

# **DEVELOPMENT CHALLENGES OF RESOURCE-RICH COUNTRIES: THE CASE OF OIL EXPORTERS**

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## **Abstract:**

This paper discusses some of the challenges that confront oil-rich developing countries in their development path. These challenges include Dutch disease-related phenomena, macroeconomic volatility, weak governance, and constraints to institutional capacity development, which although are not inherent to these countries are likely to be accentuated in the presence of abundant natural resources. The paper also discusses options available to policymakers on how to best manage oil revenues and avoid negative externalities associated with the Paradox of Plenty. The paper concludes by stressing that one of the surest ways governments in oil-rich developing countries have at their disposal to avoid the so-called curse of oil is through the insulation of fiscal policy from the volatility associated with the price of oil. Moreover, the paper calls attention to the fact that efforts to promote improvements in governance and institutions are equally important, but will not go far if natural resource revenues, and in particular oil revenues, are not used to foster better development outcomes. This suggests that, having formulated economic policy responses, it is essential to work out political trade-offs in order to get the policies to work as effectively as possible within a specific country.

**Keywords:** Resource Booms; Exhaustible Resources and Economic Development; Government Policy; Fiscal Policy

**JEL Classification:** O13; Q32; Q33; Q38

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## 1. Introduction

Many of the so-called resource-rich developing countries are now experiencing massive windfall gains due to rising international commodity prices. These countries would like to use their natural wealth to finance their development projects and pave the way to a sustainable path of economic broad-based growth. After all, natural resources have played an integral role in the performance of many successfully industrialized economies, such as Australia, Sweden, Finland, Canada, and the United States, which have based their development strategies on natural resources and continue to be net resource exporters today. The example of these industrialized economies and their successful development stories can lead many to believe that natural resource dependence is in fact a blessing. In fact, Lederman and Maloney (2007) argue that natural resources are actually riches that, when combined to human ingenuity to create human capital and knowledge innovation, do contribute positively to harness economic growth. However, a significant amount of research suggests that resource-rich countries perform poorly when compared to other economies and that the former tend to be cursed by their natural wealth (Stevens, 2003). Most notably Sachs and Warner (1995, 2001) find that resource intensive exporters actually grow more slowly than other countries.

The case of oil-exporting countries is an interesting one given the recent increases in the international prices of crude oil, the implied windfall gains that these countries have been accumulating, and the potential macroeconomic volatility that reliance on oil can introduce in the economy. In addition, many of the oil-exporting countries are poor in terms of social indicators and welfare. Furthermore, several empirical studies have found that oil-abundant economies tend to perform poorly in three areas. First, they present lower long-term growth rates when compared to non-oil economies (Auty, 2001). Second, their output as well as government revenue experience higher volatility due to fluctuating commodity prices combined with undiversified revenue and export bases (Hausmann and Rigobon, 2003; Devlin and Lewin, 2004). Third, in spite of their resource wealth, a large number of them are classified as severely indebted countries with high levels of external debt, making them vulnerable to exchange rate fluctuations induced by volatile resource prices (Manzano and Rigobon, 2007).<sup>1</sup>

This paper discusses some of the challenges that confront oil-rich developing countries in their development path. These challenges include Dutch disease-related phenomena, macroeconomic volatility, weak governance, and constraints to institutional capacity development, which although are not inherent are likely to be accentuated in the presence of abundant natural resource wealthy. The paper also discusses options available to policymakers on how to best manage oil revenues and avoid negative externalities associated with the Paradox of Plenty. The methodology of analysis is descriptive and “heuristic”, drawing on the experience of several oil-producing developing countries and on earlier analyses. The structure of the paper is as follows. After this Introduction, Section 2 explains the main contributors to the Paradox of Plenty. Section 3 discusses the

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<sup>1</sup> Manzano and Rigobon (2007) attribute the resource curse to a ‘debt overhang’ which occurred in the 1970s when oil-rich countries used commodities as collateral to take on excessive debt when prices were high. A collapse in oil prices in the 1980s left these countries with no ability to service their debts.

policy options that are available to policymakers to properly manage rapidly rising oil revenue windfalls. Section 4 makes the point that an institutional framework is necessary for the management of rapidly accumulating oil revenues and briefly discusses the case of oil stabilization funds. Section 5 concludes by stressing that one of the surest ways governments in oil-rich developing countries have at their disposal to avoid the curse of oil is through the insulation of fiscal policy from the volatility associated with the price of oil. Moreover, the paper calls attention to the fact that efforts to promote improvements in governance and institutions are equally important, but will not go far if natural resource revenues, and in particular oil revenues, are not used to foster better development outcomes. This suggests that, having formulated economic policy responses, it is essential to work out political trade-offs in order to get the policies to work as effectively as possible within a specific country.

## **2. The Paradox of Plenty**

A large number of oil producing countries are now deriving benefits out of the current international scenario of high oil prices. However, many of these countries remain very poor and display some of the lowest social indicators in the world. The idea of the Paradox of Plenty is attributed to Karl (1997) who studied the cases of Venezuela, Nigeria, Iran, Algeria, and Indonesia in the midst of the two massive oil booms of the 1970s. The argument is that, during the oil boom, oil-rich countries created awkward centralized bureaucracies, geared solely towards generating more oil profits. This allowed established and protected interest groups, such as foreign investors and state officials, to acquire additional influence and fight to retain it, creating enormous barriers to change. In this context, policymakers put aside any plans for nurturing long-term, sustainable growth, and when oil prices began their drastic plunge, the results were economic failure and political crisis, including bottlenecks and breakdowns in production, capital flight, double-digit inflation and decline in the efficiency of their public enterprises.

The Paradox of Plenty is a broad concept and can affect any country. However, African countries seem to be more vulnerable than others because of a number of reasons that are outside of the scope of this paper to discuss, including low initial conditions, colonial legacies, and limited integration to the world economy. Notwithstanding, Sub-Saharan African countries provide a number of examples which are relevant for the discussion that follows. Table 1, for instance, shows the degree of oil dependence in oil producing countries in Africa, while Table 2 shows that out of 32 oil-exporting countries worldwide, 6 of the 9 countries with the lowest human development indicators are in Sub-Saharan Africa.

Four principal contributors to the Paradox of Plenty have been identified. Two of them are technical – the so-called “Dutch disease”, and oil revenue volatility. Two are more political in nature – weak governance and the lack of and/or failure to develop the institutional capacity required to face the challenges of resource wealth. We discuss the four of them next.

### Oil Dependence in Oil Producing Countries in Africa - 2003.

Country	Oil and Gas as % of GDP	Oil and Gas as % of World Oil and Gas Revenues
Nigeria	46.1	4.3
Algeria	36.2	3.9
Libya	47.6	1.9
Angola	65.3	1.4
Egypt	3.9	0.5
Equatorial Guinea	96.6	0.5
Congo Republic	59.1	0.3
Sudan	12.3	0.3
Gabon	42.6	0.2
Cameroon	7.6	0.1
Cote d'Ivoire	4.9	0.1
Congo Dem. Rep.	4.4	n.a.
Chad	8.3	n.a.

Source: The World Bank.

**Table 2: Human Development Indices for Oil Producing Countries**

	Human Development Index - HDI		Human Development Index - HDI
<b>Norway</b>	0.963	<b>Turkmenistan</b>	0.738
<b>Brunei Darussalam</b>	0.866	<b>Iran, Islam. Rep.</b>	0.736
<b>Qatar</b>	0.849	<b>Azerbaijan</b>	0.729
<b>United Arab Emirates</b>	0.849	<b>Algeria</b>	0.722
<b>Bahrain</b>	0.846	<b>Indonesia</b>	0.697
<b>Kuwait</b>	0.844	<b>Egypt</b>	0.659
<b>Mexico</b>	0.814	<b>Equatorial Guinea</b>	0.655
<b>Trinidad and Tobago</b>	0.801	<b>Gabon</b>	0.635
<b>Libyan Arab Jamahiriya</b>	0.799	<b>Sudan</b>	0.512
<b>Malaysia</b>	0.796	<b>Cameroon</b>	0.497
<b>Russian Federation</b>	0.795	<b>Nigeria</b>	0.453
<b>Oman</b>	0.781	<b>Angola</b>	0.445
<b>Saudi Arabia</b>	0.772	<b>Congo, Democ. Rep.</b>	0.385
<b>Venezuela</b>	0.772	<b>Chad</b>	0.341
<b>Ukraine</b>	0.766	<b>Sub-Saharan Africa</b>	0.515
<b>Kazakhstan</b>	0.761		

Source: 2003 Human Development Report, United Nations

## 2.1 Dutch Disease

This “disease” is named for the problems experienced by the Netherlands following the discovery and initial exploitation of vast domestic reserves of natural gas. Large scale revenue inflows from oil exports put upward pressure on the exchange rate.

They also lead to a significant expansion in domestic demand relative to the country's ability to supply that demand. The demand expansion comes from the budget and public sector and, where oil revenues get into the domestic banking sector, from credit expansion. The demand expansion in turn increases the price of non-traded goods, causing a further appreciation of the real exchange rate. The combination of these two impacts results in an often dramatic decline in the competitiveness of non-oil exports, a shift in domestic resources away from those sectors to the non-traded goods sectors, and erosion of diversity and balance in the domestic economy. Evidence of Dutch disease has been identified in almost all countries where petroleum exports play a major economic role.<sup>2</sup>

Much of the literature divides the effect into a 'resource movement effect', a 'spending' effect and an 'exchange rate' effect.<sup>3</sup> The resource movement effect is observed when the lucrative natural resource sector drains resources (talent, capital, public spending, etc) from other sectors, tradable or nontradable, which contributes to depress their growth. The resource movement has the effect of 'crowding out' other sectors as the dominant oil, gas or mining industry makes first claim on scarce resources (local capital, skills, infrastructure, and suppliers). This effect is particularly dramatic in smaller countries when the size of investment projects is large or where there are strong sub-national, regional dimensions to an economy and projects are focused in one region. In particular, the concept is relevant to the transition economies, where the process of transition has effectively destroyed the old productive base and a new and private tradable sector, e.g. manufacturing, is struggling to emerge.

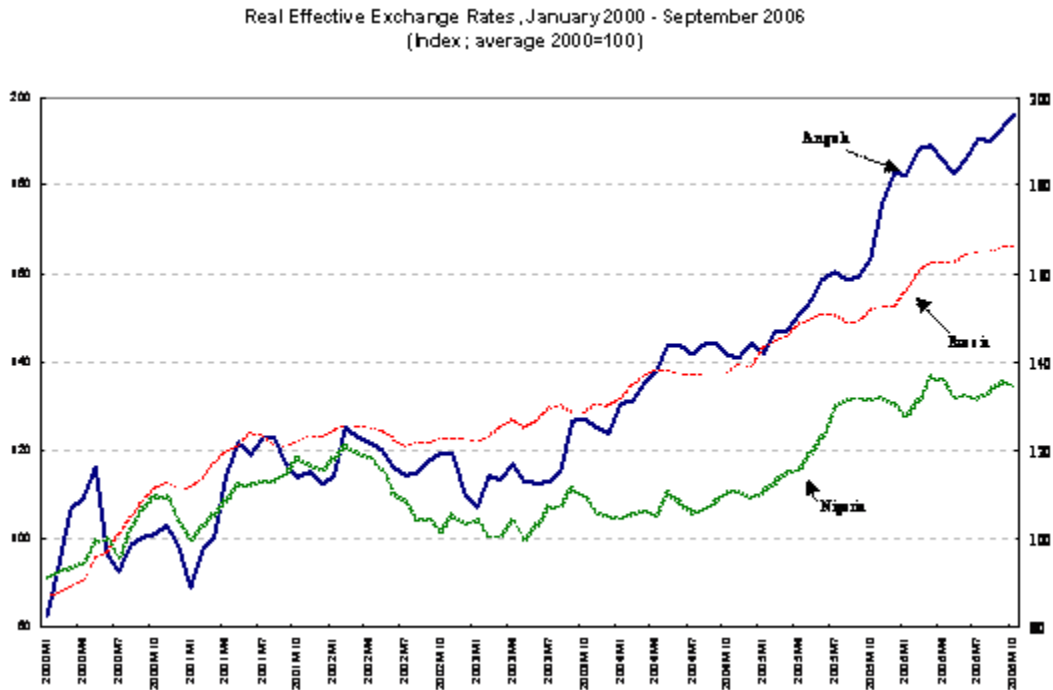
The 'spending effect' takes place when the 'windfall' of revenues in the natural resource creates a rising demand (and thus inflation) in other sectors in the economy, both tradable and nontradable. Since the tradable sectors have prices determined by international markets, the country soon becomes internationally uncompetitive in that sector. This is compounded by the 'exchange rate effect', because a large inflow of foreign exchange from oil and natural gas exports creates demand for an oil exporting country's domestic currency which in turn causes an appreciation of its real exchange rate. As a result, tradable goods become more expensive and less competitive both domestically and on external markets. At the same time, imports become more affordable, thus squeezing domestically produced goods out of the market. This leads to a withering of the agricultural, manufacturing, and other sectors of the economy, a loss of jobs in these sectors, and development of an even greater economic dependence on the oil and natural gas industry. Figure 1 below shows the recent appreciation of the real exchange rate in three major oil producing countries, Russia, Nigeria and Angola.

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<sup>2</sup> Mexico is often cited as a case in point. As noted by Auty (1994), by 1982 virtually the entire non-oil economy became non-tradable and in need of total protection or subsidies. Venezuela is another commonly held example. Sachs and Werner (1995) suggest that Venezuelan growth was 0.77% lower due to natural resource intensity. This implies that at the end of the 20-year period in 1990, Venezuelan per-capita GDP was about 14% lower than it would have been if Venezuelan had no natural resources.

<sup>3</sup> See Corden (1984), van Wijnberger (1984), and Nery and van Wijnberger (2000) for a formal treatment of Dutch disease.

**Figure 1: Evolution of Real Exchange Rates in Oil Countries**

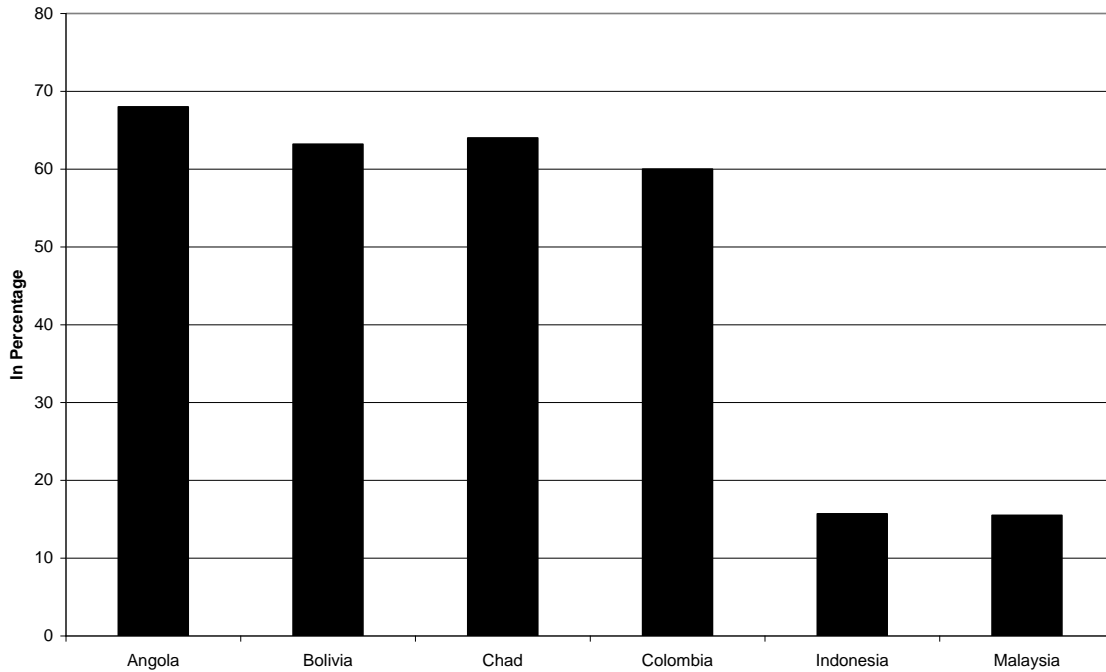


Furthermore, Auty (1994) has noted that resource rich countries displaying the symptoms of Dutch disease tend to have deficient manufacturing industries because governments tend to concentrate on developing capital-intensive industries related to resource extraction. Unlike manufacturing, these “enclaves” have limited linkages with the rest of the economy, do not generate much employment for the domestic workforce, and are largely reliant on imported inputs (Auty and Kiiski, 2001). The majority of the population is therefore unable to benefit from the oil wealth, and this leads to high levels of inequality and poverty. For example, Angola, Chad, Colombia, and Bolivia – all oil-producers with an undiversified economy– are ranked amongst the most impoverished countries according to the headcount ratio (i.e., the percentage of the population living below the national poverty line). In these countries, some 64 percent or more of the population is below the poverty line. But other oil-rich countries which have had success in diversifying their economies rank better in terms of poverty rates, such as Indonesia and Malaysia (see Figure 2).<sup>4</sup>

<sup>4</sup> See De Silva (1994) for a discussion on how Indonesia used the windfall years to its advantage and managed to promote the diversification of its economy and reduce poverty rates.

**Figure 2**

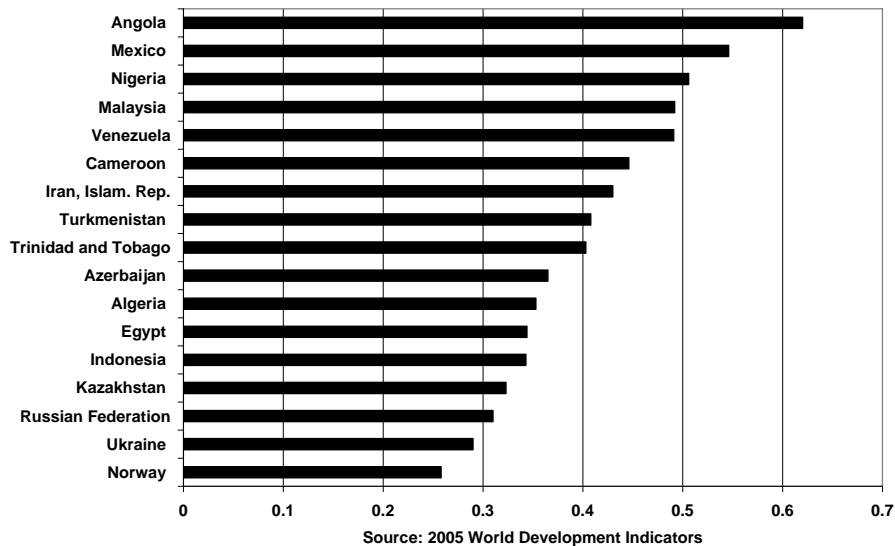
**Poverty Headcount Rates for Selected Oil-Producing Countries**



Source: The World Bank, 2006 World Development Report

A number of studies have also shown that resource-abundance frequently leads to increased income inequality (Stevens, 2003; Gylfason and Zoega, 2003; Auty, 2004). Two reasons why this might occur are as follows. Firstly, oil, gas and mining industries are often characterized by their ‘enclave’ nature, with few forward and backward linkages into the economy. During production, such industries employ only a relatively small number of highly-skilled, well-paid workers, and generally import the majority of inputs. Second, public expenditure may exacerbate inequality. This can result where expenditure is concentrated in the formal sector in towns and cities, skewing distribution against rural households, or where it is orientated towards the interests of the wealthier classes, for example favoring the construction of a university over investment in rural roads. Figure 2 shows a sample of Gini coefficients for several oil producing countries and illustrates the severity of income concentration in most of them.

Figure 3: Gini Coefficients for Oil Producing Countries



## 2.2 Oil Revenue Volatility

The oil industry is notorious for its often violently cyclical behavior. This may be due to the uncertain pace of oil discovery and development. At a global level, however, the cyclical character of the industry is more often attributable to the volatility of oil prices. Volatility makes economic management difficult in itself, especially as cyclical swings are typically not predictable. Difficulties are compounded by the positive correlation commonly observed between revenues received and expenditures. Volatility in revenues, associated with volatility in aggregate expenditure, public and private, creates real exchange rate volatility. This volatility will make profits in the tradable sector very unstable and risky, creating further disincentives towards investment in these sectors.

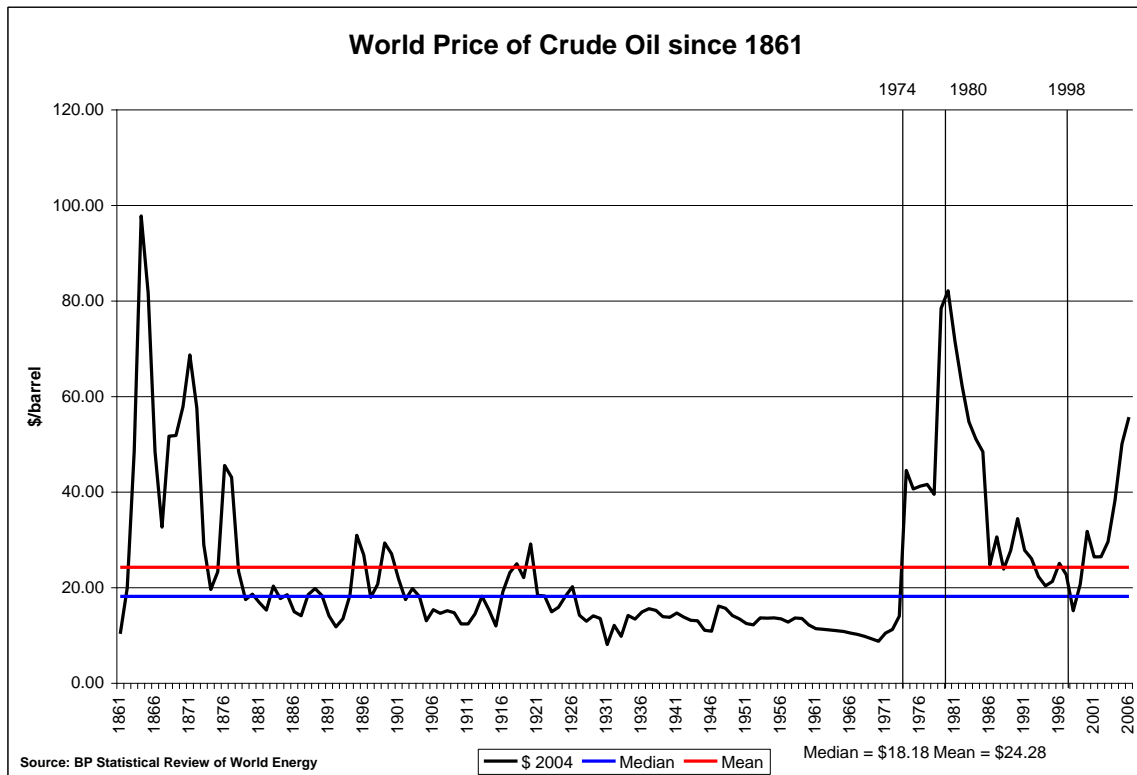
Recent volatility in the international price of oil is exemplified in Figure 4. For the first time since the 1979-80 OPEC-cartel inspired oil price jump, crude prices started rising in 2000 and are now significantly above historical averages.<sup>5</sup> Oil prices skyrocketed from around \$24/barrel in 2001 to around \$80/barrel in 2006 (in current prices). In real terms, prices today are significantly higher than the long-run mean and median prices of around \$24 and \$18 in 2004 US\$ respectively. Commodity experts expect this situation to persist for 5-7 years. The rise in oil prices has been brought about both by surging demand on one hand and by relatively hard supply side constraints on the other. In 2004, the global economy grew by about 3.3%, the highest growth rate since

<sup>5</sup> The prices in Figure 4 are as follows: 1861 – 1944: US average; 1945 – 1985: Arabian Light posted at Ras Tanura; 1986-2006: Brent spot. Source: *BP Statistical Review of World Energy 2004*. The formation of OPEC led to large oil price jumps in 1973-74 and 1979-80. There was a brief blip above trend after August 1990, when Iraq invaded Kuwait.



1976. Much of the growth in oil demand has been concentrated in emerging Asia, particularly China. Sustained economic expansion by both China and India is expected to continue into the foreseeable future. On the supply side, spare capacity has been extremely limited largely due to the low level of investment by oil companies during the 1990s, when average real oil prices were low at around \$23 in 2004 US dollars. Rising exploration costs also discouraged the undertaking of major oil projects.

**Figure 4: Oil Prices in 1861-2006 in 2004 US\$**



Variability in oil prices has been very poorly predicted, and it has been difficult to separate out temporary fluctuations from trends. In fact, statistical analysis is inconclusive about whether oil prices are mean-reverting or characterized by permanent shocks; much of the results are sensitive to the period under consideration, and the extent to which one allows for structural breaks, particularly in the 1970s (Barnett and Vivanco, 2003). Moreover, the industry is characterized by long lags in the response of supply to demand. Any investment requires a long gestation period before it translates into higher output. This means that changes in output capacity are sluggish, and it can take several years for market equilibrium to be restored. Any mean-reversion is therefore slow to occur, making it difficult to predict what proportion of any change in prices is transitory or permanent.

If one considers that past experience is a guide, shocks to the price of oil will continue to be poorly foreseen and producing countries will be vulnerable to boom-bust cycles. Instability is very costly, as economies and budgets tend to adjust asymmetrically.

On the upside, growth increases a little; on the downside, output contracts. Over a series of cycles, countries move towards stagflation (Eiffert et al., 2002). Rapid growth in public spending, which usually follows oil price increases,<sup>6</sup> reduces spending quality and introduces future obligations, including recurrent cost commitments, which are often not sustainable in the long run. Efficiency often suffers from a high proportion of unfinished projects as well as from capital investments that cannot be effectively used because of shortages of recurrent resources.

Furthermore, the volatility of oil prices leads to corresponding volatility in the fiscal cash flow of producing countries. The dependence of fiscal revenue on the oil sector renders public finances vulnerable to a volatile external variable that is, for the most part, largely beyond the control of policymakers. Large and unpredictable changes in expenditure, and the non-oil fiscal deficit, can entail important macroeconomic costs. They include the reallocation of resources to accommodate changes in demand and relative prices, real exchange rate volatility, and increased risks faced by investors in the non-oil sector. Sharp fluctuations in government spending make it difficult for the private sector to make long-term investment plans and decisions, with adverse effects on private investment and the growth of the non-oil economy (Hausmann et al., 1993).

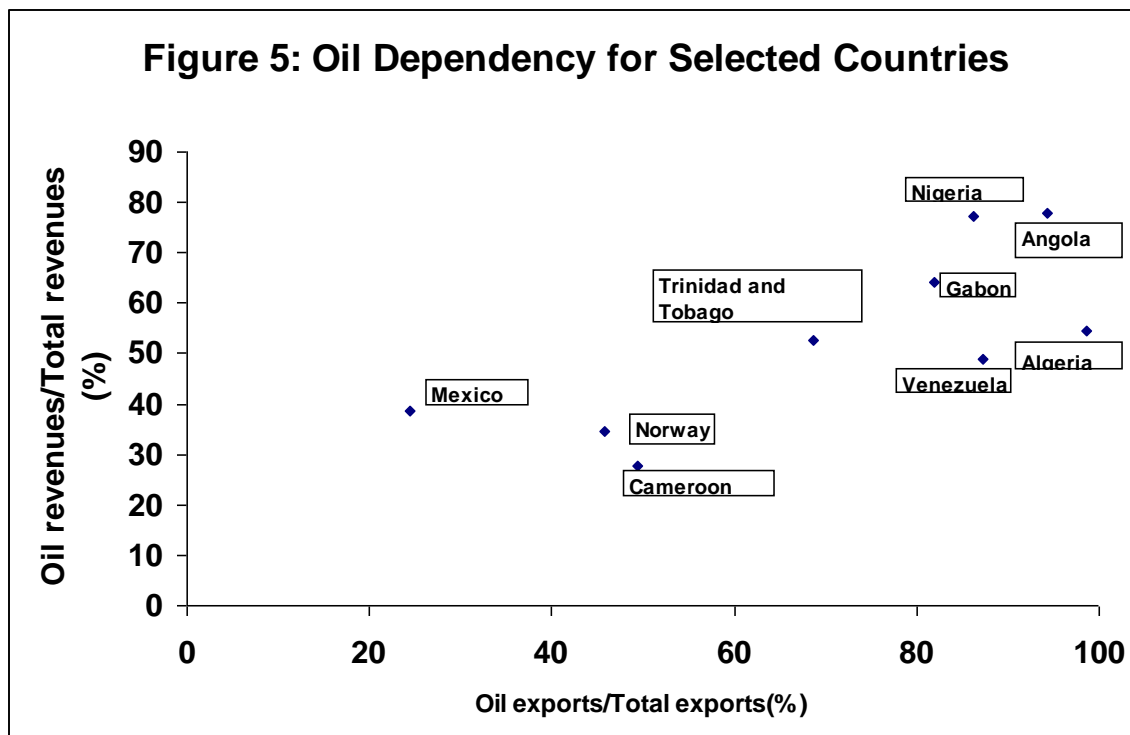
Oil shocks can affect the level and volatility of the real effective exchange rate through several channels. While disposable income and wealth effects are prominent factors, a key transmission channel of external volatility to the real effective exchange rate is pro-cyclical government spending on non-tradables. In this case, the variability of the oil revenues can carry over to the real effective exchange rate and lead governments to rely more heavily on import tariffs and other trade distorting taxes for revenue generation. The volatility of the real exchange rate, in turn, has been shown to be damaging to the non-oil sector and capital formation (Sérven and Solimano, 1993).

In addition, when governments are unable to generate fiscal surpluses during periods of rising oil prices that would permit the budget to withstand adverse oil shocks without falling into deficits that lead to sustainability concerns, fiscal policy tends to transmit oil volatility to the rest of the economy. Lack of financing during oil price downturns, on the other hand, eventually forces governments to undertake sharp and disruptive fiscal contractions, at a time when the economy can least afford them. Countries where external financing is limited, and available domestic financing fluctuates with shifts in sentiment toward the domestic currency, are particularly vulnerable (Davis et al., 2003), as are countries with undiversified economies and heavy dependency of government revenues on oil revenues (see Figure 5).

Table 3 lists some of the oil-rich countries (shaded in the table) amongst the severely indebted countries which have the highest levels of public debt. Table 4 lists the average GDP per capita growth rate over the period 1970-2003, and provides volatility measures of per capita GDP growth, the terms of trade, and inflation. Oil exporters present lower growth and higher volatility as a whole on all measures.

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<sup>6</sup> Katz et al. (2004) calculate correlation coefficients between the price of oil and total government spending of roughly 0.7 for a number of oil producing countries over the period 1971-2001.



Note: Data refers to average of 2005 and 2006 or latest available.

Source: The Economist Intelligence Unit and WEO

**Table 3: Severely Indebted Countries**

Rank	Country	External Public Debt in 1999 (\$US bil.)
1	Brazil	92.38
2	Argentina	84.55
3	Indonesia	73.66
4	Turkey	50.76
5	Nigeria	22.36
6	Peru	19.50
7	Syrian Arab Republic	16.14
8	Ecuador	13.56
9	Cote d'Ivoire	9.70
10	Sudan	8.85
11	Angola	8.72
12	Congo, Dem. Rep.	8.26
13	Jordan	6.71
14	Serbia and Montenegro	6.23
15	Nicaragua	5.78

Source: The World Bank.

**Table 4: Net Oil-exporting developing countries 1970-2003**

Country	Average annual per capita growth (%)	Standard deviation of GDP p.c. growth	Terms of trade (TOT) volatility	CPI Volatility (s.d. of inflation rate)
Algeria	0.96	7.67	25.64	8.41
Argentina	0.24	5.87	8.07	643.56
Azerbaijan		13.67	24.16	590.86
Bolivia	0.27	2.88	10.47	2015.27
Cameroon	1.06	4.62	20.93	7.42
Chad	-0.20	6.37	17.51	11.98
Colombia	1.61	6.45	9.54	7.36
Congo, Dem. Rep.	-3.94	2.29	20.99	4159.38
Congo, Rep.	0.90	5.50	23.75	27.48
Cote d'Ivoire	-1.03	3.63	18.94	6.99
Ecuador	1.18	2.90	14.95	21.17
Egypt, Arab Rep.	3.01	11.34	10.78	6.45
Gabon	0.67	3.86	22.66	9.88
Indonesia	4.01	7.32	14.78	11.02
Iran, Islamic Rep.		21.28	23.44	9.52
Kazakhstan		9.72	14.00	586.09
Kuwait	-2.70	9.97		5.88
Libya		3.87		7.59
Malaysia	3.99	6.62	7.34	3.28
Nigeria	0.11	7.11	31.04	18.04
Russian Federation		8.43	14.72	258.80
Saudi Arabia	0.49	5.86	30.93	8.98
Sudan	1.47	7.56	12.81	38.41
Syrian Arab Republic	2.24	8.17	11.82	12.46
Trinidad and Tobago	1.49	12.94	17.88	4.96
Turkmenistan		4.98	0.00	
Uzbekistan		4.73	9.47	
Venezuela, RB	-1.47	2.15	19.56	23.32
Vietnam		4.29	12.30	2.96
Yemen, Rep.		4.81	0.66	17.82
Developing Countries				
Net Oil Exporters	0.65	7.18	16.04	296.49
Others	1.32	5.80	8.96	103.19

Source: World Bank Central Databases

### 2.3 Weak Governance

Good governance is widely recognized as critical to successfully addressing the Paradox of Plenty. Good governance is variously defined, but it is clearly multi-dimensional and should include, among other things: clear and stable laws and regulations; rule of law; a high level of competence in government; fiscal, budgetary and monetary discipline; public-private sector balance in the economy; an open dialogue

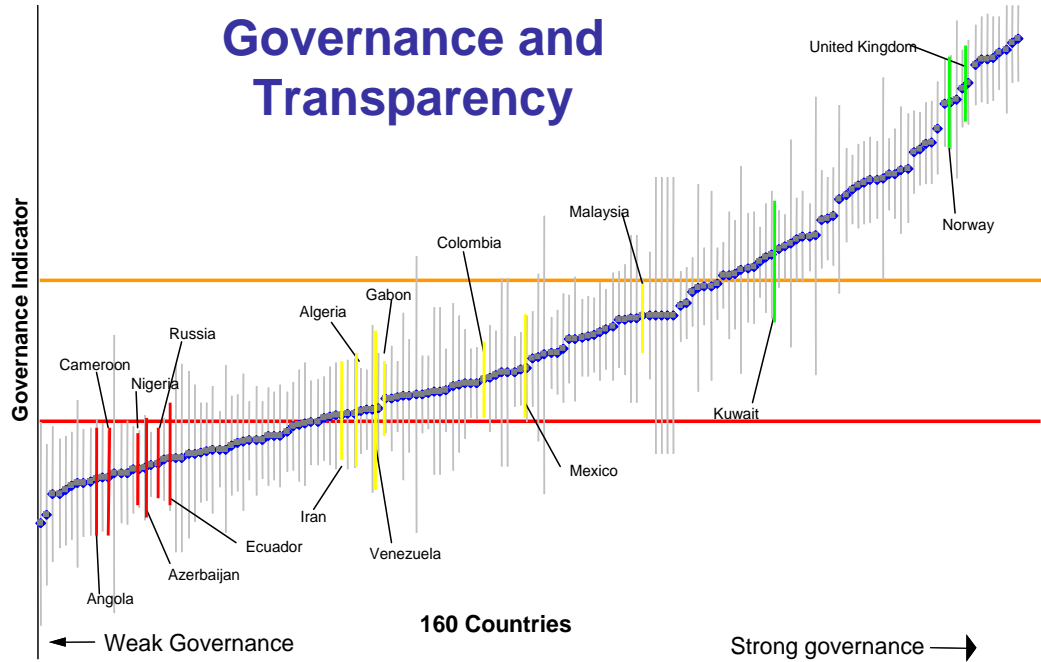
between government and civil society; and a high degree of transparency. Unfortunately, oil-rich developing countries do not score well against these governance indicators (see Figure 6). Weak governance in many of these countries probably pre-dated oil development and made it difficult to manage oil wealth from the outset. However, a range of arguments and evidence exists which suggests that the arrival of significant oil wealth can itself undermine governance creating a vicious cycle.

Natural resource rent may be regarded as a gift from Nature, because in theory it can be taxed away by governments without impairing incentives to produce. A high ratio of natural resource rent/GDP can facilitate economic development if the rent is used to boost levels of investment and the foreign exchange from resource exports is deployed to enhance the capacity to import the capital goods required to build a modern economy. Certainly during the first golden age of economic growth from 1870-1913 resource-rich economies like Argentina, Australia, Canada and the United States thrived (Lewis, 1978). Similarly, until the 1960s the median per capita income of resource-abundant developing countries was 50% higher than that of the resource-poor countries (Auty, 2001). Figure 7 shows the slower growth in real GDP per capita for oil-rich countries as compared to other countries over the period 1970-2003. Non-OECD oil-rich countries are largely underperformed by their peers, and as a group stagnate from the 1980s to the mid-1990s, which ironically coincides with the 15 years following the two large oil shocks of 1973-74 and 1979-80.

The inferior performance of resource-rich countries can be attributed to two characteristics commonly associated with resource abundance. First, competition for the rent tends to engender “extractive” political states. This is because rent extraction is more attractive to governments than wealth creation since rent extraction confers immediate (often personal) economic and political gains, whereas wealth creation defers gains and by expanding competition it also shrinks the scope for rent-seeking activity (Auty, 2001). Second, the deployment of rent by an “extractive” government is motivated by the desire of an incumbent government to stay in power and this implies incurring in political trade-offs that are necessary in order to keep other powerful interest groups aligned with and supportive of the current regime. While incumbent governments in resource-rich economies may very well have a developmental model that they believe will generate better economic and social welfare outcomes, the trade-offs that they are obliged to make and the exogenous economic consequences associated with the extraction and trade of the natural resource combined will introduce distortions to the structure of the economy and in the quality of governance institutions of the country.

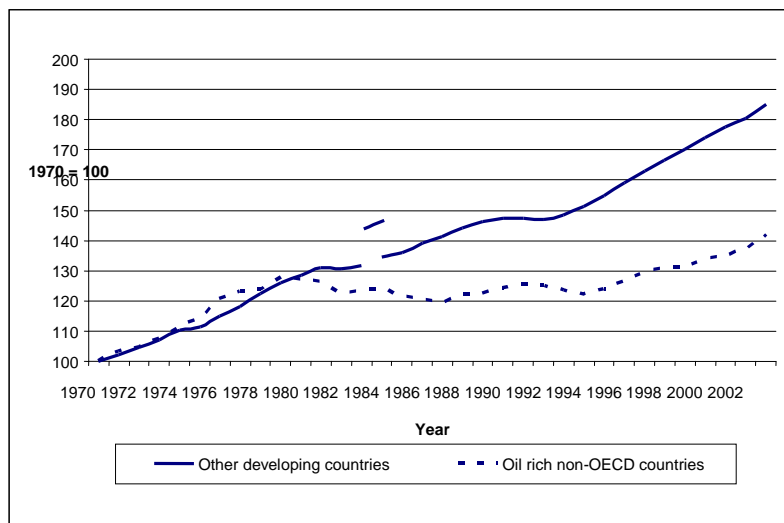
This renders resource abundant countries extremely vulnerable to growth collapses, from which recovery is protracted, and also to abrupt political change. The vulnerability to growth collapses arises because reliance on natural resource revenues aborts competitive diversification of the economy (Auty and Gelb, 2001) and brings with it volatility associated with the international price of the natural resource, which is not controlled by the individual producing state. The vulnerability to abrupt political change can be attributed to the political trade-offs that have to be made to pacify dissent and that may lead to a weakening of societal checks and balances and, consequently, to repressive political states. The simultaneity of weak governance and political competition for the rents may lead to the occurrence of conflict.

Figure 6



Source for data: <http://www.worldbank.org/wbi/governance/govdata2001.htm>. This chart shows estimates of control of corruption for 160 countries during 2000/01, with selected countries indicated for illustrative purposes. The vertical bars show the likely range of Governance indicators, and the midpoints of these bars show the most likely value for each country. The length of these ranges varies with the amount of information available for each country. Colors are assigned according to the following criteria: Red, less than 30% of overall countries rank worse; Yellow, between 30% and 70%; Green, over 70%. Countries' relative positions in no way reflect the official views of the World Bank or the International Monetary Fund.

Figure 7: Comparative GDP Growth for Oil and Non-Oil Countries



Source: World Bank. Oil-rich countries defined as net oil-exporting countries.

These “extractive” political states may also become plagued with corruption, and corruption has been found to hamper economic growth (Mauro, 1995; Bardhan, 1997). Resource wealth may prevent the redistribution of political power towards the middle classes and thus prevent the adoption of growth-promoting policies. In this sense, natural resource wealth will have an adverse effect on institutions, since rentier effects allow governments to pacify dissent, avoid accountability and resist modernization. Those profiting from the natural resource sector may bribe politicians to provide specific semi-public goods that are captured by the elites. Where institutions are already weak, the legal system dysfunctions and transparency is low, rent seeking has a higher return and unfair take-overs, shady dealings, corruption, crime, and other illicit practices pay off. In equilibrium, profits fall and as a result the economy is worse off.

In addition, it could be argued that elements of the recent framework proposed by North et al. (2006) to explain why some countries became developed while many others never made the transition to an advanced state can be found in most of the oil-rich developing countries. Many of these countries are among those with very poor governance indicators (see Figure 6), including problems with property rights, freedom of the press, rule of the law, and restriction to civil liberties. North et al. (2006) argue that societies can be classified as ‘limited access orders’ when they are perceived to limit economic, political, and social access to generate economic rents and then use the rents to create credible commitments between elites to the existing social order. This allows these societies to create privileged access to valuable rights and activities that are enforced by the political and military elites with the state and enjoyed by elite members of the dominant coalition. The literature on natural resource abundance and conflict is very illustrative on this respect (see Bannon and Collier, 2003, for example).

On the other hand, North et al. (2006) classify societies as ‘open access orders’ when they rely both on economic and political competition. In this type of society, political competition strengthens economic competition and economic competition strengthens political competition. Open access in economics implies a vibrant set of organizations to react to constitutional violations. Open access in politics also helps police the government and sustain the basic institutions necessary to maintain competitive markets, such as secure property rights and the rule of the law. North et al. (2006), however, call attention to the fact that only eight countries have made the transition from a limited access order to an open access order since WWII.

#### **2.4 Limited Institutional Capacity**

Oil revenues often exceed an oil-rich country’s capacity to manage them effectively, or to ensure their efficient investment. The result is often macroeconomic mismanagement and waste on a major scale. In addition to straining, or even overwhelming, existing institutional capacity, oil wealth may actually erode incentives to invest in creating an effective civil service. Government decision makers may feel little need for a skilled administrative team to handle oil revenues when so much money appears to flow so easily from a very concentrated source. More insidiously, those benefiting most from oil may perceive an effective, efficient and watchful civil service as a threat to the benefits they enjoy. As suggested above, adequate institutional capacity is

really a component of good governance. It is commonly singled out for discussion, however, because of its special importance.

It is very common to notice that, in oil-producing developing countries, the lack of policy and administrative absorptive capacity in the public sector frequently leaves government departments and regulatory frameworks ill-prepared for the challenge of translating oil revenues into economic development. This in turn fuels inefficiencies in public sector management and can lead to excessive spending (e.g. on social expenditure, public infrastructure). The excessive spending engenders political pressures to sustain the high levels of recurrent expenditure, which, in some societies, carries with it security risks if levels cannot be maintained in the future (Bannon and Collier, 2003).

Furthermore, the concentration of capital expenditure during the development stage of oil, gas and mining projects, and subsequent large flows of revenues into government, provides ample opportunity for corruption and other manifestations of the political economy including 'leakage', clientelism, patronage, and 'raiding', by elites or bureaucracies (Stevens, 2003). These problems can be exacerbated by the use of 'off-budget' accounts. Such accounts are in general more prone to corruption because they fall outside the supervision of government auditors.

Political scientists have long argued that a *point-source* resource (such as oil or diamonds) is particularly problematic, since it is easily captured by the ruling elite, removing the incentive for the government to actively engage its citizenry (Busby et. al., 2002). This destroys both the capacity and the legitimacy of the state, exacerbating social divisions and even leading to direct conflict over the resource itself (see Figure 8). There is a growing amount of evidence that suggests that rents from natural resources, especially from point-source natural resources, increases the chances of civil conflicts and wars, especially in Sub-Saharan Africa through weakening of the state or financing of rebels, such as in the cases of Angola, Congo, and Sierra Leone (Olsson and Fors, 2004). According to Collier and Hoeffler (2004), the extent of primary commodity exports is the largest single influence on the risk of conflict and the effect is non-linear. These authors also argue, for instance, that a country with no natural resources has a probability of civil conflict of 0.5 percent, but that a country with a share of natural resources in GDP of 25 percent has a probability of civil conflict of 23 percent.

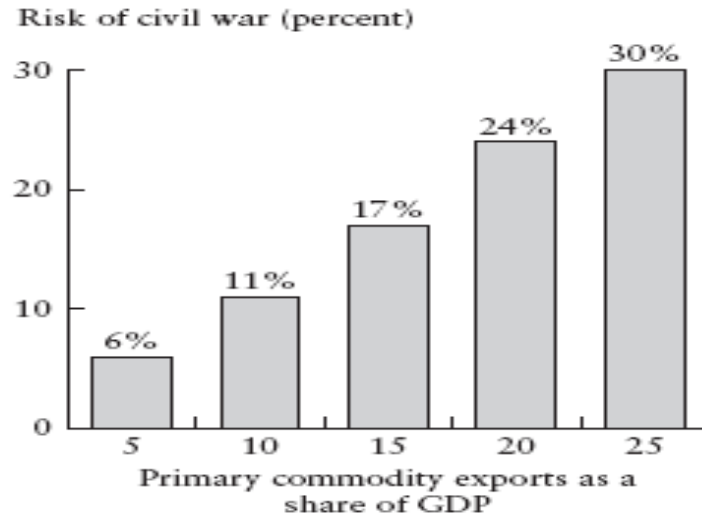
The presence of a centrally controlled pool of wealth also encourages unproductive rent-seeking behavior in other sectors of the economy. Natural resource booms in the past have encouraged wasteful public expenditure and procrastination on reform. McMahon (1997) provides examples of excessive investment in the under-developed non-traded sector during resource booms, due in part to political pressure to prop up ailing industries.<sup>7</sup>

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<sup>7</sup> One example is Trinidad and Tobago, where militant trade unions pressured the government into buying up existing firms and therefore expanding the public sector.



**Figure 8: Association between Resource Concentration and Conflicts**



Source: Bannon and Collier (2003)

Moreover, there are at least three compelling reasons that have been cited as underlying factors behind bad decision making in oil-rich countries. First, oil tends to correlate strongly with the size of the government in the economy. Given that in most legal regimes, oil, gas, and minerals are the property of the state, the revenues in the first instance accrue to the government. This inevitably invites greater government intervention (Stevens, 2003).

Second, the development of oil, gas, or minerals raises expectations among the population. This tends to put pressure on governments to ‘do something’ which encourages speedy responses. Often quick, ill-coordinated decisions are bad decisions. Also, spending revenues too quickly is more likely to introduce distortions into the way the economy works, if only because there is less chance for it to adjust naturally (Auty, 2001).

Third, having more money to play with tends to weaken prudence and normal procedures of ‘due diligence’. Thus the importance of making the ‘right choices’ seem somehow less important. Of particular importance is when government decide on capital spending without giving thought to the recurrent spending implications (Sarraf and Jiawanji, 2001).

While an increase in oil revenues increases rent-seeking behavior and gives governments an excuse to delay reform, it also allows reform-minded governments to implement changes. When oil prices are high, resource constraints get relaxed, allowing governments to pay off debt or invest in infrastructure and the social sectors—provided fiscal institutions and the commitment to reform are strong. Furthermore, there has been

a rise in awareness about Dutch disease since the 1970s, and several governments have expressed a commitment to manage their oil resources more effectively. In Nigeria, for example, all three tiers of its federalist government adhered to a fiscal price rule in 2004 designed to prevent the kind of runaway government expenditure that prevailed during the earlier oil price hikes.<sup>8</sup> The next section discusses policy options available to governments in oil-rich countries to properly manage oil revenue windfalls.

### 3. Policy Options to Manage Oil Revenue Windfalls

Recent events present a unique opportunity for oil-rich developing countries to turn the resource curse into a “blessing”. In general, the factors associated with the so-called Paradox of Plenty discussed above give us a strong *a priori* basis for pinpointing crucial areas of reform. In particular, our previous account of possible factors that may contribute for the “cursing” of oil-rich developing countries provides the following broad policy options:

- *Fiscal and macroeconomic management*: Manage real exchange rate volatility induced by fluctuating resource prices; de-link government expenditure and current oil revenues; limit current period investment beyond the country’s capacity to absorb it; avoid high levels of borrowing against (uncertain) future oil revenues.
- *Encourage diversification*: Increase the resilience of the economy to shocks by promoting diversification away from natural resources towards other tradable, more domestic labor-intensive industries.
- *Strengthen governance*: Provide a clear and easily understood rationale for the management of oil revenues, and ensure that oil windfall savings are easily accountable to the public to avoid rent-seeking and corruption.

In this context, fiscal policies are of central importance in managing looming revenue shocks. As revenues are expected to increase significantly, policy objectives should include dealing with Dutch Disease risks (i.e., avoiding overheating of the economy in response to massive revenue inflows and consequent price inflation, dealing with the unavoidable real exchange rate appreciation and likely erosion of the competitiveness of non-oil export activities), avoiding damaging pro-cyclical expenditures in response to expected revenue swings, and providing for expected declines in production and revenues, and ultimately exhaustion of a country’s oil resources. The desirable fiscal policy should attempt to insulate the economy from the volatility of oil revenues, because frequent upward or downward adjustment of fiscal expenditures are costly and hurt the economy through uncertainty about aggregate demand and through

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<sup>8</sup> IMF 2005 Article IV Consultation: <http://www.imf.org/external/np/ms/2005/032505.htm>

costs associated with factor reallocations (see Katz et al., 2004; Barnett and Ossowski, 2003).<sup>9</sup>

We discuss next five cross-cutting policy options that are usually associated with best practices in the management of oil windfall revenues, ranging from the need to create the conducive environment for the diversification of the economy away from the oil sector to the need to restrain public spending to avoid volatility, corruption, and waste.

### **3.1 Facing the Oil Curse: Five Steps to Manage Windfall Revenues**

A crucial question behind the extraction of natural resources that are exhaustible is how to manage a sudden increase in government revenues derived from windfall gains. There are five associated issues that call for careful consideration by policymakers in oil-rich developing countries.

First, policymakers should strive to improve the investment climate and the business environment in order to foster the gradual and sustainable growth and diversification of the non-oil economy. The extraction of the country's oil reserves by definition represents a depletion of its natural resource endowment that will affect not only the current generation. Clearly, the country receives something in return, but from a long-term sustainability point of view, this reduction should ideally be compensated by the accumulation of other asset forms such as physical and human capital. The decision on the fraction of oil revenues to be saved as financial assets, therefore, requires that policymakers make explicit decisions about the intergenerational distribution of revenues related to the extraction of exhaustible oil resources. In particular, future generations will be worse off if the oil-related revenues are spent too quickly, without leading to improved long term non-oil growth prospects.

Second, the fiscal envelope for the windfall years should be based on a medium-term economic framework. In most of the cases, the horizon for decisions that affect macroeconomic policy in oil-rich developing cases is, at most, two years ahead as spending programs in annual budgets are determined only by revenue prospects for the coming year. A preferred approach would be to base annual ceilings for public expenditure on medium-term revenue prospects, evaluated at a long-run oil price. Under this approach, consistent fiscal surpluses could be generated over time so that financial reserves could be accumulated during the years of peak oil production to sustain incomes when oil revenues eventually fall.

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<sup>9</sup> Carneiro (2007) presents econometric estimates for the case of Angola that show that controlling oil revenues seems to be essential to effectively control the growth of government spending and insulate the economy from oil price volatility. The econometric analysis on the relationship between oil revenues, government expenditures, and gross domestic output in Angola shows that following an increase in oil taxes, government spending temporarily increases and then fades away quickly after the shock. In the same token, GDP responds positively to an increase in oil revenues but this effect is not sustainable in time. In this context, in which government spending and GDP vary in the same direction as oil revenues, the introduction of some sort of stabilization fund to insulate the economy from the volatility associated with the oil sector could be warranted

Third, fiscal policy should be anti-cyclical in relation to oil prices. The procyclicality of fiscal expenditures and oil prices is dangerous and can transmit volatility to the rest of the economy, as discussed in the previous section. In countries that have not been cautious, the resulting fiscal deficits have been financed with external and/or domestic borrowing. The former type of borrowing has rendered many borrowers vulnerable to increases in the interest rate on foreign loans, as well as to the drying up of new loans as sustainability concerns set in, while the latter has often been inflationary or has crowded out private sector access to credit. The joint result could well mean that the government will be forced to adopt belated, costly, and disorderly expenditure cuts in the future, often involving the suspension or abandonment of investment programs. The bottom line for these governments is that in periods of oil price downturns policymakers would be forced to adopt sharp and disruptive fiscal contraction measures when the economy can least afford them.<sup>10</sup>

Fourth, oil-rich developing countries should build up foreign exchange reserves and reduce their public external debt. As discussed before, many of the oil-rich developing countries are among those with the highest ratio of external debt to GDP which renders them vulnerable to external shocks. This situation is associated with the classic “debt overhang” problem. In order to sustain a high level of consumption, usually in periods of low oil prices, oil-exporting countries tend to contract new debt. In periods of high oil prices, governments also tend to incur in new debt to fulfill expectations. The debt overhang problem occurs when lenders start to restrict credit because of fears that investment project returns will be diverted to the servicing of old debt, thereby undermining the credit quality of any new debt. The possibility of debt overhang calls for robust foreign exchange reserves and generally caution in incurring new debt. In periods of windfall accumulation it is also wise to use part of the money to repay external creditors.<sup>11</sup>

Finally, expenditures should not rise faster than transparent and careful procurement practices allow. Massive institutional and legal reforms are necessary to develop a thriving business environment. In simple terms, the level of spending should be determined taking into account its likely quality and the capacity of the administration to execute it efficiently. In this regard, an abrupt enlargement of expenditure programs associated with oil windfalls carries important risks. A hasty public spending program may exceed the government’s planning, implementation, and management capacity, with the result that it may be difficult to prevent wasteful spending. For instance, the criteria for the selection of capital projects may become lax, leading to suboptimal choices; the costs of new projects may also increase due to bottlenecks in the supply of some inputs; and a large-scale capital expenditure program can also be a fertile ground for governance problems.

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<sup>10</sup> For a discussion of procyclical fiscal policies in Nigeria and Venezuela, for example, see Hausmann, Powell, and Rigobon (1993), and García et al. (1997).

<sup>11</sup> Budina et al. (2006) discuss how the phenomenon of debt overhang has afflicted Nigeria.

#### **4. An Institutional Framework for Managing Oil Booms**

As per the previous discussion, the “fiscal link” is the key element in the transmission of oil price volatility to the rest of the economy. Because there is such fiscal link, it is therefore desirable to insulate the economy from oil revenue volatility through the de-linking of fiscal expenditures from current revenue. One possible way of doing that is to target expenditure at a sustainable level akin to the “permanent income” level of consumption theory. This means that the government should save, or accumulate assets, when the price of oil is higher than its long-term level, and dissave when the price is low. In this way, the fiscal authority would alternate between net asset accumulation and liability accumulation depending on whether the price is above or below its long-term level. An important issue arises in managing a possible surplus. That is, unless the government spends all of its current revenues, the process of managing the revenues will depend on the country’s particular institutional arrangements. In a number of countries, an “oil revenue fund” (or a stabilization fund) has been the institutional mechanism created for managing oil revenues. A brief discussion on how these funds should operate is presented next.

An increasing number of oil-exporting countries have introduced oil stabilization and savings funds as a way of self-insurance to deal with volatile oil revenues. A stabilization fund is designed to stabilize revenues and implicitly expenditures. A savings fund is designed to create a store of wealth for future generations by converting a depletable revenue stream into a perpetual income flow. However, if the decision to establish a fund is taken, then design and the rules operation of the fund should be based on transparent integration into the budgetary process to avoid off-budgetary spending. Parliamentary oversight should also be included with the aim of preserving the executive from maintaining sole discretionary powers over the fund’s resources. And to ensure proper integration of the funds in the budgetary process, there should be no independent spending authority for the fund. Furthermore, the fund should be prohibited from holding public debt and assets in the fund should not be used as collateral to increase public spending.

The experience of several countries with oil revenue funds is summarized in Devlin and Lewis (2004) and Davies et al. (2003), who argue that the relatively successful experience of countries such as Kuwait and Norway in the use of such funds to restrict revenue and therefore limit fiscal spending during oil price booms and to accumulate substantial net savings has contributed to a proliferation of funds in recent times. Countries like Azerbaijan, Algeria, Ecuador, Iran, Kazakhstan, Mexico, Nigeria, Venezuela and others are among those who have experienced with oil funds. But, empirically, the effectiveness of funds in mitigating volatility has been ambiguous. Countries with poor institutions and a tendency towards fiscal profligacy have not really been able to insulate the economy from volatility even in the presence of an oil stabilization fund, such as Venezuela and Nigeria, for example. On the other hand, the evidence seems to suggest that countries with more prudent expenditure policies tended to establish a successful stabilization funds. In countries such as Chile, Norway, and Oman, for example, funds appear to deliver a number of favorable outcomes: lower

levels of volatility in government expenditure, reduced government expenditure, and higher shares of gross fixed capital investment.

## **5. Conclusion**

This paper has discussed some of the main problems associated with the Paradox of Plenty that afflict oil-rich developing countries. In that sense, Dutch-disease associated phenomena were considered, followed by the problems caused to macroeconomic management by the volatility of oil prices, the negative externalities of weak governance, and the constraints related to existing limited institutional capacity that prevent these countries to transform their oil wealth into physical and human capital wealth. The paper presented several examples of developing countries which find themselves highly dependent on oil revenues and that at the same time exhibit very low social indicators, high indebtedness ratios, significant poverty rates and severe income inequality.

The analysis pointed to the need for these countries to address three major policy issues, especially in periods of rapidly accumulating oil windfall gains, namely: (i) follow best practices associated with fiscal and macroeconomic management; (ii) create the conditions to foster the diversification of the economy away from the oil sector; and (iii) strengthen governance. Among these three policy issues, the most deterministic one is the management of the macroeconomy because if a government is not able to properly insulate its fiscal policy from the volatility associated with the fluctuations of the international price of oil, then there will be little chance for any progress on the other two fronts.

The paper has argued that an institutional mechanism that has been used in many countries since the 1960s to manage fiscal policy is the so-called oil stabilization funds. However, the paper has also stressed that an oil fund is not a panacea because it cannot prevent the fiscal authority from spending the windfall revenues and financing its expenditure by borrowing. That is, the fiscal authority can acquire assets on the one hand in the fund, but liabilities on the other through borrowing. In this case, the consolidated net asset position of the government would not improve during the oil boom. Fiscal policy therefore would not be able to insulate the economy from oil price turbulence and the fund would have served no purpose. Furthermore, if accountability and transparency are not guaranteed and institutional quality is weak, there is an ever present danger that the fund will be raided, especially if the fund is large.

Finally, a general point can be made that natural resources and oil more specifically should be seen as an asset that can foster economic development, as long as intelligent public policies complement natural resource wealth to promote the diversification of the economy and reduce dependency on the point-resource. Key to this process is how the countries resolve the political problem of managing competing claims for the natural-resource rent and how they face the inevitable trade-offs that need to be made so that economic policies can work effectively.

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