political process, civil liberties, and political rights. Those in authority for resource extraction, as well as the process by which they are selected and replaced, are scrutinized by the public. Iimi states that “Botswana has done particularly well on this aspect of governance; international observers praised as free and fair the 2004 national election, the first conducted under the Southern African Development Community (SADC) guidelines for democratic elections.” (Iimi 2002). The second aspect of governance deals with government effectiveness measured by the quality of public services and the competence of civil servants. Botswana scores high on this front. The government officials are
entrusted with and held accountable for implementing good resource management practices. Botswana follows a self-disciplinary rule, the Sustainable Budget Index, according to which resource revenues are to finance development expenditure and continuous spending on health and education. This rule has been broadly followed for decades. Additionally, there is a government asset fund, the Pula Fund, where financial assets are invested only on a long-term basis in a transparent and accountable manner.

Botswana shines away from market unfriendly practices such as price controls and excessive regulatory burden. The country’s officials place much value in developing a long-term working relationship with the private sector. The diamond-mining leases are held for 25 years and contracts related to natural resources extended for more than 10 years. Finally, Botswana has strong anticorruption policies ensuring fair and transparent distribution of the resource revenues. Established in 1994, an independent anticorruption authority called the Directorate of Corruption and Economic Crime, has the authority to report corruption cases directly to the president. The constitution of Botswana establishes the attorney general independent of the government and politicians. Due to the sound anticorruption framework corruption in the public sector has not been a serious problem in Botswana.

Natural Resources Management Framework

I have synthesized the concepts discussed in details above into a list of eight intertwined ideas that could act as a framework for commodity producing countries to respond to the
challenges of the resource curse and increase chances of a long-term economic success.

They are as follows

1. Pick an exchange rate regime according to the country’s economic size and make-up and the diversity of trading partners

2. Domestic currency appreciation is acceptable and controllable through capital inflow controls and increase in foreign exchange reserves;

3. Either shift comparative advantage to the exploitation of the commodities or diversify and support non-commodity sectors;

4. Set budget targets;

5. Emulate Chile in setting up a mechanism for countercyclical spending dynamics, and give an independent panels of experts rather than politicians power to determine the budget targets;

6. Emulate Norway in setting up a sovereign wealth fund or a commodity fund and follow Norway’s investment strategy;

7. Emulate Botswana in setting a framework for anticorruption measures and standards of governance;

8. Set up long-term policies stipulating commodity revenues to be invested in education and development of the human capital.
Conclusion

Oil creates the illusion, of a completely changed life, life without work, life for free...The concept of oil expressed perfectly the eternal human dream of wealth achieved through lucky accident...In this sense oil is a fairy tale, and like every fairy tale a bit of a lie.
- Ryszard Kapuscinski

The resource curse is multidimensional in nature. It is not solely an economic distortion of the Dutch Disease, which stipulates over-reliance on a single commodity exports and the damaging effects it has on the terms of trades and crowding out of non-resource sectors. Nor is it simply a matter of inadequate institutional framework, corrupting rents or higher levels of political instability resulting from potential high pay-offs to the winner. Each of these considerations is important, and each needs to be taken into consideration when devising a game plan to avoid the many pitfalls that the resource endowments entail.

Through my inquiry I have become convinced that the mere discovery of resource wealth is not a problem in and of itself. Rather, it is the failure of governments or ruling elites to mitigate the dangers that accompany such gifts of nature. Responsible policies can turn abundant natural resource riches into an unmitigated blessing. Yet, responsible policies, as few resource-rich countries show, are usual byproducts of democratic governments, transparent institutions and high civil involvement. But such preconditions in places where none of them exist demand sacrifices to build the defenses against the curse from those in power as well as from those governed. In the majority of resource-rich countries, it seems that this is simply too much to ask.
Bibliography


