

ECONOMIC  
RESEARCH  
FORUM



منتدى  
البحوث  
الاقتصادية

2012

# working paper series

**OIL CURSE IN YEMEN:  
THE ROLE OF INSTITUTIONS AND POLICY**

**Mahmoud Al-Iriani**

**Working Paper No. 694**

**OIL CURSE IN YEMEN:  
THE ROLE OF INSTITUTIONS AND POLICY**

Mahmoud Al-Iriani

**Working Paper 694**

**July 2012**

Prepared for the research project on 'Understanding and avoiding the oil curse', as part of the ERF 'Research Initiative on Arab Development: RIAD', the Economic Research Forum, I am grateful to the generous comments received from Raimundo Soto, David Cobham, and the Working Papers Series' editor at the ERF

**Send correspondence to:**

Mahmoud Al-Iriani  
Dubai Economic Council, Dubai, United Arab Emirates  
[maliriani@dec.org.ae](mailto:maliriani@dec.org.ae)

First published in 2012 by  
The Economic Research Forum (ERF)  
21 Al-Sad Al-Aaly Street  
Dokki, Giza  
Egypt  
[www.erf.org.eg](http://www.erf.org.eg)

Copyright © The Economic Research Forum, 2012

All rights reserved. No part of this publication may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without permission in writing from the publisher.

The findings, interpretations and conclusions expressed in this publication are entirely those of the author(s) and should not be attributed to the Economic Research Forum, members of its Board of Trustees, or its donors.

## Abstract

This paper studies the natural resource curse (NRC) hypothesis as it applies to Yemen. There is evidence that Yemen has in fact not been immune from the NRC symptoms as identified in the literature. The country's economic, social and political structures have changed ever since oil was discovered. Evidence shows that the positive contribution of oil in the country's development was far from satisfactory. There is also evidence that procyclical government policies have exacerbated the unfavorable effects of oil on the country's development. In addition, bad (or non-existent) institutions led to mismanagement of oil wealth. Finally, the political economy of oil (rent-seeking) has prevented the development of quality institutions and resulted in political instability and conflict. Although there is no one-recipe for solving Yemen's problems, the government may be able to reduce the NRC symptoms by implementing carefully-designed countercyclical, rule-based economic policies and increasing transparency and the role of institutions in managing the oil wealth.

**JEL Classification:** O13, O43, P16

**Keywords:** Natural resources, oil, natural resource curse, economic growth, Yemen

## ملخص

تدرس هذه الورقة فرضية لعنة الموارد الطبيعية بالتطبيق اليمن. هناك أدلة على أن اليمن في واقع الأمر لم يكن في مأمن من عوارض لعنة الموارد الطبيعية كما هي محددة في الأدب. لقد تغيرت الهياكل الاقتصادية والاجتماعية والسياسية للبلاد منذ اكتشاف النفط. الدلائل تشير الى ان المساهمة الإيجابية للنفط في التنمية في البلاد ما زالت غير مرضية. وهناك أيضا أدلة على أن سياسات الحكومة المسايرة للاتجاهات الدورية أدت إلى تفاقم الآثار السلبية للنفط في تنمية البلاد. وبالإضافة إلى ذلك، أدى سوء (أو غير وجود) المؤسسات إلى سوء إدارة الثروة النفطية. أخيرا، قد حال الاقتصاد السياسي للنفط (الربيعي) دون تطوير مؤسسات الجودة وأسفر عن عدم الاستقرار والصراع السياسي. ورغم عدم وجود وصفة واحدة من أجل حل المشاكل في اليمن، قد تكون الحكومة قادرة على الحد من لعنة الموارد الطبيعية من خلال تنفيذ سياسات اقتصادية مصممة بعناية لمواجهة التقلبات الدورية، تكون قائمة على قواعد، وتزيد من الشفافية، ودور المؤسسات في إدارة الثروة النفطية.

## **1. Introduction**

The Republic of Yemen is one of a handful of countries around the world that are blessed with natural resources, namely crude oil and natural gas (oil for short reference). It is among the 11 oil producing and exporting countries in the Arab region and falls into the group of Arab oil economies that are endowed with limited amounts of hydrocarbons reserves and are relatively populous. Yemen is, however, a relatively new member in the club of oil producer having only tapped its reserves in the late 1980's when the government signed its first production sharing agreement with the U.S.-based Hunt Oil Company. Subsequently, oil export did not actually commence until 1987.

The start of oil export marked a new era for Yemen and the role of oil in the country's economic and social development cannot be overstated. The effect of oil on the economy began even before the country became an oil producer, indirectly through the flow of oil funds from neighboring oil-exporting countries. Although there are no significant investments by oil-rich countries in Yemen, the labor remittances by Yemenis working in the GCC countries and aid from the governments of the GCC have been very influential in shaping the country's development path. As a result, the Yemeni economy has been subject to the same oil cycles experienced by other oil producers in the region even before it started exporting its own oil.

The present case study analyzes the effects of Yemen's own oil production and exports on its economy. As is the case with the majority of the oil-exporting countries, Yemen has become dependent on oil as a main source of exports and government revenues. It therefore has become subject to the high volatility of international oil prices and other adverse effects identified in the literature as the "Natural Resource Curse" or the NRC.

The NRC literature has documented that oil abundance has a profound impact on the overall development of a country in several ways. First, oil abundance may have a negative influence on growth and diversification (but not necessarily so). Second, it could have a negative effect on the country's democratic transitions and may enable authoritarian regimes to prevail. And third, natural resource abundance often correlates with conflict and civil wars. In this study, we test the NRC theory, in the case of Yemen as an oil exporter by weighing the NRC symptoms. Yemen's experience, as an oil-dependent economy, in managing its economy in the face of common effects of the NRC is presented. We discuss how oil has shaped the economy since oil production began in 1984 and the challenges brought forth by the economic management of oil at the macro-institutional level.

This paper identifies and studies the effects of the NRC on Yemen through three typical channels: Dutch Disease, volatility of prices, and institutional effects. We then discuss the current institutions and policy rules and how procyclical or countercyclical government policies have been at times of severe oil cycles. In addition, the extent to which the country's current strategy has succeeded in utilizing oil revenues to enhance economic growth and institutional development is discussed. In that context, we analyze the underlying political economy issues surrounding chosen policies/development strategies and how they might have been influenced by oil-dependency.

The plan of the study is as follows. Section two introduces the NRC hypothesis and its implications on economic growth as discussed in the literature. Section three presents a brief introduction to Yemen, its economic growth profile and the role of rents, especially oil, in shaping Yemen's economic performance. Section four discusses the common NRC symptoms as applied to Yemen. Section five introduces and benchmarks Yemen's institutional framework governing financial and monetary management regimes. Section six discusses the political economy of oil in Yemen. Finally, section seven concludes with the research findings and their policy implications.

## 2. Natural Resources and Growth: The Resource Curse Hypothesis

The relationship between natural resources and economic growth has been studied extensively in the growth literature. The traditional view emphasizes the positive role of natural resources in economic development and points out that natural resources have played an integral role in the development of a number of advanced nations such as the United States, Australia, Canada, and the Scandinavian countries. Empirical evidence, however, shows that natural resources do not always lead to increased economic growth and development *per se*. The so-called “Natural Resource Curse” hypothesis holds the view that countries with abundant natural resources are likely to grow at a slower pace than countries with less of, or no such, resources. This is because natural resources interact with, and alter, various social, political, and economic factors resulting in slower economic growth and development.

The term “Natural Resource Curse” was first used by Richard Auty in his seminal book about the subject (Auty, 1993). The empirical literature that followed has established several instances linking natural resources with growth failure (Sachs and Warner, 1999). A comprehensive survey of the subject is found in Frankel(2010).

A number of plausible explanations for this detrimental impact of the natural resources have been given in the literature. One explanation is the *crowding-out effect* hypothesis where natural resource exploitation crowds out other productive sectors in the economy that would have otherwise driven growth. Such effects might include crowding out exports of manufactured goods (Sachs and Warner,2001), crowding out human capital (Gylfason, 2001) , crowding out entrepreneurial activity or innovation, and crowding outs resulting from the way the political process gets captured in resource-abundant economies where “a greedy state obscures development” (Auty,2001).

Another explanation is the economy’s exposure to international commodity price variability that leads to domestic macroeconomic instability. Empirical literature has also shown that natural resource exports might generate negative impacts on the exporting country through shocks to commodity price which may generate higher income shock, resource volatility, negative effect on growth via deleterious impact on institutional quality (Sala-i-Martin and Subramanian, 2003). In some instances, they may even result in wars where natural resource endowments in general are linked to conflicts around the world and within oil countries (Tadjoeddin, 2007). In addition, the unfavorable effects of the temporary strong upward swings in international prices of exported commodity, i.e., the so-called “Dutch Disease” may occur. According to the Dutch Disease hypothesis, the discovery of large reserves of natural gas in the Netherlands in the 1960s led the equilibrium real exchange rate to rise, negatively affecting other exporting sectors and thus lowering overall economic growth.

Accounts of the NRC symptoms are available for a number of countries like Nigeria, Venezuela, Angola, and Ecuador, but the case of Nigeria has probably been the most pronounced in the literature (Mähler, 2010; Sachs and Warner, 2001). In this particular case, Sala-i-Martin and Subramanian (2003) points out that Nigeria’s per capita GDP (in purchasing power parity terms) is still among the lowest in the world and was even lower in 2000 than it was in 1970 although Nigeria has enjoyed huge oil windfalls since the late 1960s. Another case is that of the Netherlands, where the previously mentioned Dutch Disease originated.

While some authors have argued that the NRC is an inevitable outcome in resource-abundant economies, others have contended that even though natural resource windfalls negatively influence the growth rate of per capita income, they do raise the level of per capita income, as long as their economic rents are not fully dissipated (Boyce and Emery, 2005). Another relatively new line of research on the subject has appeared in recent years and claims that

there is no such curse associated with natural resources (Alexeev, 2005). Most of this literature argues that the occurrence of the curse depends ultimately on institutions and governance and not on the abundance of natural resources. In the case of crude oil and natural gas the literature identifies a number of cases where it is mismanagement of such resources that might lead to the NRC (Elbadawi and Gelb, 2010). This conclusion is supported by the fact that a number of resource-rich countries have achieved remarkable economic growth with the help of such resources combined with high-quality institutions. The evidence for such a conclusion is supported by findings in Arezki and van der Ploeg (2007) and Mehlum et al. (2006b).

There has, in recent years, been a shift in the focus of the NRC literature, from investigating the economic effects of resources averaged over several countries, to investigating the apparent difference in the individual experience of resource-abundant countries where some of them succeed while others did not. A classic account for the absence of the NRC includes the case of Norway. Cappelen and Mjøset (2009) point out that while Norway had a relatively low GDP per capita during the 1950-70s compared to the OECD average, it is currently ranked among the countries with the highest GDP per capita in the world and is at the top of the UNDP's Human Development Index (HDI). Cappelen and Mjøset (2009) argue that this development was a result of growth in the Norwegian oil sector. They point out that Norway was able to avoid symptoms of the NRC because it had good institutions and sound policies. Other cases of success in the presence of natural resources abundance are the cases of Botswana and Indonesia. The latter managed to achieve respectable rates of growth during the 1970s and 1980s, and became one of the "Asian Miracles" (Rosser, 2007).

The conclusion of this line of research is that while mismanagement of oil resources may turn them into a curse, ample oil and other natural resources is not necessarily a bad thing. Although vulnerability of an oil-dependent economy to oil price cycles and the decrease in economic diversification are two factors that have been frequently blamed for their damaging effect on growth, carefully-designed and properly implemented fiscal, monetary and exchange rate policies may reduce the adverse effects of such vulnerability. In particular, the unfavorable effects of the Dutch Disease and the variability in resource markets can be dampened by carefully-designed countercyclical fiscal and monetary policies. Additionally, the unfavorable consequences of the rapid depletion of natural resources may be reduced by proper saving and investment of the windfall from resource export revenues as a replacement for the decreased wealth resulting from the depletion of the reserves.

### **3. Yemen Economic Profile**

#### ***3.1 Yemen's economy***

Yemen's economy is characterized by relatively limited natural resources coupled with a high population growth rate and a crippling illiteracy rate. The country faces a diverse set of challenges that affect its ability to achieve sustainable growth and economic development. These challenges may be classified under four broad categories: economic, social, political and security. Factors affecting Yemen's development performance are interdependent and interrelated. It is however evident that economic challenges form a fertile environment in which other challenges grow and hinder the country's development.

For decades, the economy of Yemen has been dependent on external sources of income including worker remittances, foreign aid and oil exports. In a report by the World Bank it was pointed out that: "Despite rich resource endowments, political freedoms unique in the Middle East, and noteworthy resilience in overcoming civil war and oil price shocks, Yemen has not met the hopes raised at the time of its unification as a republic in 1990" (The World Bank, 2006, p. ii). Yemen's economy is still classified as the poorest in the Arab region and was ranked 133 out of 169 countries included in the UNDP's Human

Development Index (HDI) in 2010 (Table 1). This score is not much higher than that of the poorest African countries, and within the Arab region it is only higher than that of war-torn Somalia. The country has also been described by many international organizations as a “fragile” or “failing” state and a country “among the least peaceful and secure countries worldwide” (USAID, 2011).

Despite the slow improvement in the educational level of the Yemeni population, illiteracy remains high at 27% for males and 65% for females (39% on average). The vast majority of Yemen’s 24 million people live below the poverty line (on less than \$2 a day). In 2010 nominal per capita GDP was estimated to be about \$1283 and 43% of the population was considered poor. As Figure 1 indicates, Yemen’s development performance has not been up to par and the country ranks substantially below the MENA average in all developmental aspects.

### ***3.2 The role of rents in Yemen’s economy***

The economy of Yemen may be considered a “rent economy”, historically dependent on, aside from the recent oil wealth, labor remittances and foreign aid. From the early 1970s to 1990, the economy was largely dependent on significant cash and in-kind transfers from Yemenis working in the oil-rich GCC countries. Foreign aid has also historically been an important source of income for the country. In 1984, Yemen became an oil producing country and has ever since become increasingly dependent on income generated from oil exports as the main engine of economic activities. The importance of revenues from oil exports has increased as worker remittances decreased in importance. Furthermore, the recent discovery, utilization, and export of natural gas is expected to further increase the country’s dependence on hydrocarbons therefore compensating for the lost revenues from the dwindling oil production that began in 2003.

#### *3.2.1 Worker remittances*

Since the Gulf oil boom began in the 1970s and before the discovery of oil in Yemen in the late 1980s, the economy has been dependent on remittances from over a million Yemenis working in the GCC and other countries<sup>1</sup>. This number of workers represented more than a third of the total labor force in the country at that time. Remittances peaked during the 1970s and 1980s when oil prices increased and the Gulf countries launched substantial development programs, which increased demand for Yemeni unskilled labor (**Error! Reference source not found.**).

For the two decades prior to unification in 1990, the two Yemens (north and south) were major labor exporters and hence enjoyed relatively high growth associated the flow of significant amounts of remittances associated with the oil boom in the Gulf States. These remittances, in addition to foreign assistance, were the driving force behind a remarkable period of growth that Yemen experienced starting mid 1970s (McClelland, 1980)<sup>2</sup>. However the then two economies became more vulnerable to major fluctuations in GDP growth as a result of their dependence on workers’ remittances which in turn were affected by the fluctuations of oil revenues in the GCC countries. Hence, both countries witnessed a slowdown in their economic growth following the sharp decline in oil prices in the 1980s; the slowdown was felt less in the north due to its more open and mature economy.

---

<sup>1</sup>In 2010, Yemen was the 7<sup>th</sup> largest supplier of migrant workers and remittance recipients in the MENA region. Currently, remittances are estimated at 5-6% of GDP (down from 31% in 1990), or 1.5 folds of non-oil exports (The World Bank, 2011).

<sup>2</sup>Some argue that financial flows from remittances as well as foreign aid can provoke effects that are similar to the resource curse. See, for example Djankov, et al. (2008) and Abdih et al. (2008).



Yemen's experience with remittances is in line with a substantial amount of literature that credits remittances as welfare enhancing due to their favorable effects on recipient households (Abdih et al., 2008). Mohamed and Sidiropoulos (2010), among others, have supported this view using a sample of seven labor-exporting countries in the MENA region. In general, it could be argued that this has been the case in Yemen where remittances have traditionally accrued to the private sector therefore enhancing its consumption and investment capabilities and have been important for generating badly-needed foreign exchange.

The flow of remittances however made Yemen's economy more dependent on external income and hence more vulnerable to the volatility of remittances (Chami et al. 2003; Chami, 2006). Furthermore, in 1990 and because of the Gulf War hundreds of thousands of Yemeni migrants were expelled from Saudi Arabia and other Gulf States. This resulted in Yemen losing a precious source of income that had been the mainstay of economic development for many years and hence a deterioration of per capita remittances occurred (**Error! Reference source not found.**). In recent years, the stock of migrant workers from Yemen has again increased reaching an estimated 1.1 million, the majority of whom are employed in Saudi Arabia and other GCC states. However both the total, and per capita, remittances did not return to their level in the mid 1980s.

### *3.2.2 Foreign aid*

Since its inception as a unified country in 1990 Yemen has largely benefitted from external aid from the Gulf countries, Europe and various international organizations. Yemen is however considered among the low recipients of aid, ranking 50 among aid recipient countries in 2009. The amount of official foreign aid to Yemen has not been large enough to create any "foreign aid dependency". As **Error! Reference source not found.** indicates, the amount of official foreign aid to Yemen reached its peak in 1999 at about 7% of GDP but receded thereafter to reach an estimated low of 0.4% percent in 2010. Foreign aid to Yemen has mostly been directed towards specific developmental projects in infrastructure, education and technical assistance.

### *3.2.3 Hydrocarbons (oil and gas)<sup>3</sup>*

Yemen belongs to a geographical area that contains more than two thirds of the world's known crude-oil reserves and about one half of world's natural gas reserves. It however only recently joined the club of oil producers and with relatively small quantities. There were numerous oil exploration attempts in the past in various parts of the former North Yemen yet it was not until 1981 that the government signed a production sharing agreement with the U.S.-based Hunt Company for oil exploration in the region of Marib/Jawf. Exploration continued for several years before drilling productive oil wells and in July 1984 North Yemen joined the ranks of oil producing countries when it announced the first productive oil well with a capacity of 7800 barrels per day (bpd). Later in October 1987, Yemen completed the construction of its first oil export pipeline, extending 440 km from the region of Safer to the export port of Ras Isa on the Red Sea. The first oil shipment was exported in December of the same year.

In 1990, when the two Yemens were reunited, exploration efforts expanded to the former South Yemen. Exploration efforts in the south over the course of the next two years resulted in the discovery of additional commercial quantities in the basin of Hadramout in August of 1990. Production of significant commercial quantities began in the fourth quarter of 1993 at a daily rate of up to 120 thousand bpd. An additional central production unit and export facility was built in the port of Shuhur. With the addition of this facility, crude oil production increased to reach about 400 thousand bpd. Today, Yemen's estimated reserves stand at

---

<sup>3</sup> Information in this section is collected from U.S. EIA, 2011; BP, 2011; and Central Statistics Organization, 2011.

about 3 billion barrels, the lowest of all oil-producing states in the region. In addition, production has been declining since it peaked in 2002 at 460 thousand bpd (**Error! Reference source not found.**). The U.S. Energy Information Administration (EIA) reports that production reached a low average of 260 thousand bpd in 2010. Domestic consumption of crude oil has on the other hand been increasing steadily to reach about 156 thousand bpd in 2010 therefore leaving only about 105 thousand bpd for export. Furthermore, Yemen's imports of oil-products averaged at about 63 thousand bpd in the same year.

With respect to natural gas, its discovery was associated with the discovery of crude oil but exports began only in recent years. According to available statistics, Yemen's proven natural gas reserves are estimated at 16.9 trillion cubic feet, the bulk of which, about 10 trillion cubic feet, is located in the eastern provinces of Marib and Al-Jauf. Most of this natural gas is in the form of associated gases in oil fields. The production of natural gas began in 1993 and reached 727 billion cubic feet (bcf) in 2005. Since then, production has decreased to about 510 bcf in 2009, most of which (441 bcf) was re-injected into oil fields to enhance oil recovery. In addition, 35 bcf were marketed locally, 18 bcf vented and flared, and 15 bcf were exported from the new Liquefied Natural Gas (LNG) facility in Belhaf port. This facility, together with a pipeline that delivers natural gas from Marib, 300km away, is the largest project in Yemen with a cost of about 4.5 billion dollars. In 2010, after the completion of a second production line in the Belhaf facility (which increased capacity to 326 bcf of LNG), Yemen's natural gas exports increased to 243 bcf, most of which found its way into South Korea, China and North America.

Oil exports which began in 1987 have more than compensated for both the decline in worker remittances and foreign aid (**Error! Reference source not found.**). Hence, even with the negative effects of the Gulf war in 1990 and the civil war in 1994, economic growth in the 1990s was remarkable, reflecting the initial beneficial impact of the new oil revenues on the economy as a whole, an effect predicted by Neary and van Wijnbergen (1985). During the period 1990-2000, real GDP growth averaged 5.5% (The World Bank, 2002). Strong oil revenues induced large increases in government spending and, combined with private transfers from labor remittances, led to accelerated economic activity and growth. As a result, poverty declined from 40 percent in 1998 to 35 percent in 2006.

The overall economic growth however, did not have the same effect on real per capita GDP because of the country's high population growth. In addition, despite the satisfactory rate of economic growth, unemployment continued to rise in the 1990s and is currently estimated at 30-35% of the labor force. The discovery and production of oil did not seem to have had a profound positive effect on development of Yemen. To the contrary, despite a positive rate of growth, economic activity in Yemen has become dominated by the production and export of oil and recently natural gas and hence the country has become vulnerable to their unpredictable cycles.

Finally, it is expected that new efforts by the Yemeni government to liquefy and export natural gas will enhance its exploration movement therefore increasing the prospects for additional discoveries. Earnings from Yemen's LNG exports were projected to partially offset falling oil export revenues. However, the government is reported to have entered into long term commitments to export Yemen's LNG at a low and fixed price, reducing the potential for such offset. Furthermore, the increasing need for natural gas to be reinjected in wells to enhance oil recovery is posing another problem for the LNG sector. Additionally, the Yemeni government is facing a series of domestic gas supply shortages that have raised public enquiries on the circumstances surrounding the government's negotiated long term contracts. Long term export contracts are expected to hamper the government efforts to use natural gas in generating badly-needed electricity. After high hopes that natural gas as a

cheap source of clean energy will make up for the dwindling oil production, replacing diesel in generating electricity and satisfy local consumption needs, it has become clear that gas exports will provide only a modest estimated \$ 2 billion per year over the next twenty years.

#### 4. Testing for the NRC in Yemen

In Yemen, ever since commercial oil production began in July 1984 and the first oil shipment was exported in December 1987 the economy has become heavily dependent on hydrocarbons. **Error! Reference source not found.** shows Yemen's oil dependency ratios compared to those of the six GCC countries. The dependency ratios used are the share of government oil revenues in total revenues and the share of oil export earnings in the value of total exports. Yemen shows a high level of export and revenue dependency on oil, 82% and 44% respectively. When compared with countries of the GCC, Yemen's export dependency ratios are substantially higher than those of all countries with the exception of Qatar.

Not only has Yemen's economy become dependent on oil as a major contributor to the GDP and other variables, but its economic performance has also become subject to international oil price fluctuations. Global oil price fluctuations have become detrimental to the level of per capita income. As illustrated in **Error! Reference source not found.**, per capita GDP has fluctuated closely with the fluctuations in international crude oil prices. In addition, oil dependency is magnified in the movements of government budget variables as indicated in **Error! Reference source not found.** Oil revenues have become a fundamental source of fiscal revenues and for the majority of the period 1990-2009 the government managed to keep a relatively low fiscal deficit. However, with the substantial increase in oil prices between 2006 and 2008 came an increase in government expenditures which, as expected, failed to recede with the decreasing oil prices that followed, thus resulting in an increase in overall fiscal deficit.

Yemen's economy has also been subject to large fluctuations resulting from the exogenous effects of oil prices as well as remittances and foreign aid. While the NRC has been widely accepted in the literature to likely occur with the flow of oil revenues, new evidence has emerged to show that both remittances and foreign aid might have very similar effects on the receiving country resulting in an NRC-like outcome. A number of studies have shown that in some cases aid money may well have properties similar to those of natural resource revenues. That occurs when the receiving governments abuse foreign aid money the same way oil money is. Foreign aid might also be associated with higher political risk and deterioration in economic and political institutions in the recipient country, i.e. symptoms similar to those of the NRC (Braütigam and Knack, 2004; Djankov et al., 2008). When considering such negative outcome of foreign aid in the case of Yemen, there is less evidence that foreign aid has had a detrimental effect on the country. Foreign aid has always been relatively small and assigned to certain projects rather than given in cash. A similar conclusion can also be applied to labor remittance. Significant flows of labor remittances have occurred, especially in the mid-seventies, and may have created some degree of dependency on them. However, it is safe to say that their effect on the economy has been positive in general because they generally accrue to the household sector rather than the government, placing them outside of the governments reach and hence abuse.

Dependency on oil and other rents has characterized the economy of Yemen since the early 1990s. However, whether oil dependency has translated into a curse in the sense of the NRC hypothesis is to be investigated. Our goal is to test for the existence of the NRC and the extent to which the government of Yemen was successful in reducing the harmful effects of the curse, if it existed. Three research strands can be identified in the literature that attempt to explain the factors that cause the NRC and its impact on a country. The first concentrates on the economic impacts of natural resources. It explains the existence of the NRC in an

economy by the development of the crowding-out effect of the Dutch Disease. The second provides a political economy explanation for the influence of the NRC. In this view, the NRC exists through the social and political institutional effects in the economy. The third stresses on the interdependence of the economic and institutional factors causing the NRC, blaming both the Dutch Disease and poor economic management.

The latter strand is presented in Elbadawi and Gelb (2010) who indicate that most countries in the Arab region have experienced sub-optimal growth paths, and this sub-optimal performance has been linked to the absence of medium-term, countercyclical macroeconomic policies. It is also linked to their lack of participation, transparency, and accountability. These links, in turn, have been shown to be a consequence of oil rents that impede economic diversification, the crowding out of other productive activities (the Dutch Disease), and the extreme volatility of rents. In addition, oil rents also have been shown to promote bad governance and hinder the transition to transparent and accountable institutions. On the other hand, some claim that the absence of democracy in high-income Arab countries may be explained by the existence of vast oil reserves in such countries (Ross 2001).

Given the above characterization of the Arab growth experience, a test of these destabilizing variables in the case of Yemen, and in the presence of sufficient data to empirically test the relationship between growth and oil in Yemen, may suffice as a test for the NRC. Since the start of oil production and export the economy of Yemen has gone through fundamental changes and we need to assess their link with the new oil windfall. We will first relate the paths of both economic growth in Yemen and oil revenues in the past 19 years for which data is available. Then we will discuss the pro or counter cyclical policies that were adopted by the government.

#### ***4.1 The crowding out effects of oil***

Linking economic growth and development to natural resource abundance and the notion of the NRC in the literature has been based on empirical findings comparing growth paths of the group of resource-rich countries to that of resource-poor countries. These empirical findings suggest that major distortions may result from oil export booms in the economies of oil-abundant countries because, for example, growth in the natural resource wealth may lead to lower growth in the non-resource sector. Therefore, one general indication of the existence of the NRC is the low (or negative) growth of non-oil sectors accompanied by high growth in the oil sector, in which case the oil sector dominates economic activities and the economy becomes less diversified.

The evidence that identifies the negative impact of natural resource abundance on growth is based on the empirical findings from previous research on oil abundant countries using cross-country or panel data and arriving at conclusions that derive from *average impact* of the NRC. However, as Torvik (2009) points out, a more interesting way to look at the NRC is to ask why some resource-abundant countries have experienced the NRC symptoms while others have not. That is, we should look at variation rather than average effect. Following Torvik's suggestion, we will look at the applicable NRC symptoms in the case of Yemen individually, as indicated by the impact of the oil windfall on its economic growth and institutions.

A number of different channels through which the crowding out NRC may occur have been identified in the literature. Some of these channels may be tested in the case of Yemen while others may not either because they are not applicable or because no sufficient data exist. Gylfason (2004) identifies five main channels through which natural resource abundance or intensity seem to have inhibited economic growth across countries causing the NRC. His paper presents empirical cross-country evidence that "natural capital intensity tends to crowd out foreign capital, social capital, human capital, physical capital, and financial capital"

(Gylfason 2004, p.1). In another attempt to test the NRC Torvik(2009) identifies six dimensions in which the winners and losers differ. They include: (i) saving of resource income; (ii) political system; (iii) institutional quality; (iv) type of resources; (v) offshore versus onshore oil; and (vi) early versus late industrialization (Torvik 2009, p. 254). In this study we will adopt a combination of both Gylfason's and Torvik's criteria to test for the existence of the NRC and its impact on the economy of Yemen. It should be noted that the channels mentioned by both authors all represent one type of a crowding-out effect or another, where natural resource capital crowds out all other types of capital whether physical, human, financial or social, marking deterioration of all sectors except the natural resource sector.

Furthermore, in the available literature the ultimate effect of the NRC that needs to be tested is its effect on overall economic growth. It is crucial, however, to note that economic growth, in the sense of increased income, does not necessarily translate into a parallel economic development. For example, with significant contributions from oil exports, Yemen experienced acceptable rates of real economic growth during the last 20 years, averaging at 5% annually, but the country has suffered from setbacks in its development efforts. And while real oil-GDP growth rates have been fluctuating to a large extent, and were negative for most of the last decade, non-oil GDP has shown a low but positive and fluctuating growth trend during the period spanning from 1990 to 2010. This growth has not, however, translated into high economic development paths, a fact that is overlooked by most of the NRC literature which considers high and positive rates of growth as an indication of the country escaping the NRC. In Yemen, the high population growth rate (3-3.5%) has reduced the effect of real growth on the per-capita real income to an average of 1.4% (**Error! Reference source not found.**) and hindered economic development. The mere growth in both GDP and per capita GDP has contributed little to the country's development and therefore it can be inferred that the suspected NRC effects might be to blame and should be investigated. The fluctuation of the real non-oil GDP is from a policy perspective negatively affecting investments in that sector. This in turn leads to less sustained economic growth after natural resources are depleted (Arzeki et al., 2011).

#### *4.1.1 Crowding out other economic sectors*

The first crowding-out channel of the NRC is represented by the crowding out of other economic sectors (the Dutch Disease) which happens when oil production has a negative impact on the competitiveness of non-oil products. **Error! Reference source not found.** shows the development of both the oil and non-oil sectors in terms of their respective growth rate. With the exception of the period 1991-1994 where growth in the oil sector was accompanied by contraction in the non-oil GDP, there is little evidence that there was a crowding-out effect in the economy in the Dutch Disease sense.

Further inspection of the Dutch Disease if it exists should lead to the observation of a reduction in terms of trade for the resource abundant country such that the country will export less and receive less FDI. In **Error! Reference source not found.** it can be seen that although oil exports in Yemen have been fluctuating, they have increased on average during the last 20 years. On the other hand, there is no clear indication of a crowding out effect, as non-oil exports have seen a parallel increase during the same period.

Furthermore, testing for the behavior of the net FDI shows it has been in line with the developments in the oil sector, which witnessed a large jump in the early 1990s reflecting an increase of investment by multinational companies in the oil sector. FDI levels fluctuated around zero but witnessed an increase in the 2007-2009 period reflecting new investments in the natural gas sector (**Error! Reference source not found.**). However, there is an indication that the oil sector has crowded out the once-important agricultural sector. The share of the

agricultural sector in GDP has decreased from more than 15% in 1994 to a mere 7.8% in 2010 (**Error! Reference source not found.**). These developments indicate that the increased share of the oil sector in GDP was associated with a smaller share of the agricultural sector, indicating a probable NRC-like crowding out effect.

#### *4.1.2 Crowding out education and human capital*

In Gylfason's paper, oil capital has been blamed for crowding out other types of capital, including human capital (Gylfason, 2004). An oil windfall may reduce the government's willingness to spend on education since it may be perceived as a return on investment that will not be received in the near future. The case of Yemen, **Error! Reference source not found.** illustrates a similar conclusion and while Yemen is considered one of the top spenders on education at the international level ( as a percentage of GDP), the share of education expenditures has been decreasing steadily during the period for which data is available. This decrease in the share of education in public may imply a crowding-out effect in the sense of Gylfason.

#### *4.1.3 Crowding out saving, investment and physical capital*

As Gylfason (2004) points out, when easy funds from oil exports become available, both private and public pressure to save and invest may be reduced. To compare Yemen to other countries in saving of resource income and investment we have reproduced **Error! Reference source not found.** using Torvik (2009) after adding Yemen. The national saving rate is adjusted to reflect the fact that selling a non-renewable resource is just converting natural capital into financial capital and hence no extra income is generated and the wealth of the country is unchanged. The adjusted saving rate is calculated by subtracting resource income from the gross national saving that is reported in the national income accounts. The negative sign for Yemen in the table indicates an "overspending of resource income" where the country is consuming all its proceeds from the sale of the resource. This is also the case for those countries which are claimed to have suffered from the NRC. In addition, **Error! Reference source not found.** illustrates that while gross domestic investment has briefly increased during the period 1990-1998 it has leveled off thereafter, confirming the occurrence of NRC-like symptoms.

#### *4.1.4 Money, inflation, and crowding out financial capital*

On the monetary side, NRC symptoms are magnified if the abundance of oil leads to a negative effect on financial capital. This may occur if oil windfall diminishes the incentive to develop the country's financial sector. Gylfason (2004) uses financial depth and the inflation rate as measures of such impact. In the case of Yemen, **Error! Reference source not found.** shows that Yemen's financial depth proxied by the quantity of broad money (M2) as a percentage of GDP has been declining as oil exports have been increasing. This is an indication of a likely crowding out effect of natural capital on financial capital. In addition, Figure 18 shows that the inflation rate has increased with the increase in oil export revenues during the period 1994-1996, dropped in 1997 but remained relatively high thereafter. These developments in inflation rates are consistent with the NRC symptoms as found in the literature.

### **5. Rent Seeking and Crowding out Institutions and Social Capital**

The economic explanation of the NRC (the Dutch Disease) has been widely used and accepted in the literature. However, with respect to the relationship between the NRC and institutions there are different views. Some authors claim that natural resource abundance adversely affects the country institutions and governance. Others claim the opposite, that the occurrence of the NRC is a result of the existence of bad institutions.

With respect to institutional quality, Mehlum et al. (2006a), among many others, predict that the NRC is more prevalent in countries with bad institutions. In the case of Yemen, institutions are characterized by low quality making the country susceptible to the NRC symptoms. Table 3 is reproduced from a similar table in Kolstad and Søreide (2009) showing the correlation between natural resource abundance and institutional quality as measured by the degree of corruption control. The corruption index, published by The World Bank Institute, runs from -2.5 to +2.5 where higher numbers signify more control on corruption. With a value of -0.73, Yemen stands out to have the least control on corruption among the countries in the table. In addition, Yemen scored low in the Transparency International's Corruption Perception Index (CPI). The country ranked 146 among 180 countries (1 is best and 180 is worst). **Error! Reference source not found.** shows the worsening in the CPI score for Yemen as associated with the flow of funds from oil exports. From the year 2003, when CPI ranking for Yemen became available, to 2010 Yemen's rank has dropped from 88th to 146th.

With regard to the prevailing political system, recent contributions in the literature have shown close connections between constitutional design, political incentives, and the resource curse. Persson et al. (2000) show that constitutional design matters because it defines a country's institutional arrangements and the formal rules of the political game. Rules, in turn, translate into policies. Andersen and Aslaksen (2006) apply such analysis to the analysis of the NRC. They found that in presidential systems there is less rent seeking by politicians than in parliamentary systems. They however also found that in presidential systems there is a smaller public sector and public spending is usually targeted towards powerful minorities rather than broad spending programs. They concluded that the NRC is more rampant in democratic countries with presidential systems than with parliamentary systems, even though causal effects on the long run economic performance are less evident. If the conclusions by Andersen and Aslaksen hold, we may infer that the NRC is relevant to Yemen as it has a presidential system, and even though its public sector is not relatively small, public spending does get less targeted towards broad spending programs.

On the effect of rent seeking, Gylfason (2004) argues that the abundance of oil resources leads to a situation in which the government easily earns large funds without much effort. He then argues that the resulting abundant natural capital may lead to a crowding out of social capital (infrastructure and institutions of the society and its institutional structure including culture, cohesion, system of justice, rules and customs, and trust). To measure the quality of social capital he used measures of inequality and political liberties. These variables are measured using the inequality (GINI) index, and the political liberties (Freedom House) index respectively. The presence of the NRC should result in a worsening in these indexes. Yemen has scored 5 out of 10 in the Freedom House's Index of Political Rights (IPR) in 2010 (**Error! Reference source not found.**) and is hence considered "Not Free" (NF). This score has actually decreased from 6 out of 10 "Partially Free" (PF) in 1990 at which the multi-party system and the relatively free press was started.

As for the GINI inequality index, the available data (CIA World Factbook, 2011) indicate that income inequality in Yemen increased between 1998 and 2005, where the score of inequality rose from 33.4 to 37.7 (an index value of zero indicates perfect equality). We may therefore conclude, in general, that there have been indications that natural capital in Yemen has had a crowding-out effect on its social capital during the past 20 years. These results for Yemen are consistent with the findings of recent research, e.g. Arezki and Brückner (2011).

### ***5.1 The Crowding out effects of oil in Yemen: conclusion***

In the previous section, we have presented evidence that Yemen has in fact suffered from a number of the NRC symptoms associated with its oil wealth. Over the past 20 years, Yemen

went through many major changes that affected its development path. The discovery and production of oil was one of the landmarks in the country's history. In addition to the major effects of oil on Yemen's economy, the country's social and political structures were altered as a result of the new oil windfall. While one expects that the large funds from oil exports would enhance the country's economic growth and development, the evidence presented in the previous discussion points out to far from satisfactory contribution of oil in the country's development. In fact, the discovery and utilization of oil has been associated with poor economic performance during the last two decades. In short, Yemen has not been immune to the crowding-out symptoms of the NRC that are identified in the literature. It should be noted nevertheless, that while most of the NRC symptoms have appeared in the economy of Yemen during the oil era and the economy did not perform well, it is difficult to say, with confidence, in which direction the causation was. The country has had little to start with and even though oil discovery did not seem to contribute much, a legitimate question to ask is: what would have been the case in Yemen if oil was not discovered?

### ***5.2 Oil Resources and economic policies***

As we have seen, the debate on the effect of natural resources on the economy has been extensive and diverse. However, there is a wide agreement that the relevant policy question is how to make the best of natural resources, enhancing their positive contribution and limiting their pitfalls. As Elbadawi and Gelb (2010) put it "the curse is real but is not destiny" in the sense that occurrence and severity of the NRC are conditional on governance and policies. We have seen evidence that Yemen has escaped some of the NRC symptoms but was exposed to others. The negative impacts of oil-abundance however, could have been exacerbated or dampened by procyclical or countercyclical fiscal and monetary policies implemented by the Yemeni government. Frankel (2010) identifies government policies as a major factor for the existence of the NRC in oil-exporting countries. Therefore, our task in this section is to review relevant fiscal and monetary policies in Yemen during the two "oil decades" that began in 1990.

### ***5.3 The role of fiscal policy***

Fiscal policy has been shown to be a determining factor on the effect of oil abundance on growth and development as it determines the effects that oil price fluctuations may have on oil-exporting countries. In addition, while the oil sector lacks direct linkages with the rest of the economy, it has a strong externality through the government spending oil revenues. A number of authors have shown that fiscal policy in developing countries with abundant natural resources tends to be procyclical and more so in comparison with industrialized countries. Procyclicality is more relevant in government spending than in taxes because of the tax receipts endogeneity with respect to the business cycle (Frankel 2011b). Government procyclical spending behavior results from the temptation and political pressure to spend more during the booms, sometimes more than the increase in receipts from taxes or royalties. Then, when the oil market crashes, it becomes difficult for the government to reverse its action.

In an attempt to illustrate the role of government spending and political institutions in the growth of resource-rich countries, Arezki et al. (2011) show that overall government spending in a panel of up to 129 commodity-exporting countries has been procyclical. In addition, they found that resource windfalls crowd out non-resource GDP initially but then non-resource GDP increases as a result of the government fiscal expansion. Finally they concluded that resource windfalls have negative effects on non-resource sector GDP growth in the long run, but the effect is statistically insignificant when they control for government spending. The effect of resource windfalls on both macroeconomic stability and economic growth is moderated by the quality of political institutions. In addition, Villafuerte and Lopez-Murphy



(2010) presents a detailed analysis of the average fiscal policy responses of 31 oil producing countries to oil price cycles. They found that the non-oil primary balances of these countries worsened substantially during the reference period as a result of the increase in primary spending. They also found evidence that fiscal policy in these countries has been procyclical, resulting in exacerbation in the fluctuations of economic activity<sup>4</sup>.

Kaminsky (2004) lists Yemen among the group of countries with high positive correlation between government spending and GDP. The relationship between government budget in Yemen and oil prices is depicted in **Error! Reference source not found.** The figure shows the broad fiscal budget trends including government revenues and spending over the period 1990-2010 during which significant oil revenues were cashed in by the government. We can see that there was a large fiscal expansion in the boom years of 2004-2008 and a subsequent fiscal tightening in 2009, followed by another expansion in 2010. This expansion however was basically in the form of increases in primary spending, particularly current spending, with less of an increase in capital spending<sup>5</sup>. In addition, the figure shows a close relationship between international oil price and both government revenues and spending. As oil prices increased substantially starting 2000, government revenues increased as did expenditures. The increase in revenues was higher though, which created a small surplus in the budget that lasted through 2000-2001, but turned into deficit thereafter except for 2006.

In 2006, spending continued its upward trend as expected and started moving further away from the trend in oil price and revenues therefore creating a larger deficit. Government spending has overall been procyclical as it has been closely following oil price trends. The result of such expansionary fiscal policy was to increase the non-oil fiscal deficit to a record high of 46% of the GDP in 2008 (**Error! Reference source not found.**). In addition, **Error! Reference source not found.** shows that external debt has been increasing since the 1997 rescheduling by Paris Club, which substantially reduced the country's total debt. In the presence of the oil boom, this is another symptom of procyclical fiscal policy.

This trend in government expenditures is consistent with findings by Arezki and van der Ploeg (2007) who found this behavior prevalent in countries exporting minerals and energy resources. Furthermore, the government took another interesting path in its fiscal policy by increasing its reliance on oil revenues in place of domestic taxation. The latter stood at about 25% of total revenues in 2010, down from its peak of 68% in 1994 (**Error! Reference source not found.**).

Frankel (2010) indicates that it is often income inequality and populist political economy that are the deep fundamental forces underlying the observed fiscal policy procyclicality in oil-exporting countries like Yemen. Government expenditures have followed fluctuations in oil prices for two reasons. The first is that the government felt comfortable with higher spending during oil price hikes (2004-2008) as a result of the large oil revenue inflow, satisfying its appetite to spend, but was not able to substantially reduce spending as oil prices decreased. Second, international oil price fluctuations have had profound effects on the value of widespread fuel-related subsidies, on the size of the bill paid for Yemen imports of oil products, and on imports in general. As international oil prices increased, fuel subsidies as a share in government expenditures increased as well. **Error! Reference source not found.** shows the level of oil subsidies as a percentage of total government expenditures. The peak of subsidies in 2008 reflects the substantial increase of international oil prices in the

---

<sup>4</sup> Procyclical fiscal policies exist when spending rises excessively in booms and decreases in busts, thereby exacerbating the cycle, and running large fiscal deficits. On the other hand, countercyclical policies take advantage of resource booms to run a fiscal surplus (saving the surplus to mitigate next downturn in prices).

<sup>5</sup> The simple correlation between GDP and government expenditure is calculated to be close to +1 (0.992). This is an indication of a procyclical government spending.

same year. The subsequent decrease in the subsidies reflects both the decrease in oil prices and the increase in domestic prices of subsidized oil products approved by the government in 2010.

Using fuel subsidies, the government attempts to help the poor by fixing fuel prices at a very low rate therefore reducing the direct and indirect effects of fuel prices on the cost of living. **Error! Reference source not found.** and **Error! Reference source not found.** show the extent of fuel subsidies in Yemen and their share in the government expenditures, respectively. In 2010, petroleum subsidies accounted for more than 24% of total expenditures and more than 8 percent of GDP. In addition to the wasteful use associated with low energy prices and subsidies not reaching their target group (the poor), the subsidies led to a diversion of resources away from other more beneficial uses. Compared to the hefty fuel subsidies, only 15.5% of total expenditures is spent on education and less than 5% on health. In addition, the rising amount of funds allocated to the fuel subsidies came at the expense of the government infrastructure investment program which amounted to less than 13 percent of total spending in 2010, decreasing from its peak level of 17.7 percent in 2007 (Central Statistical Organization, 2011).

Historically, petroleum subsidies have always been criticized for their negative effects on government budgets as they “strain public finances, distort markets, and provide only a blunt tool in the fight against poverty” (Breisinger et al., 2011, p. 1). International experience shows that subsidies are not an efficient tool to reduce poverty. It has been shown that although subsidies are the most important safety net for the poor in Yemen, they are, for most part, captured by the high income group rather than the intended low income group (El-Katiri and Fattouh, 2011; The World Bank, 2005; The World Bank, 2010). It has also been observed that artificially low fuel prices in Yemen lead to corruption associated with smuggling and/or diverting fuels to neighboring markets with higher prices.

Upon realizing that the current levels of petroleum subsidies are both harmful and unsustainable, the government initiated a petroleum subsidy reform program by which it increased the price of fuels by about 25 percent in 2010. Prices of oil products were increased to reach 75 YR/liter for gasoline, and 50YR/liter for diesel, up from 60 YR and 35 YR respectively. Nevertheless, as oil prices continued to increase in 2010, the share of petroleum subsidies increased above its 2009 level.

The government spending trends suggest that it has failed to adopt medium-term, countercyclical fiscal policies to counter the volatile nature of its revenues as a result of oil price shocks. On the contrary, all evidence points to procyclical budget behavior that has resulted in volatile, short-run growth, long-term stagnation, and less than satisfactory economic and social development. Furthermore, government institutions responsible for management of public finances play a crucial role in enabling the government to develop sound fiscal policy and receive appropriate feedback from the stakeholders and general public therefore insuring government accountability. Both the quality of the budget procedures, especially those by the Ministry of Finance (MOF) and that of financial information dissemination are crucial for the effectiveness of fiscal measures. Legal procedures for the preparation and implementation of the government budget in Yemen are well-defined and quite comprehensive. However, the enforcement of these procedures is still weak which in turn reduces the efficiency of such procedures.

In recent years the MOF has greatly improved the implementation of procedures that generate and disseminate financial information. As a first step, the MOF made publicly available (on the MOF website) comprehensive and timely budget and fiscal reports. Additional steps are however required if the MOF is to become more transparent and effective. The 2008 survey of the Open Budget Initiative (OBI) ranked Yemen at the 69th position out of 85 countries

where it scored only 9 percent (out of 100). In 2010 however, Yemen's ranking increased where it scored 25% (compared to 0% in Iraq, 1% in Saudi Arabia and Algeria, 50% in Jordan, and 28% in Morocco). Such a low score shows that only scant information on the central government's budget and financial activities is made publicly available which results in reduced government accountability. The low score also reflects that it is difficult to track spending, revenue collection and borrowing throughout the year. **Error! Reference source not found.** summarizes OBI's assessment of Yemen's position on information disclosure.

In this regard, a report by USAID argues that "Like many poor governance countries, public financial information in Yemen is among the most prized currencies, procured and traded as among the most vital products for economic advancement. This is because financial information in Yemen, even if by law available to the public, is hoarded and guarded." (De la Torre 2008, p. 1). **Error! Reference source not found.** describes Yemen's budget practices which are clearly below international standards, as described in De la Torre (2008). The report concludes that the legislative basis for fiscal management in Yemen is fairly comprehensive, and the legislation in itself does meet or is close to meeting basic requirements. The MOF however falls short in meeting fundamental requirements to becoming a more effective organization. The report stresses that the framework for budget preparation, execution and reporting has improved in recent years but still does not meet the requirements in most areas (**Error! Reference source not found.**). In addition, although fiscal data is often available within the government, it is not systematically compiled and disseminated to the public.

#### ***5.4 Monetary policy and exchange rate regime***

Oil-exporting countries like Yemen are subject to inevitable cyclical variability due to volatility of the international oil markets. However, as is the case with fiscal policy, a carefully-designed and implemented countercyclical monetary policy by the Central Bank may play the role of a "cushion" which reduces the impact of such volatility. Procyclical monetary policy on the other hand may lead to the exacerbation of such an impact. Export commodity volatility is harmful for the economy because it makes consumption and investment less sustainable. In theory, this problem should be solved by borrowing during temporary downturns and repaying or accumulating net foreign assets during temporary upturns (Frankel, 2011b). In practice however, it does not always work this way. Capital flows are more often procyclical than they are countercyclical. That is, capital flows in during booms and flows out during dives.

Macroeconomic growth and stability in Yemen has always been affected by, aside from pronounced political instability, both domestic and international price movements. The most important aspect of oil export has been fluctuations in world prices of oil, as well as fluctuations in the foreign exchange values of the dollar. In addition to its dependence on oil exports, Yemen has a strong dependence on imports to satisfy most of the needs of its population. Therefore, its economy is vastly affected by exchange rate fluctuations, international commodity price movements and fluctuations of the international price of its major export commodity, crude oil. Hence, domestic price stabilization has been a central goal for the monetary policy of Yemen. To achieve its stabilization goals, the Central Bank of Yemen (CBY) has adopted a hybrid policy of targeting broad money and the exchange rate.

The CBY is the agency responsible for conducting Yemen's monetary policy. It is difficult, however, to trace any rule-based monetary policy in Yemen as the CBY conducts its monetary actions in a discretionary, ad-hoc, and reactive manner. The CBY controls money supply using relatively rigid interest rates that are changed only in response to severe market changes. An IMF paper describes the CBY policies as responding to inflation developments only after they occur (Chami et al. 2007).

Even though the CBY shows preference for price stabilization, informally targeting broad money, it “does not communicate its policy intentions, nor does it disclose its targets”(Chami et al. 2007, p. 3) and the low informational content of monetary aggregates limits their benefits in forming inflation expectations by the public. The paper proceeds to recommend a proactive, rule based policy, more flexible exchange rate and to continue the policy of free capital mobility. So far, the CBY has been, to some extent, successful in achieving its macroeconomic stabilization objectives through both controlling broad money supply and managing the exchange rate. The main instruments used are T-bills, reserve requirements, and direct intervention in the foreign exchange market.

A document presented by the government to the IMF in July 2010(IMF, 2010) indicates that the CBY is actually aware of the much needed improvements in its procedures in order to achieve stabilization objectives. The intended procedures for 2011 include: fiscal consolidation and reduction of central bank financing of the public budget; allowing for an increase of private credit through reasonable broad money growth; maintaining a close watch on excess liquidity in local currency; liberalizing interest rates within limits consistent with inflation and balance of payment developments, in an effort to encourage economic activity; allowing the exchange rate to adjust to fundamental shifts in the supply and demand for foreign exchange; smoothing over short-term volatility in the local currency (Rial) by providing sufficient foreign exchange to meet market needs; and finally creating additional monetary policy instrument by issuing Sukuk to diversify budget financing and attract funds from investors in securities that are compliant with Islamic finance principles.

The CBY’s monetary policy has succeeded in bringing down the chronic inflation rates that prevailed until mid-1990s. Targeting inflation through broad money and the exchange rate has, however, had less success in stabilizing price levels after 1997. Double-digit inflation rates continued during most of the following years despite the CBY interventions (**Error! Reference source not found.**). A number of explanations have been advanced for such limited success in controlling inflation. Blanchard (2004), for example, points out that in some cases an increase in the real interest in response to higher inflation leads to a real depreciation rather than a real appreciation. The real depreciation leads in turn to a further increase in inflation, making fiscal policy, not monetary policy, the right instrument to decrease inflation.

Mishkin and Schmidt (2001) describe five pillars of “full-fledged” inflation targeting as: absence of other nominal anchors, an institutional commitment to price stability, absence of fiscal dominance, policy instrument independence, and policy transparency and accountability, all of which are not present in Yemen. Almounsor (2010) shows that inflation in Yemen is driven by domestic demand, international price movements, and exchange rate depreciation (pass-through). He also indicates that money supply innovations do affect inflation in the short term but rather two years following CBY’s actions. Chami et al. (2007) points to the impact of exchange rate movements and the increasing instability of money demand which weakens the link between monetary aggregates and inflation, limiting the effectiveness of the CBY control of the latter<sup>6</sup>. While these arguments seem to be valid in explaining inflation in Yemen and the difficulties facing CBY in controlling its trend, some other important factors are overlooked. These include fiscal dominance and the lack of coordination between fiscal and monetary policies.

A plausible reason behind the low effectiveness of CBY’s monetary policies is that Yemen suffers from a chronic fiscal dominance in the sense that fiscal policy dominates CBY’s actions to control inflation. Sims (2005) shows that fiscal dominance is usually the combined

---

<sup>6</sup> Targeting monetary aggregates when money demand is unstable increases the risk of chasing a moving target. Several industrialized and emerging market countries have opted for inflation targeting regimes in recent years (Chami, et al. 2007).

result of a weak fiscal revenue base, an inefficient tax collection system, weak banking systems, and simple overspending. He then indicates that under such conditions, government fiscal difficulties are often resolved through high inflation that erodes the real value of government liabilities. In addition, as in many developing countries, CBY lacks independence and fiscal deficits are more or less automatically monetized in the sense of Quirk (1996). The desired effects of the actions taken by CBY are always offset by the MOF's spending behavior and there is a lack of coordination between the CBY's monetary policy and the government's fiscal policy. Frequently when the CBY, reacting to an increase in price levels or in anticipation for one, acts to tighten money supply and manage exchange rate, the expansionary spending policy of the MOF and financing the government by the CBY alienates the intended effects of the tight monetary policy on the domestic price levels.

On the exchange rate front, because Yemen imports most of its needs, expansionary fiscal policy translates into higher imports and hence higher demand for foreign currency. As a result, the local currency depreciates leading to higher prices for imports and eventually higher domestic inflation (pass-through effect). Recognizing the exchange rate pass-through to inflation, the CBY attempts to control inflation indirectly by supplying market needs of foreign currency using foreign currency open auctions. The CBY, acts clearly to insure a stable exchange rate for the Rial against the U.S. dollar and to keep it within an unannounced margin. Another tool the CBY uses to control inflation is absorbing excessive liquidity through the sale of high-yielding T-bills.

These CBY exchange rate policies have proven successful in preventing large depreciations in the local currency and hence preventing the associated high inflation rates. Both policies have however, proven to be increasingly unsustainable for a number of reasons. First, tightening money supply through the issuance of T-bills has resulted in crowding out private sector credit and investment, increasing unemployment and hampering economic growth. Second, oil exports have provided the CBY with the necessary foreign exchange to manage the exchange rate plus accumulate foreign reserves. However, as oil production declines—and with it foreign exchange receipts—the CBY's tightly managed float of the nominal rate will become more difficult to sustain and greater flexibility will be needed such that the nominal rate responds to shifts in both internal and external equilibriums (Chami et al. 2007). The direct intervention in the foreign exchange market has resulted in draining foreign exchange reserves especially in the recent years when major interventions were required to defend the Rial (**Error! Reference source not found.**). Third, maintaining a tightly managed float led to an overvaluation of the real effective exchange rate (**Error! Reference source not found.**). While the CBY has been relatively successful in preventing large dives in the nominal exchange rate in response to internal and external shocks, the resulting appreciation of the real effective exchange rate of the local currency reduces the country's competitiveness.

An alternative method to inflation targeting, and in the context of small price-taking commodity exporters like Yemen, has been proposed by Frankel (2011b) who poses the question of which appropriate exchange rate policy should be followed by such countries. He points out that there are three candidate monetary policy anchors: exchange rate pegs, orthodox inflation (CPI) targeting, and a new target, proposed by Frankel himself, which he calls "Peg the Export Price" (PEP). In the PEP regime, monetary policy is committed to fixing the local-currency price of the export commodity, by announcing and defending a daily exchange rate against the dollar that varies perfectly with the dollar price of the commodity in question in world markets. Frankel's proposed PEP is expected to simultaneously deliver the floating exchange rate effect by providing an automatic accommodation to terms of trade shocks, and the dollar peg effect by retaining the credibility-enhancing advantages of a nominal anchor. Hence, PEP target is hypothesized to generally do a better job of stabilizing

the real domestic prices of tradable goods than does a CPI target. Unlike CPI targeting, PEP targeting would appreciate the country's currency when the world price of its commodity exports increase and depreciate it when it decreases. The CPI on the other hand causes the opposite result.

### ***5.5 Oil resources and economic policies: Conclusion***

There is a wide agreement that the relevant policy question regarding oil is how to make the best of it, enhancing its positive contribution and limiting its pitfalls. The NRC occurrence and severity are partially conditional on governance and policies. Government policies are a major factor for the existence of the NRC in oil-exporting countries.

We have seen evidence that Yemen has escaped some of the NRC symptoms and was exposed to many others. The positive impacts of oil-abundance might have been realized using appropriate fiscal and monetary policies. However, the prevalent fiscal and monetary policies in Yemen during the two oil decades starting 1990 have been procyclical, exacerbating the undesirable effects of the NRC and reducing the positive effects of the oil windfall. Furthermore, the current policies have proven to be unsustainable. The fiscal dominance and the lack of coordination between fiscal and monetary policies have restricted the CBY ability to (informally) target the inflation and exchange rates, and targeting money aggregates have crowded out private investment, leading to more oil-dependence and less diversification. Therefore, the CBY and MOF may have to rethink their positions by more coordination, and introducing restraint to the current fiscal expansion and monetization of the fiscal deficit through the CBY.

### ***5.6 Oil and conflict in Yemen***

While there is agreement among authors on the direct negative impact of resources on the economy, there is less agreement on why this negative impact occurs. This is because while there is strong evidence on the average impact of the NRC across countries, a deeper explanation that goes beyond economic factors is needed. One explanation falls under the "political economy" area. The literature on the interplay between natural resources, their associated rent and the political economy is voluminous. A common perception in the literature has formed that "natural resources provide both motive and opportunity for conflict and create indirect institutional and economic causes of instability" (Basedau and Lay 2009, p. 757). In this regard, the common belief amongst political economists is that extremely high rents derived from oil extraction are associated with worsening state management and ultimately the occurrence of conflicts because when the government controls oil proceeds, it abuses such proceeds (Ross 1999).

We have seen how natural resource abundance and procyclical policies in Yemen crowd out a number of the economy's productive sectors and result in poor economic performance. But above all, there is evidence that political conflicts and unrest common in Yemen may be linked to oil as well. The discovery and utilization of oil in Yemen occurred at a time were the inflow of worker remittance into the country was diminishing and the newly-born state was trying to form itself as a stable and prosperous country after a long history of conflict and dismay. The country however has been plagued with political and military conflicts since the inception of unity between the two former Yemens in 1990. Although no explicit reference has been advanced which points to oil as a cause for such conflicts, oil wealth has been indicated as being behind the recent separatists' movement in the south. Observers agree on the need to reform the political system in Yemen allowing for more participation and accountability in order to reduce conflicts. Yemen currently has an open multi-party political system but such system was not able to prevent oil resource abuse. In fact, Collier and Hoeffler (2005) point out that this is the case in most developing countries where the

combination of high natural resource rents and open democratic systems has resulted in abuse and diminished growth.

A significant problem faced by Yemen is that of the increasing power of the central government, which encompasses the president and ruling party. Perhaps the most representative statement we found to describe the current situation in Yemen reads: “Some consider that Yemen suffers from ‘state capture’, a term coined by The World Bank researchers to describe a situation where private interests seize the state and maintain a grip on power through pervasive corruption” (Chatham House 2010, p.5). An interesting paper by Basedau and Lay (2009) uses the theory of the rentier state which points at economic stagnation, corruption and authoritarianism as being features inherent to rentier economies. In such case, “governments use abundant resources to buy off opposition or suppress armed rebellion, thereby contributing to political stability and preventing armed conflict” (Basedau and Lay 2009, p. 358). The result of such a purchase is that rentier states tend to be politically more stable.

The Yemeni government has been known to follow this path, but because the pool of funds available for such transfers has historically been limited, only a handful of elite groups and lobbies have been able to benefit from government transfers. The majority of the population was deprived from the promised benefits of the new wealth, a fact which has created an environment of discontent and conflict. Unlike other oil-rich, less populous countries, the government of Yemen was not able to buy off the satisfaction of the majority. The relatively limited oil revenues were not able to enhance the living standards of the people and hence increase the legitimacy of the government.

## **6. Conclusion**

The relationship between natural resources and economic growth, and the notion of the natural resource curse, has been studied extensively in growth literature. The majority of evidence on the existence of the NRC in resource-rich countries has been based on empirical findings comparing growth paths of a group of resource-rich countries to that of a group of resource-poor countries. Such evidence suggests that major distortions may result from oil export booms in the economies of oil-abundant countries because the oil sector dominates economic activities and the economy becomes less diversified.

The traditional approach in analyzing the NRC fell short of explaining the apparent difference in the individual development experience among resource-abundant countries. The fact is, some of these countries escaped the NRC while many others did not. Therefore, there has in recent years been a shift in the focus of the NRC literature from investigating the economic effects of resources averaged over several countries, to investigating the NRC at the individual country level. Following this new approach, we have in the previous few pages attempted to analyze the experience of Yemen as an oil and gas exporter for the last 20 years. In light of the analysis carried out in the previous sections, research findings can be summarized as follows:

There is evidence that the discovery and export of oil in Yemen has in fact been associated with a number of NRC-like symptoms as described in the literature. The country’s economic, social and political structures were altered as a result of the new oil windfall.

Evidence shows that despite the positive contribution of oil in the country’s economic growth, development performance during the oil era was far from satisfactory. In fact, the discovery and utilization of oil has been associated with poor development performance during the last two decades.

It is difficult to identify a single cause for such poor performance. Rather, a host of factors may be identified as contributing to such an outcome. Overall, dependency on oil

revenues has most likely resulted in the deterioration of institutions and performance of other productive sectors in the economy.

Government procyclical policies have been instrumental in exacerbating the unfavorable effects of oil on the economy, and reducing its potential positive contribution.

There is evidence that the political economy (rent-seeking) of oil has prevented the development of quality institutions. Poor institutions have in turn led to the mismanagement of oil wealth and both effects have resulted in political instability and conflict.

Given the above findings, the government of Yemen may be able to reduce the NRC and other negative symptoms in its economy through carefully designed countercyclical, rule-based, economic policies and by increasing transparency and the role of institutions in managing oil wealth.



## References

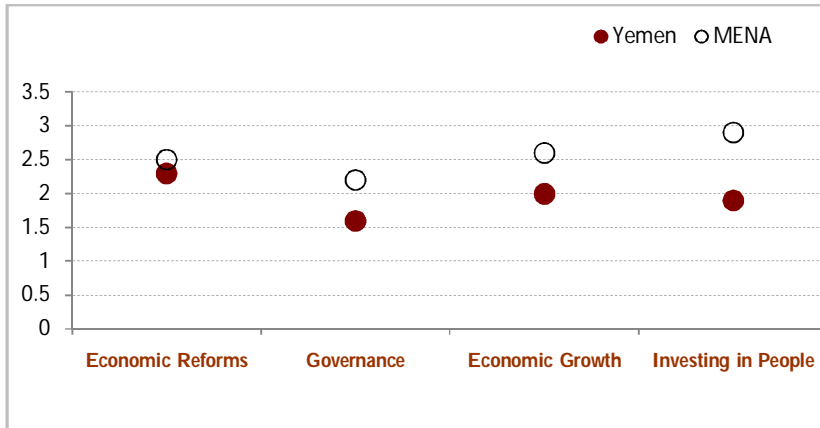
- Abdih, Y., R. Chami, J. Dagher, and P. Montiel. 2008. Remittances and institutions: Are remittances a curse? *IMF Working Paper WP/08/29*. Washington: International Monetary Fund.
- Alexeev, M., and R. Conrad. 2005. The elusive curse of oil. Terry Sanford Institute of Public Policy and Department of Economics, *Duke University, Working Papers Series SAN05-07*.
- Almounsor, A. 2010. Inflation dynamics in Yemen: An empirical analysis. *IMF Working Paper WP/10/144*. Washington: International Monetary Fund.
- Andersen, J. J., and S. Aslaksen. 2006. Constitutions and the resource curse. Department of Economics, *Norwegian University of Science and Technology, Working Paper No. 11/2006*.
- Arezki, R., K. Hamilton, and K. Kazimov. 2011. Resource windfalls, macroeconomic stability and growth: The role of political institutions. *IMF Working Paper WP/11/142*. Washington: International Monetary Fund.
- Arezki, R., and M. Brückner. 2011. Oil rents, corruption, and state stability: Evidence from panel data regressions. *University of Adelaide, School of Economics Research Paper No. 2011-07*, January 2011.
- Arezki, R., and F. van der Ploeg. 2007. Can the natural resource curse be turned into a blessing? The role of trade policies and institutions. *IMF Working Paper WP/07/55*. Washington: International Monetary Fund.
- Auty, R. M. 2001. The political economy of resource-driven growth. *European Economic Review* 45(4-6): 839–46.
- Auty, R.M. 1993. *Sustaining development in mineral economics: The resource curse thesis*. London: Routledge.
- Basedau, M., and J. Lay. 2009. Resource curse or rentier peace? The ambiguous effects of oil wealth and oil dependence on violent conflict. *Journal of Peace Research* 46 (6): 757-76.
- Blanchard, O. 2004. Fiscal dominance and inflation targeting: Lessons from Brazil. *NBER Working Paper No. 10389*.
- Boyce, J., and J. Emery. 2005. A hotelling explanation of “the curse of natural resources”. *University of Calgary, Department of Economics Discussion Paper 2005-06*, April.
- BP, 2011. *Statistical Review of World Energy*, London: British Petroleum Company.
- Braütigam, D., and S. Knack. 2004. Foreign aid, institutions and governance in Sub-Saharan Africa. *Economic Development and Cultural Change* 52(2): 255–86.
- Breisinger, C., W. Engelke, and O. Ecker. 2011. Petroleum subsidies in Yemen: Leveraging reform for development. *International Food Policy Research Institute Discussion Paper No. 01071*.
- Cappelen, Å., and L. Mjøset. 2009. Can Norway be a role model for natural resource abundant countries? *The World Institute for Development Economics Research (WIDER), Research Paper No. 2009/23*.
- CBY, *Annual Report*, Sana'a: Central Bank of Yemen.
- Central Intelligence Agency (CIA). 2011. *CIA World Factbook 2011*. Washington D.C.

- Central Statistical Organization.2011.*Annual Statistical Yearbook 2010*.Sana'a, Republic of Yemen.
- Chami, S., S. Elekdag, T. Schneider, and N. Ben Ltaifa. 2007. Can a rule-based monetary policy framework work in a developing country? The case of Yemen.*IMF Working Paper* WP/07/6.Washington: International Monetary Fund.
- Chami, R., C. Fullenkamp, and S. Jahjah. 2003. Are immigrant remittance flows a source of capital for development? *IMF Working Papers* 03/189.Washington: International Monetary Fund.
- Chami, R., T.F. Cosimano, and M.Gapen. 2006. Beware of emigrants bearing gifts: Optimal fiscal and monetary policy in the presence of remittances.*IMF Working Papers* 06/61, Washington: International Monetary Fund.
- Chami, S., T. Schneider, F. Ahmed, and N. Ben Ltaifa.2007. Yemen: Exchange rate policy in the face of dwindling oil exports.*IMF Working Paper* WP/07/5.Washington: International Monetary Fund.
- Chatham House.2010. Accountability and political inclusion in Yemen. *Middle East and North Africa Program Workshop Summary*, November 2010.
- Collier, P., and A.Hoeffler.2005. Democracy and resource rents.*Oxford Economics Paper* No.GPRG-WPS-016.University of Oxford.
- De la Torre, C. 2008. Enhancing government effectiveness in Yemen: An assessment of the Ministry Of Finance. *A report prepared for the United States Agency for International Development (USAID)*.
- Djankov, S.,J. G. Montalvo, and M. Reynal-Querol.2008. The curse of aid. *Journal of Economic Growth* (Springer) 13 (3): 169–94.
- Elbadawi, I., and A. Gelb.2010. Oil, economic diversification and development in the Arab World.*ERF Economic Policy Research Report No. 35*, December.
- El-Katiri, L., and B.Fattouh. 2011. Energy poverty in the Arab World: The case of Yemen. *A report prepared for the Arab Energy Club* (Beirut, Lebanon), August 2011.
- Frankel, J.A. 2010. The natural resource curse: A survey. *Discussion Paper* 2010-21, Cambridge, Mass: *Harvard Environmental Economics Program*.
- Frankel, J. A. 2011a. A comparison of product price targeting and other monetary anchor options, for commodity exporters in Latin America. *Harvard Kennedy School Faculty Research Working Paper Series No. RWP11-027*.
- Frankel, J., 2011b, “How Can Commodity Exporters Make Fiscal and Monetary Policy Less Pro-cyclical?” in *Beyond the Curse: Policies to Harness the Power of Natural Resources*, ed. by R. Arezki, T. Gylfason, and A. Sy, International Monetary Fund.
- Freedom House, 2011.*Freedom in the World: The Authoritarian Challenge to Democracy*. Washington: Freedom House.
- Gylfason, T. 2001. Natural resources, education, and economic development. *European Economic Review* 45(4-6): 847–59.
- Gylfason, T. 2004. Natural resources and economic growth: From dependence to diversification. CEPR Discussion Paper no. 4804.London: Centre for Economic Policy Research.

- IMF, 2010. *Republic of Yemen: Letter of intent, memorandum of economic and financial policies, and technical memorandum of understanding*. Washington: International Monetary Fund.
- IMF, 2011. *Regional Economic Outlook: Middle East and Central Asia*, Washington: International Monetary Fund, April 2011.
- International Budget Partnership, 2010. *Open Budget Survey*. Washington: International Budget Partnership.
- Kaminsky, G., C. Reinhart, and C. Vegh. 2004. When it rains, it pours: Procyclical capital flows and macroeconomic policies. *NBER Macroeconomics Annual* 2004(19):11–82.
- Kolstad, I., and T. Søreide. 2009. Corruption in natural resource management: Implications for policy makers. *Resources Policy* 34: 214–26.
- Looney, R. E. 1990. Worker remittances in the Arab World: Blessing or burden? *The Jerusalem Journal of International Relations* 12(2): 28–48.
- Mähler, A. 2010. Nigeria: A prime example of the resource curse? Revisiting the oil-violence link in the Niger delta. German Institute of Global and Area Studies, Working Paper No. WP 120/2010.
- McClelland, D. H. 1980. Some major aspects of the economy of Yemen Arab Republic. Agency for International Development Report, Washington, D.C., March 1980.
- Mehlum, H., K. Moene and R. Torvik. 2006a. Cursed by Resources or Institutions? *The World Economy* 29 (8): 1117–31.
- Mehlum, H., K. Moene and R. Torvik. 2006b. Institutions and the resource curse. *The Economic Journal* 116: 1–20.
- Mishkin, F., and K. Schmidt-Hebbel. 2001. One decade of inflation targeting in the world: What do we know and what do we need to know? NBER Working Paper 8397.
- MOF. *Quarterly Financial Bulletin*. Sana'a, Yemen: Ministry of Finance.
- Mohamed, S. E. and M. G. Sidiropoulos. 2010. Does workers' remittances affect growth: evidence from seven MENA labor exporting countries. *International Research Journal of Finance and Economics* 46: 181–94.
- Neary, P., and S. van Wijnbergen. 1985. Natural resources and the macroeconomy: A theoretical framework. University College Dublin (UCD), Centre for Economic Research Working Paper Series No. 36.
- Obi, C. 2010. Oil as the 'curse' of conflict in Africa: Peering through the smoke and mirrors. *Review of African Political Economy* 37: 483–95.
- Persson, T., G. Roland, and G. Tabellini. 2000. Comparative politics and public finance. *Journal of Political Economy* 108: 1121–41.
- Quirk, P. J. 1996. Exchange rate regimes as inflation anchors. *Finance and Development* 1996(March): 42–45.
- Ross, M. L. 1999. The political economy of the resource course. *World Politics* (51): 297–322.
- Ross, M. L. 2001. Does oil hinder democracy? *World Politics* 53: 325–61.
- Rosser, A. 2007. Escaping the resource curse: The case of Indonesia. *Journal of Contemporary Asia* 37(1): 38–58.

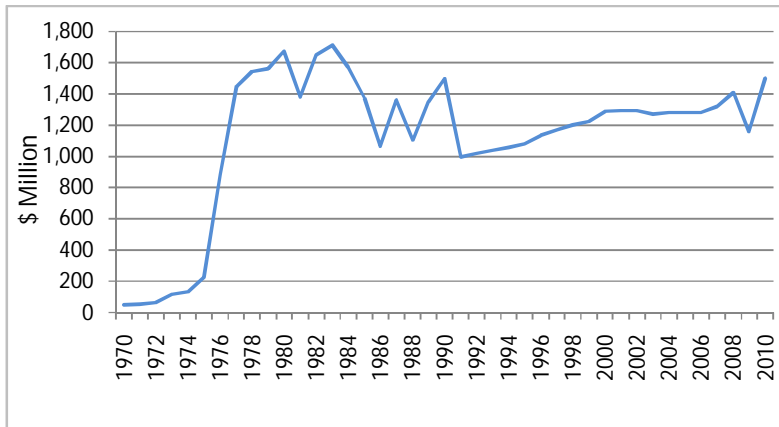
- Sachs, J. D., and A. M. Warner.1999. The big push, natural resource booms and growth. *Journal of Development Economics* 59: 43–76.
- Sachs, J. D., and A. M. Warner.2001. The curse of natural resources. *European Economic Review* 45: 827–38.
- Sala-i-Martin, X., and A. Subramanian. 2003.Addressing the natural resource curse: An illustration from Nigeria.IMF Working Paper No. WP/03/139.Washington: International Monetary Fund.
- Sims, C. 2005. Limits to inflation targeting. In *The inflation targeting debate*, ed. B. Bernanke and M. Woodford. Chicago: University of Chicago Press.
- Smith, K., and L. Poole.2011. *Yemen aid factsheet 1995-2009: Trends in overseas development assistance*. Keward Court, UK: Global Humanitarian Assistance.
- Tadjoeddin, M. Z. 2007. A future resource curse in Indonesia: The political economy of natural resources, conflict and development. Centre for Research on Inequality, Human Security and Ethnicity (CRISE), Working Paper No. 35.
- Torvik, R. 2009. Why do some resource-abundant countries succeed while others do not? *Oxford Review of Economic Policy* 25: 241–56.
- Transparency International, 2011.*Corruption Perception Index*. Berlin: Transparency International.
- U.S. EIA, 2010.*International Energy Statistics*. Washington: United States Energy Information Administration.
- U.S. EIA, 2011.Country Analysis Briefs: Yemen., Washington: United States Energy Information Administration.
- USAID.2011. *Yemen Gap Analysis*. Strategic Planning & Analysis Division, E&E Bureau, Washington: United States Agency for International Development.
- Villafuerte, M., and P. Lopez-Murphy.2010. Fiscal policy in oil producing countries during the recent oil price cycle.IMF Working Paper WP/10/28.Washington: International Monetary Fund.
- The World Bank.2002. *Economic growth in the Republic of Yemen: Sources, constraints, and potentials*. A World Bank Country Study.
- The World Bank. 2005. Household energy supply and use in Yemen. Vol.I, Main Report, No. 315/05.
- The World Bank.2006. Yemen development policy review. Social and Economic Development Sector Unit, Middle East and North Africa Region, Report No. 35393-RY.
- The World Bank. 2010. Analysis of the scope of energy subsidies and suggestions for the G-20 initiative. IEA, OPEC, OECD, and The World Bank joint report prepared for submission to the G-20 Summit Meeting, Toronto (Canada), 26-27 June 2010.
- The World Bank.2011a. *Migration and Remittances Factbook 2011*.Second Edition.
- The World Bank, 2011b.*World Development Indicators*, Washington: The World Bank.

**Figure 1: Yemen Development Profile (2009-2010)**



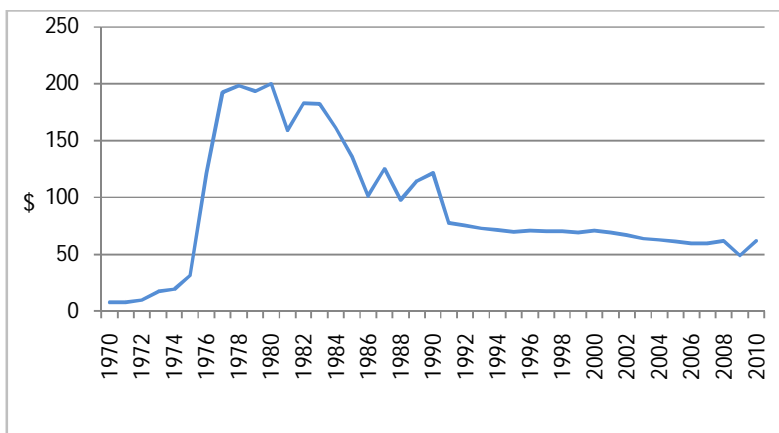
Notes: Based on a 1 to 5 scale, with 5 representing most advanced worldwide.  
 Source: Adopted from USAID (2011).

**Figure 2: Worker Remittances into Yemen (1970-2010)**



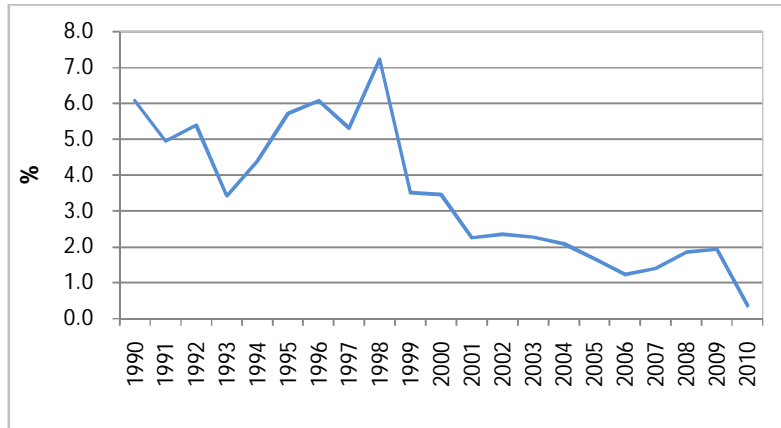
Notes: Data prior to 1990 are the sum for both Yemens  
 Source of Data: The World Bank (2011b) and Loonely (1990 )

**Figure 3: Per Capita Remittances (1970-2010)**



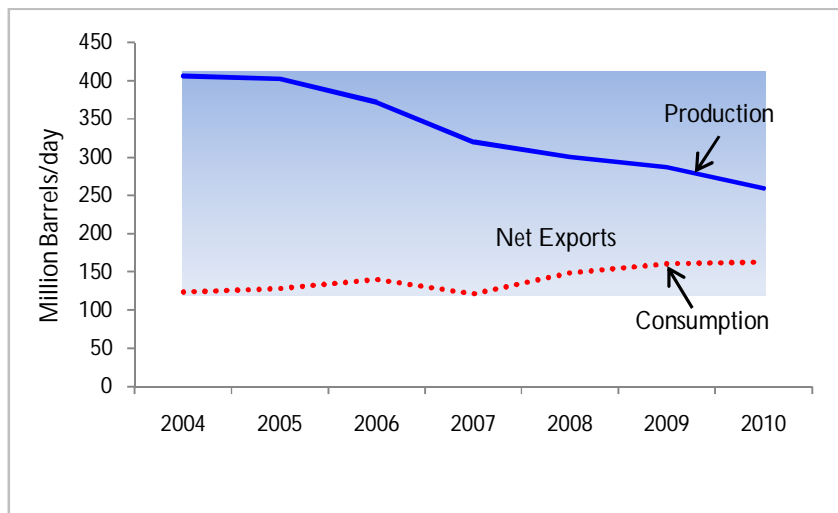
Notes: Data prior to 1990 are the sum for both Yemens  
 Source of Data: The World Bank (2011a) and Loonely (1990 )

**Figure 4: Foreign Aid to Yemen as a Percentage of GDP (1990-2010)**



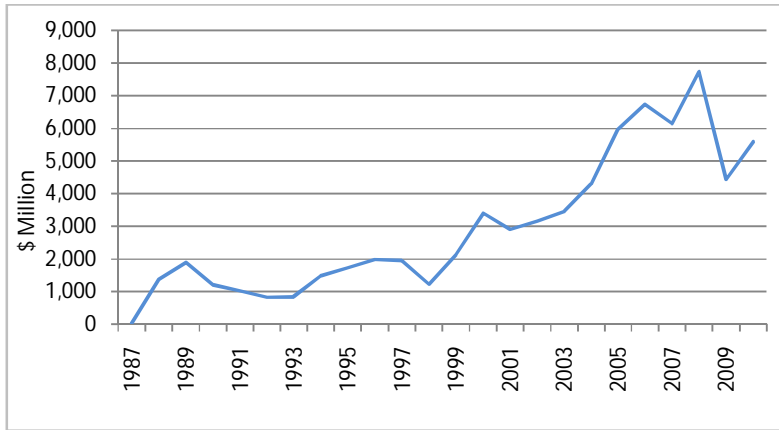
Source of Data: IMF (2011); The World Bank (2011b); Smith and Poole, 2011.

**Figure 5: Yemen Crude Oil Production and Consumption (2004-2010)**



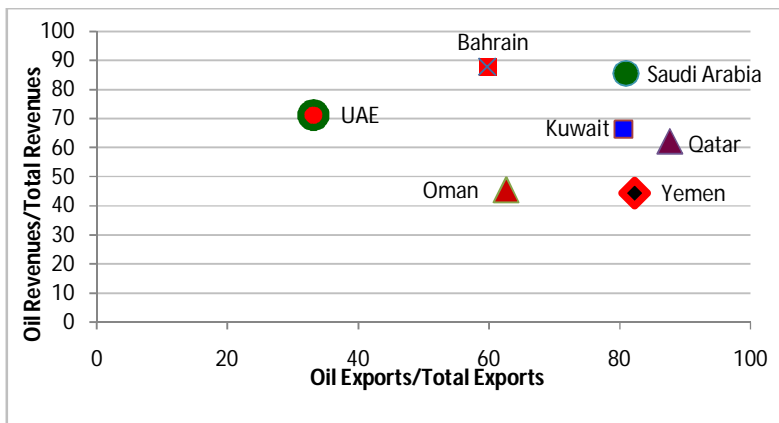
Source: U.S. EIA, 2011

**Figure 6: Yemen Oil Revenues (1987-2010)**



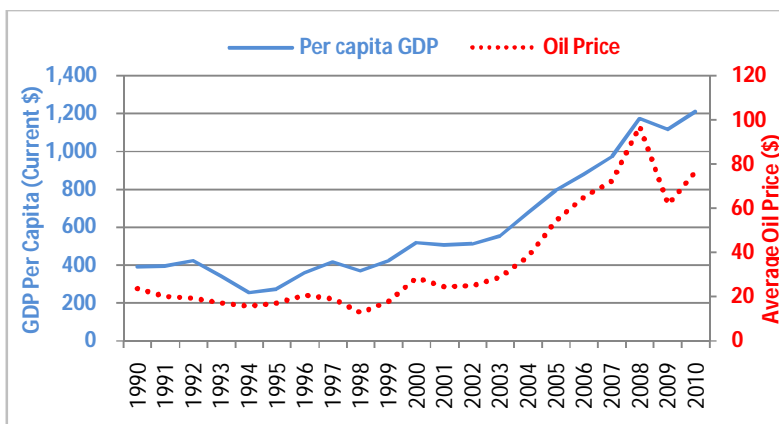
Source of Data: CBY, different issues

**Figure 7: Yemen and GCC: Oil Dependency (2010)**



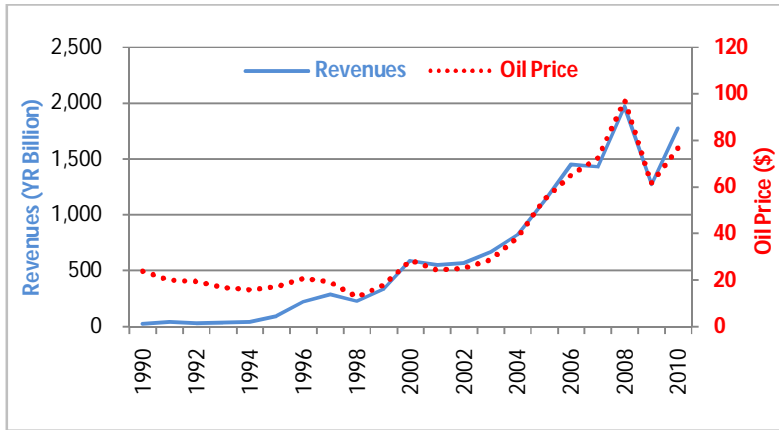
Source of data: IMF (2011) and U.S. EIA, 2010.

**Figure 8: Yemen Per Capita GDP and International Oil Prices (1990-2010)**



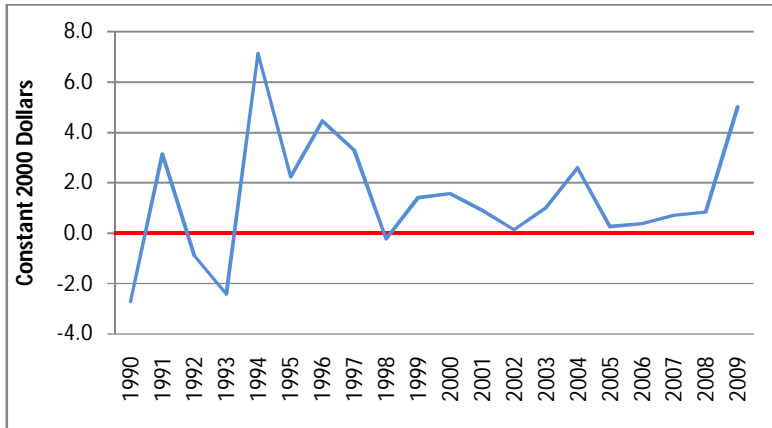
Source of data: The World Bank (2011b) and U.S. EIA, 2010

**Figure 9: Government Revenues and International Oil Prices (1990-2010)**



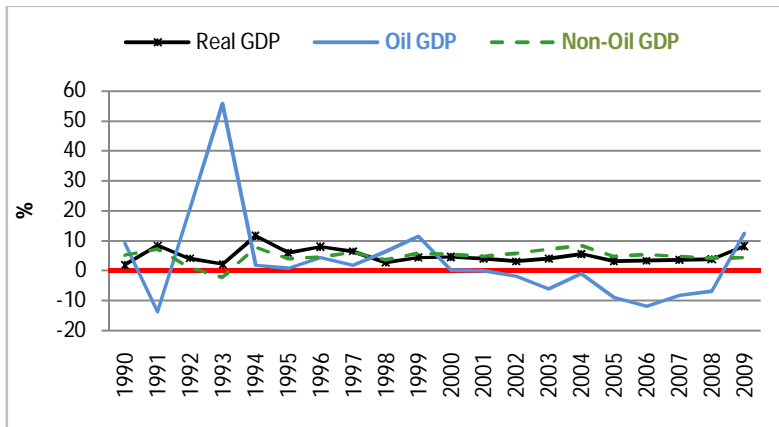
Source of data: MOF, different issues and U.S. EIA, 2010

**Figure 10: Real GDP Per Capita Growth (1990-2010)**



Data source: The World Bank, 2011b

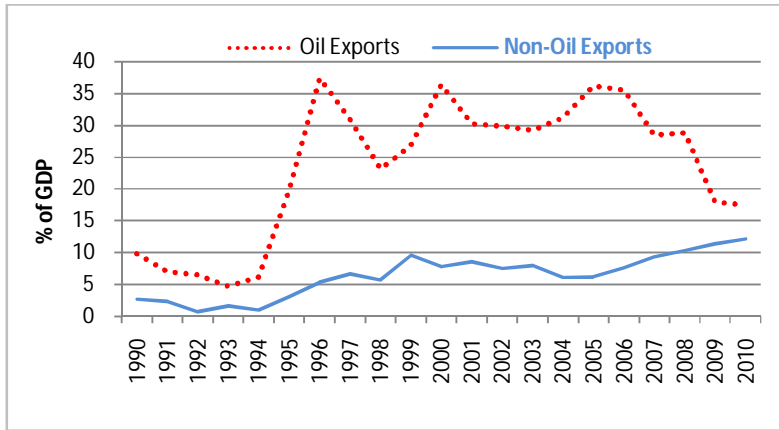
**Figure 11: Real GDP Growth Rates (1990-2009)**



Source of Data: IMF, 2010; The World Bank, 2011b; Central Statistics Organization, 2011.

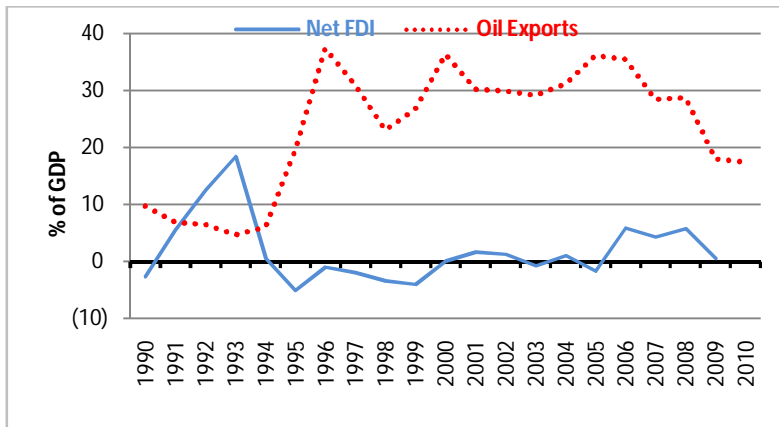


**Figure 12: Oil and Non-Oil Exports (1990-2010)**



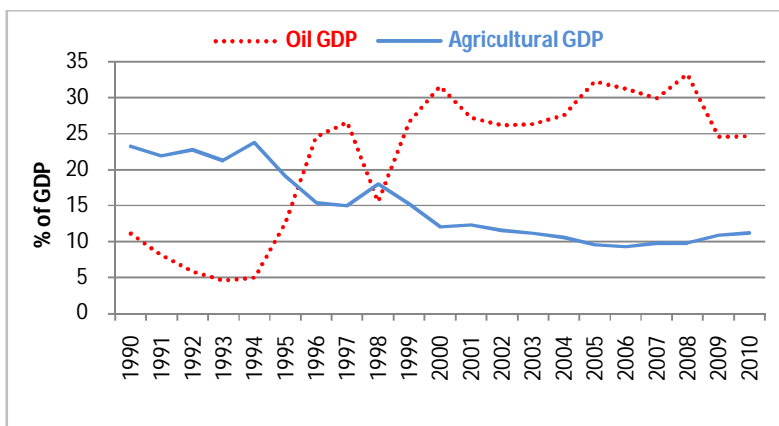
Source of Data: IMF, 2010 and The World Bank, 2011b.

**Figure 13: Net FDI and Oil Exports (1990-2010)**



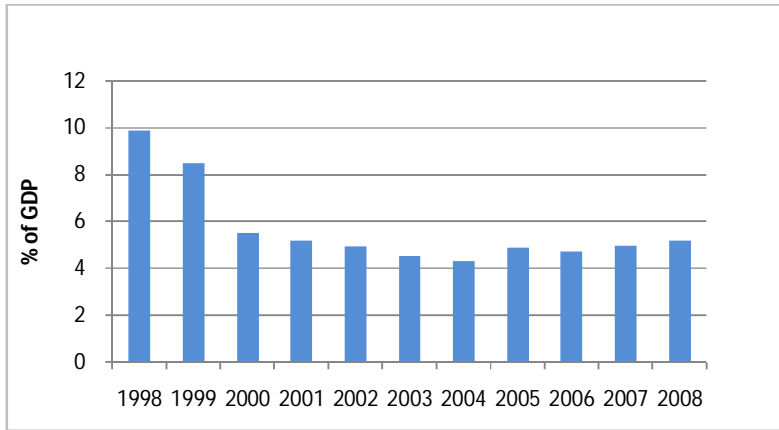
Source of Data: IMF, 2010 and The World Bank, 2011b.

**Figure 14: Oil GDP and Agricultural GDP (1990-2010)**



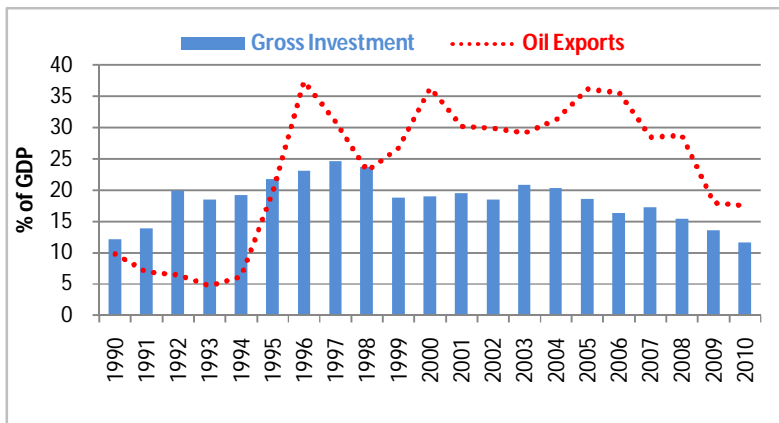
Source of Data: IMF, 2010; The World Bank, 2011b; Central Statistics Organization, 2011.

**Figure 15: Spending on Education (1998-2008)**



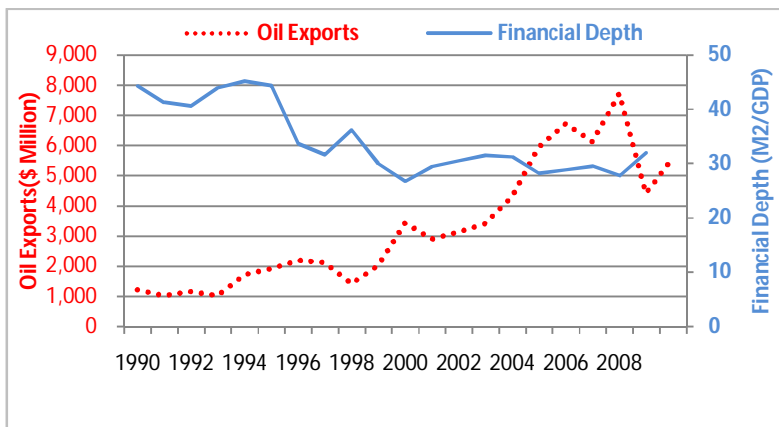
Source of Data: MOF, different issues and IMF(2010).

**Figure 16: Oil Exports and Gross Investment (1990-2010)**



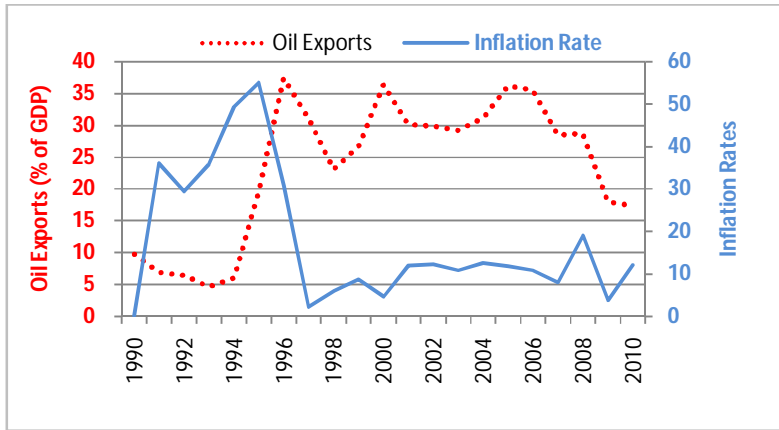
Source of data: IMF, 2010.

**Figure 17: Oil Exports and Financial Depth (1990-2009)**



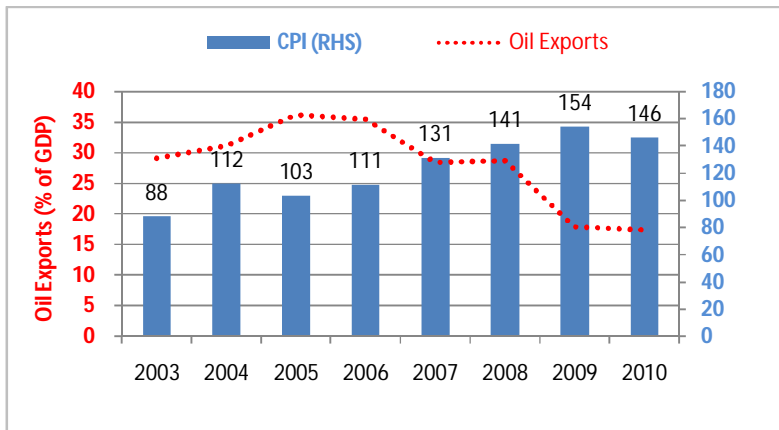
Source of data: IMF, 2010 and CBY, different issues.

**Figure 18: Oil Exports and Inflation Rates (1990-2010)**



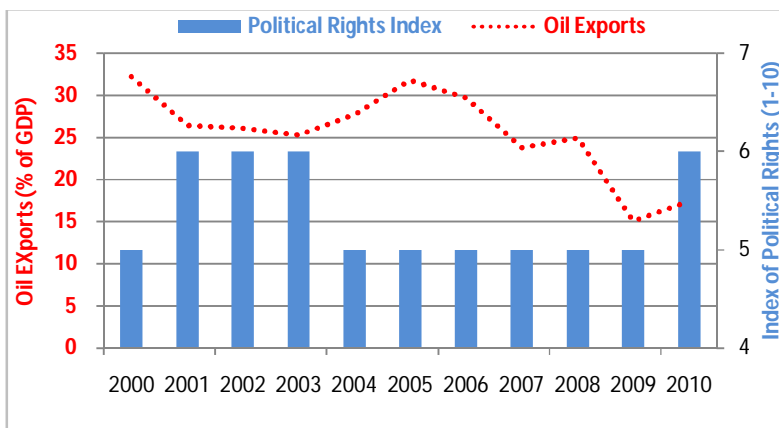
Source of Data: IMF, 2010.

**Figure 19: Yemen Oil Exports and Corruption Perception Index (CPI)**



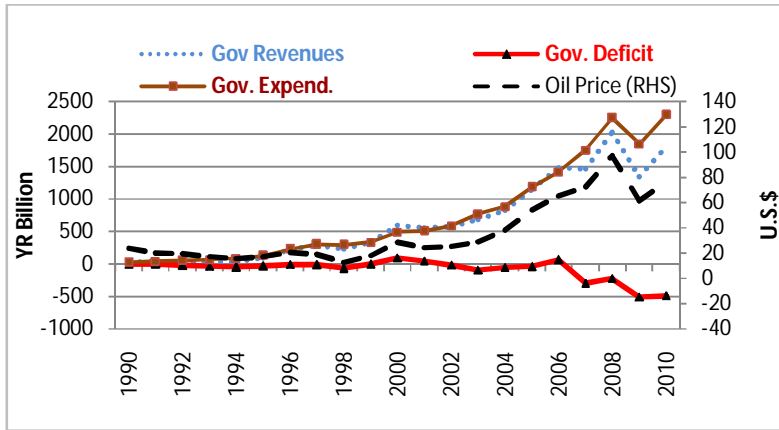
Source of Data: Transparency International, 2011 and IMF, 2010

**Figure 20: Yemen Oil Exports and IPR (2000-2010)**



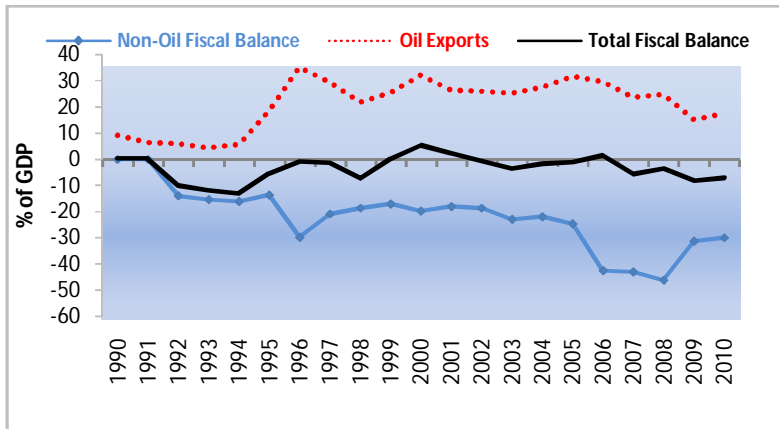
Source: Freedom House, 2011 and IMF, 2010.

**Figure 21: Government Budget and International Oil Prices (1990-2010)**



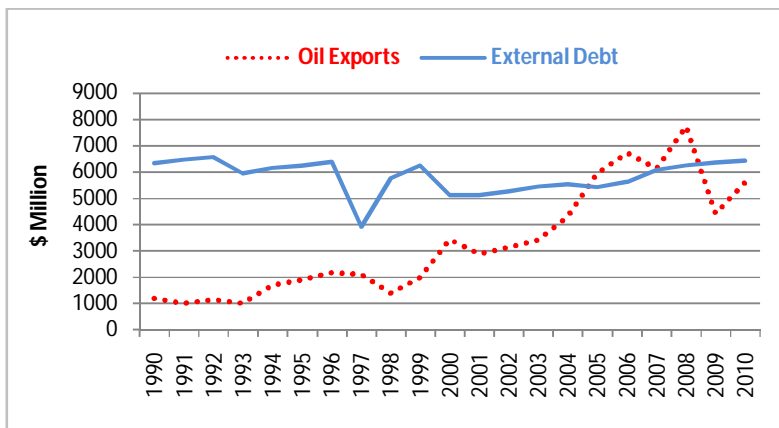
Source of Data: MOF, different issues and BP, 2011.

**Figure 22: Oil Exports and Non-Oil Fiscal Balance (1990-2010)**



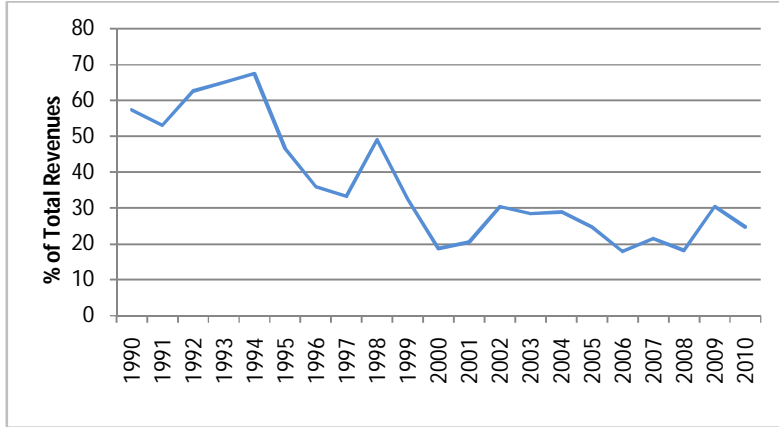
Source of Data: IMF, 2010.

**Figure 23: Yemen External Debt (1990-2010)**



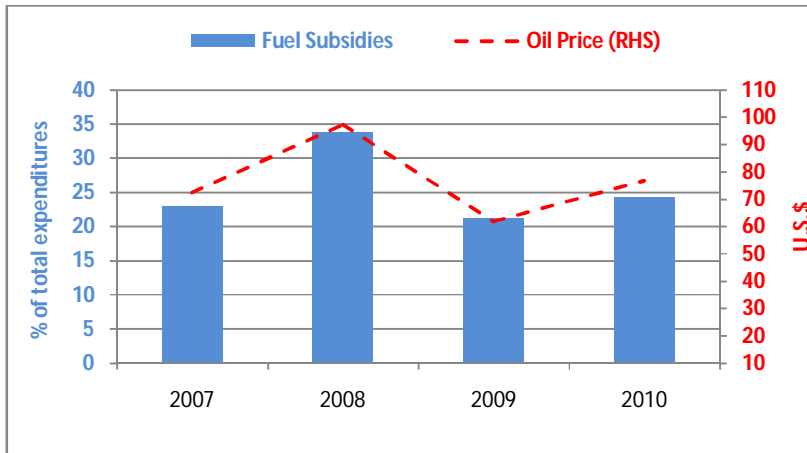
Source of Data: CBY, different issues and IMF, 2010.

**Figure 24: Yemen Government Tax Revenues (1990-2010)**



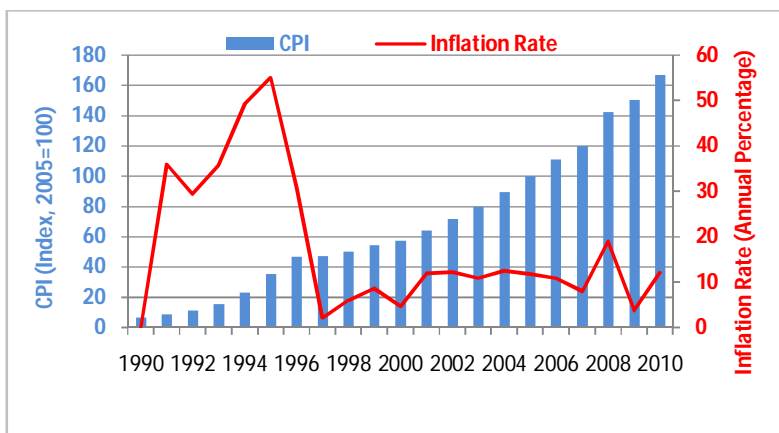
Source of Data: MOF, different issues.

**Figure 25: Fuel Subsidies in Yemen and International Oil Price (2007-2010)**



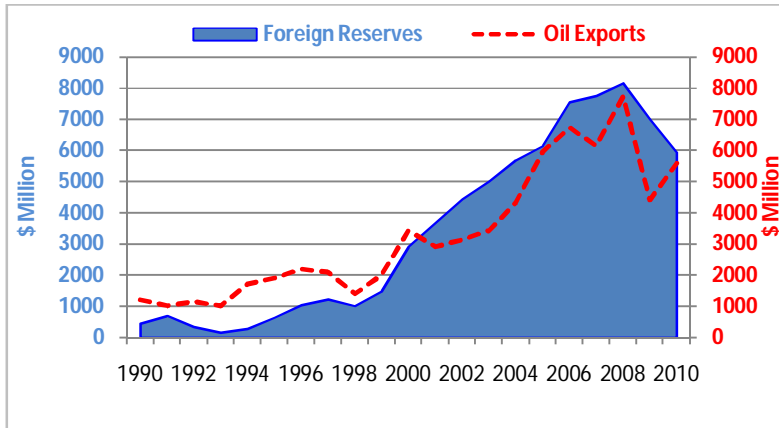
Source of Data: U.S. EIA, 2010 and MOF, different issues.

**Figure 26: Inflation in Yemen (1990-2010)**



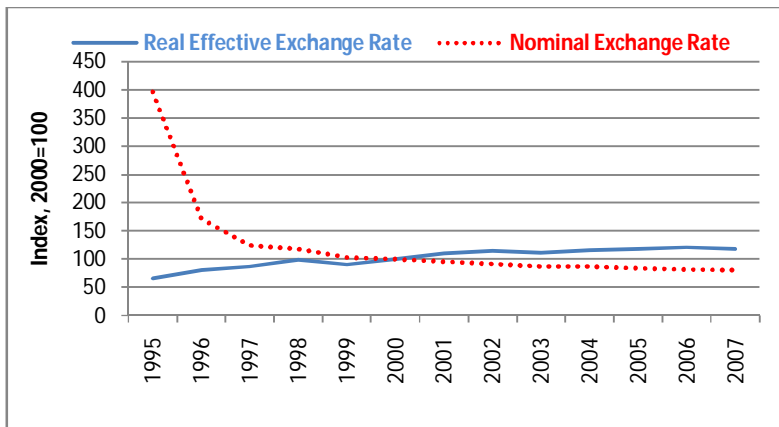
Source of Data: CBY, different issues and IMF, 2010.

**Figure 27: CBY Foreign Reserves and Oil Exports (1990-2010)**



Source of data: CBY, different issues and IMF, 2010

**Figure 28: Real Effective Exchange Rate of the Yemeni Rial (1995-2007)**



Source of Data: CBY, different issues and IMF, 2010

**Table 1: Yemen and MENA Selected Economic and Social Indicators, 2010**

Indicator	Yemen	MENA
Population (million)	24.4	325
GDP per capita (current \$)	1283	2000
HDI Rank	133	--
% of population below poverty line	43	16.9
% of urban population	31	58
Life expectancy at birth (Year)	63	71
Infant mortality rate (for every 1000 births)	78	27
% of malnourished infants (under 5 years)	43	12
% of Population with access to safe water source	62	87
Health expenditures (% of GDP)	2.1	4.8
Adult illiteracy rate (%)	39	26

Source: The World Bank(2011b); IMF(2011).

**Table 2: Resource-adjusted Saving Rates (% of GDP), (average 1972-2010)**

Countries claimed to have escaped the resource course		Countries claimed to have not escaped the resource course	
Australia	18	Algeria	6.11
Botswana	33	Congo	-11.9
Canada	15.7	Mexico	10.8
Chile	7.4	Nigeria	-22
Ireland	22	Saudi Arabia	-21.5
Malaysia	19.9	Sierra Leone	-1.8
New Zealand	18.4	Trinidad and Tobago	-3.9
Norway	17	Venezuela	-1.8
Oman	-26.6	Zambia	-5.8
Thailand	20	Ecuador	n.a.
USA	15.1	<b>Yemen(1990-2010)</b>	<b>-22.5</b>

Source: Torvik (2009) and IMF(2011).

**Table 3: Resource-Dependent Economies and their Institutional Quality**

Country	Natural Resource Export/GDP	Control of corruption
Saudi Arabia	0.45	0.3
Algeria	0.38	-0.59
Yemen	0.18	-0.73
Iran	0.21	-0.48
Jordan	0.05	0.26
Norway	0.21	2.03
Chile	0.17	1.37

Source: From Kolstad and Søreide (2009)

**Table 4: Fuel Subsidies in Yemen (2007)**

Fuel Type	Reference Cost (YR/l)	Price Paid (YR/l)	Share of Subsidy in Reference Cost (%)
Diesel for electricity	136	17	87.5
Diesel for other uses	136	35	74.3
Gasoline	125	60	52
Kerosene	135	35	74
Jet fuel	135	36	73
LPG	136	24	82

Source: Breisinger et al. (2011)

**Table 5: Fuel Subsidies and Government Expenditures (2007-2010)**

Item	Share in total expenditures (%)			
	2007	2008	2009	2010
<b>Fuel subsidies</b>	<b>22.9</b>	<b>33.8</b>	<b>21.2</b>	<b>24.3</b>
Health	3.4	3.2	3.5	4.7
Education	14.5	13.1	16.3	15.5
Social protection	0.2	0.2	2.7	2.9
General public services	24	20.3	18.2	13.6
Defense	15.7	13.3	16.4	10.8
Other	19.3	16.1	21.7	28.2
Total	100	100	100	100

Source: Central Statistical Organization (2011)

**Table 6: Availability and Adequacy of the Eight Principal Budget Reports**

Document	Level of Information Grade*	Publication Status
Pre-Budget Statement	E	Produced, Not Published
Executive's Budget Proposal	D	Published
Enacted Budget	D	Published
Citizen's Budget	E	Not Produced
In- Year Reports	B	Published
Mid-Year Review	E	Not Produced
Year-End Report	E	Published
Audit Report	E	Produced, Not Published

Notes: \* Grades for the comprehensiveness and accessibility of the information provided in each document are calculated from the average scores received on a subset of questions from the Open Budget Survey. An average score between 0-20 (scant information) is graded as E; 21-40 (minimal) is graded as D; 41-60 (some) is graded as C; 61-80 (significant) is graded as B; and 81-100 (extensive) is graded as A.

Source: International Budget Partnership, 2010

**Table 7: Observable Features Of Yemen's MOF in Relation to International Standards of Effectiveness**

GOAL	
Aggregate Fiscal Discipline	<p><b>Budget Formulation Features</b></p> <ol style="list-style-type: none"> <li>1. No multiyear macro-fiscal framework used to set public revenue, expenditure and debt policy within realistic economic framework for line ministries, resulting in extensive use of <i>supplementary budgets</i>.</li> <li>2. Fiscal oversight limited by level of disclosure and integrity of fiscal information.</li> </ol> <p><b>Budget Execution Features</b></p> <ol style="list-style-type: none"> <li>1. No control system to limit expenditure of available resource, and no treasury cash management that supports matching of expenditures to revenues for line ministries.</li> <li>2. No expenditure controls to execute the line ministries' budget as approved.</li> <li>3. Fiscal and banking accounts are only partially reconciled.</li> <li>4. Internal audit is not operational.</li> </ol>
Strategic allocation of resources	<ol style="list-style-type: none"> <li>1. Expenditure allocations between and within line ministries may not be consistent with government policies and priorities.</li> <li>2. Sectoral ceilings set early in expenditure process to encourage ministry prioritization may become <i>artificial</i> because subsequent cash allocations or supplementary budgets render them redundant.</li> <li>3. Resource allocation limited by level of disclosure and integrity of fiscal information as several spending programs occur outside the budget (tax expenditures, foreign assistance, quasi- fiscal expenditure such as the fuel subsidy, and extra-budgetary funds).</li> </ol>
Effective service delivery	<p>Poor budget planning (and inability to execute budget as approved) at the line ministry level do not support productivity improvements and management/program development.</p>

Source: De la Torre(2008)



**Table 8 : Legal Basis for the Budget Preparation Process**

<b>Timing</b>	<b>Activities</b>	<b>Legal basis</b>
May	Medium-term fiscal framework preparation	
June	The Prime Minister submits current and capital spending ceilings to line ministries	Cabinet directives
July	Line ministries and departments present budget proposal to the MOF, Ministry of Civil Service, and Ministry of Planning and International Cooperation, and start discussions	Budget circular guidelines, Civil Service Law
August	Governorates and local governments present budget proposal to the Ministry of Local Administration and start discussions	Budget circular guidelines, Local Authority Law
October	The MOF submits the draft budget to the cabinet	Budget circular guidelines
November	Draft budget is submitted to parliament	Constitution, Financial Law
December	Parliament approves the budget	Constitution

Source: De la Torre(2008)