

ECONOMIC
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2015

working paper series

FISCAL INSTITUTIONS AND MACROECONOMIC
MANAGEMENT IN RESOURCE RICH ECONOMIES:
THE CASE OF YEMEN

Mahmoud Al Iriani and Yahsob Al Eriani

Working Paper No. 935

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August 2015

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First published in 2015 by
The Economic Research Forum (ERF)
21 Al-Sad Al-Aaly Street
Dokki, Giza
Egypt
www.erf.org.eg

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Abstract

The link between natural resource outcomes and the quality of institutions has attracted considerable attention in natural resource literature. But only very recently has its link to fiscal rules and institutions been discussed, focusing mainly on developed economies. We conduct an assessment of the role fiscal rules and institutions play in Yemen, both an oil-producing and developing country. The analysis attempts to evaluate fiscal discipline and the resulting fiscal side of macroeconomic policies in this populous Arab country. The structure and quality of fiscal institutions in Yemen, and the rules governing them, are central in determining the developmental impact of the country's oil and natural gas endowments. We show that Yemen's economic volatility, and hence poor development experience, was in fact a natural result of the two-way interaction between fiscal institutions and natural resource rents. On one hand, realizing the benefits from natural resource endowments in Yemen requires adopting an appropriate set of working rules that reduce the unfavorable effects of resource abundance on the quality of institutions. On the other hand, high quality institutions and rules may help improve resource management, contributing to the realization of better economic performance in the future.

JEL Classification: O13, P16, O43

Keywords: Natural Resources, Oil, Fiscal Institutions, Macroeconomic Management, Yemen

ملخص

اجتذبت العلاقة بين مدى الاستفادة من وفرة الموارد الطبيعية في بلد ما و جودة المؤسسات فيه اهتماماً كبيراً في أدبيات الموارد الطبيعية. غير أن العلاقة فيما يخص المؤسسات المالية لم تجذب اهتمام الباحثين إلا مؤخراً، و تركز ذلك الاهتمام بشكل رئيسي على الاقتصادات المتقدمة. و في الورقة التي بين أيدينا يتم تحليل و تقييم الدور الذي لعبته و تلعبه القواعد والمؤسسات المالية في اليمن كدولة منتجة و مصدرة للنفط و الغاز في المساعدة على الاستفادة من تلك الموارد الطبيعية للبلاد. و نحاول في هذا التحليل تقييم قواعد الانضباط المالي و السياسات الاقتصادية الكلية في هذا البلد العربي الكثيف السكان. حيث يلعب هيكل ونوعية المؤسسات المالية في اليمن، والقواعد التي تحكمها، دوراً مركزياً في تحديد الأثر التنموي لثروة النفط والغاز الطبيعي في البلاد. و قد توصل التحليل إلى نتيجة مفادها أن التقلبات الاقتصادية في اليمن، و التعثر المصاحب في مجال التنمية كان في الواقع نتيجة طبيعية للتفاعل بين مدى جودة المؤسسات المالية و استغلال الموارد الطبيعية. فمن جهة، يتطلب تحقيق المنافع المرجوة من الموارد الطبيعية الوفيرة في اليمن اعتماد مجموعة مناسبة من القواعد التي تقلل من الآثار السلبية التي عادة ما تصاحب وفرة تلك الموارد على جودة المؤسسات المالية في البلاد. و من جهة أخرى قد تساعد المؤسسات والقواعد المالية ذات الجودة العالية تحسين إدارة الموارد، والمساهمة في تحقيق أداء اقتصادي أفضل في المستقبل.

1. Introduction

The effects of natural resource abundance on economic growth and development in resource-rich countries have been studied extensively in the literature. A traditional view on natural resource abundance emphasizes their positive role in economic growth and development and points out that natural resources have played an integral role in the development of a number of mostly advanced nations. Other international experiences are, however, mixed.

Despite favorable outcomes from resource abundance in a few countries, empirical evidence generally shows that, controlling for other variables, countries with abundant natural resources are historically more likely to grow at a slower pace than countries with less of, or no such, resources. In his seminal book about the subject, Richard Auty (1993) called this phenomenon "Natural Resource Curse" (NRC), describing the case when resource abundance turns to be a curse rather than a blessing. The empirical literature that followed has established several instances linking natural resources with growth failure (Sachs & Warner, 2001); (Gylfason T. , 2001). A comprehensive survey of the NRC is found in Frankel (2010).

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 & Warner, 2001). In this particular case, Sala-i-Martin and Subramanian (2003) point 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 frequently-cited case is that of the Netherlands, where the so-called Dutch Disease originated (The Economist, 1977). 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 exports and crowding out other productive sectors (Corden & Neary, 1982). Such effects might include crowding out exports of manufactured goods (Sachs & Warner, 2001), and crowding out human capital and entrepreneurial activity or innovation (Gylfason T. , 2001). Another explanation of the Dutch Disease is the economy's exposure to international commodity price variability that leads to domestic macroeconomic instability.

A relatively new line of research argues that the occurrence of the NRC is not inevitable but depends ultimately on institutions and governance (Alexeev & Conrad, 2009); (Elbadawi & Gelb, 2010); (Arezki & Ploeg, 2007); (Mehlum, Moene, & Torvik, 2006); (Cappelen & Mjøset, 2009); (Schmidt-Hebbel, 2012)]. Most writers cite a number of resource-rich countries, like Norway, which have achieved remarkable economic growth with the help of natural resources combined with high-quality institutions. 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 vulnerability of a resource-dependent economy to price cycles and the decrease in economic diversification 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. However, designing and implementing such good policies requires quality institutions that many resource abundant countries lack.

Within research linking the outcome from resource abundance and institution quality, only very recently has the link to *fiscal institutions* been discussed. Furthermore, the existing research on the relationship between fiscal rules and institutions and the macroeconomic performance has mainly focused on developed countries. This paper presents a formal assessment of the interaction between resource abundance and institutions quality, and the role fiscal rules and institutions play in one of the developing countries: Yemen. The analysis attempts to evaluate fiscal discipline and the resulting fiscal side of macroeconomic policies in this populous Arab country. On one hand, we examine the role resource abundance has played in determining institutions quality in Yemen. On the other, we show how budget institutions, and the rules and procedures governing them, have affected the country's macroeconomic management. We test for the extent to which, and how, fiscal mismanagement of resource rents in Yemen may have contributed to its economic volatility and hence poor development experiences. The structure and quality of fiscal institutions in Yemen and rules governing them are central in determining developmental impact of oil and natural gas endowments.

Our analysis begins in section 2 with a discussion of the nature of fiscal rules and institutions as described in the literature. In section 3 we move to analyze the case of Yemen; starting with a brief profile of the country. Next, we discuss Yemen's macroeconomic management experience since 1990. Then, we explore the structure of fiscal institutions and rules, and analyze their impact on the efficiency of macroeconomic management and resource utilization in the economy. Subsequently, we identify the institutional factors and the extent to which they helped in mitigating economic volatility. Section 4 tries to further explain the experience of Yemen with natural resource endowments, from a political economy perspective. Section 5 concludes with main findings, and some recommendations for a more efficient use of fiscal management to maximize the benefits of Yemen's natural resources.

2. Fiscal Institutions and Fiscal Rules

Institutions represent the entrustment by the people to particular constitutional bodies to manage their country (Schaechter et. al, 2012). Fiscal institutions, fiscal policy, and the macroeconomy are important part of such institutions. This task is usually delegated to designated agents in the government, and the delegation must naturally be accompanied by some type of control in order to achieve the desired outcomes. Therefore long-lasting constraints, called fiscal rules, govern fiscal policy to ensure acceptable fiscal behavior on the part of the government. They aim at reducing fiscal policy pro-cyclicality, and ensuring fiscal responsibility and debt sustainability. Examples of fiscal rules include numerical limits on budgetary aggregates, on deficits, and debts (Wyplosz, 2002). It is preferred that rules be enforced even in the long run but allowing for some flexibility is advised because of changing economic conditions. However, changing rules frequently defies their purpose. To insure that fiscal rules are effective some noncompliance sanctions, in the form of fines or making violation illegal, must accompany them.

2.1 The role of fiscal institutions and rules in macroeconomic management

Fiscal rules and institutions play important role in determining budgetary outcomes and affecting macroeconomic management and hence short and long run stability in the economy. Quality fiscal rules and institutions ensure better management and resource utilization and mitigate volatility. On the other hand, absence or weakness of fiscal institutions and/or rules may lead to mismanagement of resource rents in resource-endowed economies and may contribute to volatility and poor growth experience. According to Sharma and Strauss (2013), institutional mechanisms that may promote fiscal discipline and constrain expenditure policies discretion include "special fiscal institutions," such as fiscal rules, resource funds, fiscal responsibility laws, and fiscal advisory councils. The authors pointed to Norway and Chile as the most successful countries in implementing such rules to manage natural resource wealth, and suggested that other natural resource-rich countries may consider benefitting from the experience of the two countries in applying their own rules. In fragile natural resource-rich countries, the authors suggest that such countries consider the types of fiscal arrangements and institutional mechanisms that are appropriate for them. Similarly, Von Hagen (2006) defines three types of fiscal rules that are mainly relevant to macroeconomic management. These are Ex-ante fiscal rules such as: (1) constitutional limits on deficits, spending or taxes, (2) rules promoting accountability and competition, and (3) rules that define procedures of the budget.

3. Fiscal Institutions and Fiscal rules in Yemen

3.1 A primer on Yemen's economy

Yemen extends over 555,000 square kilometers and is relatively populous. Its population was reported to reach 25.6 million people in 2012, growing at more than 3% annually (World Bank, 2013). The current Republic of Yemen (ROY) was born in 22 May 1990 by the merger of the traditional "Yemen Arab Republic" (YAR) in the North and the communist "People's Democratic Republic of Yemen" (PDRY) in the South.

Yemen is a populous country that is one of 13 Arab countries endowed with varying amounts of hydrocarbon resources. It owns relatively limited natural resources and 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. The country has been suffering from chronic political conflicts and economic crises. It was once described as a country "among the least peaceful and secure countries worldwide" (USAID, 2011). Factors affecting Yemen's development performance are interdependent and interrelated. It is, however, evident that economic challenges represent 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" (World Bank, 2006). Yemen's economy is still classified as the poorest in the Arab region and was ranked 160 out of 169 countries included in the UNDP's Human Development Index (HDI) in 2012. This score is not much higher than that of the poorest world countries, and within the Arab region it is only higher than that of war-torn Somalia.

Despite the slow improvement in the educational level of the Yemeni population, illiteracy remains high at 36% on average. The vast majority of Yemen's 25.6 million people live below the poverty line (on less than \$2 a day). In 2012 nominal per capita GDP was estimated to be about \$1264 and 45% of the population was considered poor. As Table 1 and Figure 1 indicate, Yemen's development performance has not been up to par and the country trails substantially behind the average of the MENA region in all developmental aspects.

3.1.1 Hydrocarbon endowments

Yemen is a relatively new member in the club of Arab oil and gas producers, 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. Oil export did not actually commence until 1987, and exports of liquefied natural gas started as late as the last quarter of 2009. In 2013, the country was estimated to own 3 billion barrels and 17 trillion cubic feet of proved oil and natural gas reserves, respectively. To put these reserves into perspective figures 2 and 3 show proved reserves in Yemen as compared to other oil and gas-producing countries in the region. Among the 13 Arab oil-producing countries, Yemen ranks 10 in total reserves and 9 in per capita reserves. Among the 12 natural gas-producing countries, Yemen ranks 10 and 11 in terms of total and per capita reserves, respectively.

3.1.2 The importance of hydrocarbons in the economy

Yemen's encounter with hydrocarbons happened well before it discovered and produced its own oil and gas. Indeed, the effect of hydrocarbons on Yemen's economy began with the increase in international oil prices in the early 1970's and the subsequent influx of oil revenues to GCC economies. As oil revenues were used to fuel an unprecedented rise in economic activities in the GCC, especially construction and services, large numbers of Yemeni workers found employment opportunities in the neighboring countries and remittances by migrant workers started to flow into Yemen. Those remittances, in addition to official aid from the governments of the GCC, have been very influential in shaping the country's early development path. They helped the economy grow and were instrumental in raising the population's standard of living. Another consequence of the flow of funds from GCC is that the economy in Yemen became subject to the same oil cycles experienced by the oil producers in the region.

By the late 1980's the pace of remittances slowed down but the discovery of Yemen's own hydrocarbon resources was sufficient to compensate for the reduced flow of funds. The start of oil and later natural gas exports marked a new era for Yemen and the role of oil in the country's economic and social development cannot be overstated. Yemen's production, however, has been declining since it peaked in 2001 at 440,000 bpd. The U.S. Energy Information Administration (EIA) reports that production reached a low average of 130,000 bpd in 2013. Domestic consumption of crude oil has, on the other hand, been increasing steadily, and in 2013 Yemen became a net importer of oil for the first time since 1986 (Figure 4).

Despite the small quantity of oil produced, both government and private activities have become dependent on oil revenues. Figure 5 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. The values of these ratios for Yemen are 0.82 and 0.44 respectively. When compared with countries of the GCC, Yemen's revenue dependency is relatively low, but export dependency ratios are substantially higher for Yemen than those of all countries with the exception of Qatar.

3.2 Fiscal management: short-run response to resource shocks

Yemen's endowments of oil and natural gas have not been playing a favorable role in the country's development (Al Iriani, 2012). The contribution of ineffective fiscal institutions and rules in the natural resources outcome in Yemen is manifested in poor fiscal management. Kaminsky & C. Vegh (2004) list 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 Figure 6.

The figure shows the broad fiscal trends including government revenues and spending over the period 1990-2013 during which significant oil revenues were cashed in by the government. It shows a large fiscal expansion in the boom years of 2004-2008 and a subsequent fiscal tightening in 2009, followed by another expansion during 2010-2012. This expansion however was basically in the form of increases in primary spending, particularly current spending, with less of an increase in capital spending¹. In addition, the figure indicates 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, leading to 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 (Figure 7).

4. Energy Subsidies

As is the case in many oil producing countries, an important share of public spending goes to subsidies, the bulk of which are fuel subsidies. Using fuel subsidies, governments attempt 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. However, it is well-known that fuel subsidies are regressive. They end up benefiting the well-off more than the poor as affluent people are essentially the big consumers of energy. Fuel subsidies come at the cost of other government services. To put subsidies in Yemen in perspective, Table 2 shows the share of fuel subsidies in public expenditure in 2010 for which data is available. 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 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

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

in 2010, decreasing from its peak level of 17.7 percent in 2007 (Central Statistics Organization, 2011). 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.

The use of large fuel subsidies would not have been possible without the new oil windfalls. The size of subsidies has been growing over time and moving closely with international oil prices. Subsidies have peaked in 2008 when oil prices increased substantially. The decrease in subsidies in 2011 reflected the effect of the domestic crisis rather a change in oil price (Figure 8). The government had been keen to phase out subsidies, recognizing the unsustainability and harmful effect. During most of the time since the crisis of 2011, the government was unable to provide enough supplies of diesel and gasoline to the market. This created long lines at gas stations leading to public discontent. In order to ease the burden of energy subsidies on the state finances and secure more fuel supplies, the government decided in July 2014 to increase the price of gasoline from 125 to 200 Yemeni riyals (\$0.58 to \$0.91) per liter and the price of diesel from 100 to 195 riyals (\$0.47 to \$0.90). In return, the government was able to provide sufficient supplies and the long lines at the gas stations disappeared. However, the price hike has set off a wave of discontent with major protests in the capital Sana'a, led by the Huthi insurgents. The Huthies used the public protest as an excuse to besiege the capital city and eventually capture it on of September 21, 2014.

On the revenue side, recent literature points to the tendency of governments that receive large hydrocarbon revenues to raise less tax revenues, leading to lower incentive for the public scrutiny of the government use of its revenues. This effect is similar to that classic impact of foreign aid on domestic taxation (Bornhorst, Gupta, & Thornton, 2008). With the increase in government revenues from the oil and gas exports, government revenue collection in Yemen took an interesting path where the share of tax revenues continued decreasing thereby increasing government 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 (Figure 9) reflecting, again, the effect of the new oil windfalls.

4.1 The structure of Yemen's fiscal institutions

Once described, "Public spending is a story of some people spending other people's money" (von Hagen, 2002). As indicated earlier, fiscal institutions represent the entrustment by the people to their constitutional bodies the task of running public finance and the management of the macroeconomy, through delegation. This raises the problems of mismanagement of the budget and the macroeconomy as a whole due to rent seeking. Therefore, societies naturally subject such delegation to certain rules and control mechanisms that aim at mitigating these problems and strengthening their fiscal institutions.

As is the case in many countries, the task of running public finance in Yemen is delegated collectively to the Ministry of Finance (MOF), the Cabinet, Central Bank of Yemen (CBY), the House of Representatives (HOR), and finally the President. These governmental bodies jointly prepare, and implement the public budget, which is approved by the people's representatives. Control and auditing are made at different levels starting internally by the MOF, and the cabinet and then externally by the HOR. The Central Organization for Control and Auditing (COCA) is the government arm of control and auditing at all levels

of the government units and its reports are used by the HOR to observe the government's fiscal discipline.

Theoretically, the primary purpose of using public budgets is to achieve constitutional, fiscal and economic controls at all times. In that sense, the budget is an essential planning tool governments depend on to include clearly what it intends to do for a specific period. Even with the existence of sufficient and effective institutions and rules to help prepare a viable budget plan, a successful budgeting process requires efficient fiscal institutions and rules to ensure the prevention, or correction, of deviations from targets by stakeholders during implementation of the budget.

4.1.1 The budgetary process

Yemen's experience with formal public budgeting started with the Republican Decree No. 27 for the year 1963, which established the first formal Ministry of the Treasury in Northern Yemen² (YAR). The decree specified the tasks of the new Treasury as preparing public budgets, reviewing budgets of independent bodies, and approving budget amendments before submitting them to the higher authorities. Other tasks of the new Treasury included proposing fiscal laws and legislations related to public finance, and monitoring revenue and expenditure flows. The first public budget was issued in the same fiscal year, which was defined as starting in July each year and ending by the end of June the following year.

In 1972 the YAR government took the first step in the creation of a formal ministry of finance by establishing the Central Budget Office (CBO). The CBO was assigned the task of preparing the state budget and reforming the state's financial structure. In the financial year 1973/1974, the CBO prepared the first integrated public budget, which was based on modern fiscal principles and coincided with the first Three Year Development Program (1973-1976). In May 30, 1974 both the Treasury and the CBO were merged to form the current Ministry of Finance (MOF).

The establishment of the MOF in YAR represented a quantum leap in keeping up with new fiscal developments in the other parts of the world. The effects of the new MOF were reflected in fiscal performance, public budget preparation and implementation, and the development of fiscal system legislations. In the same year, the MOF prepared the first budget for the economic units (those owned by the government, and others jointly owned by the government and private sector), and released the budget closing accounts for the first time. In addition, the MOF issued fiscal regulations that set rules and principles for budgetary processes including preparation and implementation of state budgets, preparation of closing accounts, and annual rules for revenues and expenditures. Starting January 1981, the MOF decided to make the financial year coincide with the calendar year, conforming to the same practice in most world countries. To accommodate for that move, the MOF prepared a transitional semi-annual public budget that was applied from July 1980 until December 1980.

In the Southern part of Yemen (PDRY), similar annual budgets were used starting in 1963. There was some fiscal independence in the Southern and Eastern provinces of PDRY in the form of local budgets, and a combined central budget. This budgetary practice continued until 1989 after which a central budget was prepared for the unified Yemen

² For a detailed exposure of these developments, see Al-Ashwal (2010).

(ROY) in 1990, consolidating the budgets of the former two countries in one central budget that was the basis for the following annual budgets. The executive bodies in charge of budgeting in the two countries were unified and a fiscal law for the unified state was issued in August 1990, followed by its by-laws in March 1991.

The Structure of the Budget

The aggregate government budget in Yemen consists of three key budgets: (1) budget of the central government and local authorities, (2) budgets of independent and ancillary units and special funds, and (3) budgets of the independent public units and mixed economic units owned by the government and both the government and the private sector, respectively.

Budget Principles

Some budget principles that characterize budgeting process in Yemen are not deferent from those followed by most budgetary processes around the world. They include:

Annuality: preparing the budget for the full financial year (which coincides with the calendar year).

Unity and accuracy: all revenues and expenditures of the units must be presented in a single document, which is the budget. No expenditure may be incurred in excess of the authorized appropriations.

Universality: reflected in two principles:

- *Non-assignment rule*: no revenues are assigned to specific expenditure, except in the case of aid or grants' income, which providers require that they be used for certain activities/projects.
- *Gross budget principle*: there cannot be any adjustment of revenue and expenditure and they must both be entered in full in the budget.

Specification: various sources (revenue) and uses (expenditures) are required to be identified precisely in the budget and are implemented for the purpose for which they were intended.

Equilibrium: The total amount of expenditure is to be capped by the limit of resources. When expenditures exceed revenues, the government uses past surpluses or borrows to cover the deficit.

Sound financial management and transparency:

- *Sound financial management*: budget appropriations to be used in accordance with the principles of *economy*, *efficiency* and *effectiveness*. Economy requires that resources be made available in appropriate time, quantity and quality. Efficiency is attained when the optimal relationship between resources employed and results is achieved. Effectiveness is insured when specific intended objectives and results are attained. Defining specific objectives that are measurable, achievable, relevant and timed for all sectors of activity and attaining them defines the principle of sound financial management.
- *Transparency*: requires that budget objectives are monitored using specific performance indicators.

Flexibility: the budget must be able to accommodate developments that may arise during implementation.

Public Budget Cycle

Preparing government budgets in Yemen follows the same phases known in most countries. It is done with guidance of law number (8) of the year 1991, the law number 4 of the year 2000, their by-laws, as well as instructions issued by the MOF annually regarding the preparation and implementation of the budget. The latter reflect the fiscal policy of the state for the recent budget year. In general, the budget process goes through four main phases: planning and negotiation, approval, implementation, and budgetary control (Table 3).

- **Budget Planning and Negotiation**

The planning stage involves setting state objectives, classifying the budget items and assigning numbers to them based on experience, capacity, available resources, and future expectations. In this phase, the main objectives of each state unit are specified in accordance with the overall objectives of the country's current development plan. The MOF is responsible for the supervision and guidance for the preparation of the state budget, notwithstanding the role of the individual administrative units, especially Ministry of Civil Services regarding manpower requirements, Ministry of Local Administration regarding the budgets of local councils, and the Ministry of Planning and International Cooperation regarding the investment program.

- **Draft Budget Approval**

Once the draft budgets are prepared at the unit level, negotiated with and approved by the MOF, the latter prepares the draft law of the aggregate budget to be presented to the cabinet for discussion and approval. The next step in the budget approval is to seek approval of the House of Representatives (HOR). Once approval of HOR is obtained, the final step is ratification of the budget draft and issuance of the Government Budget Law.

- **Budget Implementation**

Once the Budget Law is issued, the MOF issues executive instructions for budget implementation. These instructions list guidelines for the implementation of the budget on the resources and uses sides, and instructions regarding transfers between uses. Generally, they demonstrate the budget rules and objectives.

- **Budgetary Control**

Efficient and effective budgeting requires mechanisms that insure proper controls over the budget preparation and implementation. Typically, there are two levels of controls, internal and external. Internal controls are carried out by MOF and applied at the unit level. They include periodical financial reports issued by governmental units, and closing accounts. The MOF exercises its control through finance departments at all government units, which are staffed by the MOF and report directly to it. External controls include discussions and adoption of the budget at the HOR and later discussion of the final accounts presented by the government. Other types of external controls include audits by the COCA, which is theoretically an independent government organization.

4.1.2 Fiscal rules

We were not able to locate formal fiscal rules governing the budgetary process in Yemen. A recent study by IMF (Bova, Carcenac, & Guerguil, 2014) documenting the spread of

fiscal rules in the developing countries does not list Yemen as a country with fiscal rules. Therefore, in order for us to assess any existing rules we identify a set of common fiscal rules from the literature (using Schaechter et. al.'s (2012) specification) and then test whether fiscal policy behavior in Yemen reflects that such rule exist. Three main types of fiscal rules based on the type of budgetary aggregate that they seek to constrain are defined: budget balance rule, debt rule, and rules governing saving, investment and physical capital.

Budget balance rule

Constraints on revenues and expenditures translate into the will of government to constrain its budget deficit. The Economic Reform of early 1996 in the ROY aimed at reducing the deficit to less than 2% of GDP (Al-Asaly, 2002). To assess how successful such reform was, Figure 10 shows a historical perspective for the registered budget deficits in Yemen as a percentage of the country's GDP between 1990 and 2013. The figure shows that the government succeeded in keeping the ratio below 2% in the period during 1997-2002, with exception of 1998 (due to falling of oil prices), and again in 2005-2006. That is a total of 8 years only, out of 24 years. In the remaining years, the ratio witnessed large swings (mostly following international oil price movements) where it recorded values between a low of 6% (surplus) in the year 2000 and a high of 14% in 1994.

Public Debt Rule

Another fiscal rule that is crucial to a disciplined fiscal management is a pre-assigned level of debt/GDP ratio. The government in Yemen issues debt instruments such as T-bills and bonds in order to finance its high budget deficits. In addition, the government holds external debt that amounts to about 43% of the total public debt. Since debt-to-GDP ratio measures the financial leverage of the government, fiscal authorities typically try to keep this ratio low. There is no agreed optimal level of debt ratio but a ratio below 40% in developing countries seems desirable. However, the IMF considered a 48% for Yemen in 2012 as being "moderate" and expected it to increase to 55% over the medium term (IMF, 2013). Figure 11 gives an account of such ratio during 1990-2013. It reflects that public debt ratio in Yemen has historically been high, even though its value has decreased starting in the year 2000.

Saving, investment and physical capital

As Gylfason and Zoega (2006) point 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 terms of saving of resource income and investment we have reproduced Table 4 using Torvik (2009) after adding data for 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 that are claimed to have suffered from the NRC.

In addition, Figure 12 illustrates that while gross domestic investment has briefly increased during the period 1990-1998 it has leveled off thereafter, confirming the occurrence of symptoms described by Gylfason and Zoega (2006).

To conclude, Table 5 presents the results of our analysis of fiscal rules in Yemen and as is clear from the table, fiscal rules in Yemen are either absent or not effective.

4.2 The quality of fiscal institutions in Yemen

Recent literature on the effects of natural resources on growth has emphasized that the quality of fiscal institutions and rules may play crucial roles in determining the economic outcome from resource abundance. It is widely agreed that fiscal rules and institutions are essential tools through which governments perform their macroeconomic management function and attempt to achieve the state's political, social and economic objectives. The main function of fiscal institutions and rules is to serve the political and legal objectives of constitutional control and ensure the participation of all segments of society. Quality fiscal institutions governed by effective fiscal rules have been shown instrumental in successful management of the national economy of any country. This is true in resource rich countries in particular.

Upon unification in 1990, the new ROY inherited fiscal structures that prevailed in the YAR (North). Discussion of fiscal institutions and budgetary process in Yemen has not attracted much attention in the published literature. Only sporadic discussions of the issue have appeared in the literature and in some reports by the World Bank and the IMF or similar international organizations, but little in the context of budgetary processes and fiscal institutions. The public financial management in Yemen has been described by an independent observer as being weak, with poor monitoring and reporting of expenditure and results. Budget implementation has been reported as routinely deviating from plans (Bennett, et al., 2010).

There exists some literature addressing the quality of fiscal institutions in Yemen. For example, Al-Asaly (2002) discussed the issue in the context of sustainability of budget deficits. He used a technique that appeared in Esfahani (1999) to measure changes in the budgetary institutions in Yemen. The main conclusion of Al-Asaly's research is that budgetary institutions in Yemen are very weak and inefficient. The Constitution and fiscal laws contain imbalances, contradict budgetary rules, and the norms of budgetary process are not well organized. Political instability, a fragmented social system, and an undeveloped economic system are to be blamed for such inefficiency. Al Ashwal (2010) discussed the issue of transparency and the importance of making budgetary information and data in Yemen publically available. Surveying a number of officials involved the preparation and implementation of the budget, the author showed a positive correlation between publicly providing budget documents and transparency, and suggested making such provision mandatory by law. The issue of transparency was also raised by Al Rubaidi (2009) who discussed the extent to which the central government of Yemen adheres to the principles of fiscal transparency in the budgetary process and the extent to which the accounting system of the government in Yemen conforms to the international accounting standards for the public sector. He emphasized the role of active control, performance budgeting and sources and uses estimates based on actual needs, in ensuring that the fiscal system's outcomes conform to the standards of financial transparency. To achieve this result, the author argued that the public must have access to information on all aspects of the budget, final accounts, and public debt.

Realizing the shortcomings of the existing fiscal management system, and with pressure from donors, the MOF has attempted in some occasions to improve the Public Finance

Management System (PFMS). The Government adopted a Strategy of Public Financial Management Reform (PFMR) in May 2005, with a PFMR action plan that was approved by the Cabinet in August 2005 by decree number 253 of 2005. The project was financed by the UNDP and other donors. The final report of the project indicated clearly that it did not achieve its goals due to lack of interest by the local partners (UNDP, 2009). Another attempt to improve the PFMS was represented by the Public Finance Modernization Project (PFMP), a project that started in 2004 and was continued with cooperation with the World Bank in 2011, and is planned to end by December 2015. The project aims at enhancing decision-making mechanisms on budget management and the capacity of public procurement management institutions. PFMP aims at improving and expanding a modern Accounting Financial Management Information Systems (AFMIS), a Loans and Grants Management Information System (LGMIS), and in enhancing the institutional capacity building for COCA. In the early 2000s, the idea of the implementing an FMIS started to be debated and a conceptual design was adopted in 2005 (Lepain). The project looked promising but due to the political chaos its implementation seems to have been slowed down. The last project report posted on the MOF website was for 2011.

4.2.1 The availability of budget information

The availability of budget information publically is an essential component of the budgeting process that ensures successful planning and implementation of the public budget. However, it is well known that in many developing countries such information is scant and, in many cases, not available. In recent years up to 2011, 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 budgets 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 69th out of 85 countries, where it scored only 9 percent (out of 100) (IBP, International Budget Survey, 2013). In 2010 however, Yemen's ranking increased to 25% (compared to 0% in Iraq, 1% in Saudi Arabia and Algeria, 50% in Jordan, and 28% in Morocco). Nevertheless, Yemen's score has deteriorated substantially in the wake of the 2011 "Spring." Its rank in 2012 has decreased to 87th out of 100 countries, with a score of 11% (Figure 13).

Comparing Yemen to other Arab countries, Figure 14 shows that Yemen ranks 7th among 10 selected Arab countries according to the OBI. 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. Table 6 summarizes OBI's assessment of Yemen's position on information disclosure.

The scant availability and disclosure of budget information has always been a concern to Yemen's donors. A report by USAID has indicated 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).

Table 7 describes Yemen's budget practices as described in De la Torre (2008), which are clearly below international standards. 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 (Table 8). In addition, although fiscal data is often available within the government, it is not systematically compiled and disseminated to the public.

4.2.2 *The IMF index of budget institutions*

There have been numerous attempts to measure the quality of budget institutions using quantitative indices. The International Monetary fund (IMF) has devised an index that measures the effectiveness of budget institutions in low-income countries (outlined in Dabla-Norris, et al. (2010)). The aim is to point to areas of weakness and suggest ways to strengthen budget processes and improve fiscal performance in these countries. The index, called Budget Institutions Index (BII), measures institutions across the entire budget process. Those institutions are assessed against a list of wide-ranging criteria that measure key characteristics of the budget process. The composite BII is developed for budget institutions for 72 low-income and middle-income countries, drawing upon various sources of information including empirical studies, surveys, databases, and reports.

The BII index evaluates budget procedures along each of the budget stages: planning, negotiation, approval, and implementation. The authors identify five cross-cutting categories at each of the budget stages: (1) top-down procedures; (2) rules and controls; (3) sustainability and credibility; (4) comprehensiveness; and (5) transparency. The index systemizes available information regarding the characteristics and functioning of the budget process, practices, and rules using Public Expenditure and Financial Accountability (PEFA) reports for accessing budgetary practices and performance, the OECD database for information on legal regulations and procedural rules, IBP Open Budget Index and IMF Reports on the "Observance of Standards and Codes," and "Fiscal Transparency Module" on transparency and comprehensiveness of fiscal information. The data sources were complemented by a survey of IMF country teams and fiscal economists.

To evaluate the quality of budget institutions in Yemen we use a simplified version of Dabla-Noriss et al. (2010)'s proposed BII. We have converted Appendix II in Dabla-Noriss et al. (2010) into a survey instrument in Arabic (Appendix B) that was completed using face-to-face interviews with officials at four governmental ministries/departments, which, we believe, represent the core of the budgetary process: (1) MOF, (2) Ministry of Planning, (3) CBY, and (4) Yemen Economic Corporation, which is a government-owned commercial company. We planned for the inclusion of members in the HOR, but were not able to obtain interview results due to the fragile political and security situation in Yemen during the survey implementation.

In constructing the index, we used for each question a scale between 0 and 4, with a higher score reflecting better performance. The "Stage Index" is then a simple average of the "Category Indices" constructed for each of the stages. Each sub-index, in turn, is a simple average of the number of questions at each stage. That is, for the overall stage index we have:

$$STAGE\ INDEX = \frac{1}{3} \sum_{i=1}^3 s_i \quad (1)$$

where S_i correspond to the value of the sub-indices of the stages (planning, approval and implementation), that is:

$$S_1 = \text{Planning} = \frac{1}{14} \sum_{i=1}^{13} q_i \quad (2)$$

$$S_2 = \text{Approval} = \frac{1}{6} \sum_{i=1}^6 q_i \quad (3)$$

$$S_3 = \text{Implementation} = \frac{1}{13} \sum_{i=1}^{13} q_i \quad (4)$$

And q_i is the scores for each of the questions, weighted according to the number of questions in each stage. For example, since the budget planning and negotiation stage has 14 questions, the score on each question receives a weight of 1/14.

For the category index, we have:

$$\text{CATEGORY INDEX} = \frac{1}{5} \sum_{i=1}^5 C_i \quad (5)$$

where the C_i correspond to the value of the category sub-indices:

$$C_1 = \text{Top - Down} = \frac{1}{5} \sum_{i=1}^5 q_i \quad (6)$$

$$C_2 = \text{Rules} = \frac{1}{7} \sum_{i=1}^7 q_i \quad (7)$$

$$C_3 = \text{Sustainability} = \frac{1}{7} \sum_{i=1}^7 q_i \quad (8)$$

$$C_4 = \text{Comprehensiveness} = \frac{1}{6} \sum_{i=1}^6 q_i \quad (9)$$

$$C_5 = \text{Transparency} = \frac{1}{8} \sum_{i=1}^8 q_i \quad (10)$$

And q_i is the score for each of the questions, weighted according to the number of questions in each category.

We have applied equations 1-10 to data collected from survey interviews that we conducted with officials in Yemen, after assigning the appropriate scores for each response. Table 9 presents the BII results from Dabla-Norris et al. (2010) for country groups and stages. We have added results for Yemen, calculated from authors' own survey. In addition, Table 10 presents the same results for country groups and categories.

The results in Tables 9 and 10 indicate that that institutions' quality in Yemen as detected by the BII is not in general substantially below that in other developing countries. In fact Yemen scored substantially higher in the implementation stage, as well as the transparency category. These surprising results need further analysis of the actual budgeting practice. One explanation of these results is that, while current budgetary guidelines and rules in Yemen provide a decent set of directions governing the budget cycle, they are rarely followed in practice, and in the event of defying them, which is frequently the case, there are no legal consequences that prevent that defiance from happening again. We have observed that, for example, actual annual aggregate spending frequently exceeds budgeted expenditures by a large margin. Approval of budget amendment by HOR, required by law, is done only after the extra funds have been already spent, and is usually done at the aggregate level.

The results may also have reflected a poor understanding on the part of some interviewees about the difference between theoretical (legal) and planning aspects of the budgetary process and actual implementation and results. Therefore, it is reasonable to conclude that the counter-intuitive results for the quantitative index of budgetary process in Yemen have been a result of the small survey sample dictated by the difficulties faced by the authors during the survey implementation due to the unstable situation in Yemen that started in 2011.

5. The Political Economy of Resource Rents in Yemen

The previous sections concentrated on investigating the structure and mechanisms of fiscal institutions and rules in Yemen. We have concluded that fiscal institutions and rules in Yemen are weak and the management of the public financial system is highly sub-optimal. The question remains, what is the reason behind the inferiority of fiscal institutions and rules in Yemen? The answer to this question is not straightforward but one explanation lies in the political economy of resource rents.

As we have shown, available literature suggests that the quality of the political system, including fiscal institutions and rules, is a decisive factor for determining the ultimate outcome of natural resource endowments. The outcome depends on how well revenues from the sale of such resources are managed. But a reverse impact of resource abundance on the overall political system has also been cited. Indeed, Collier (2010) points to the *interaction* between the social value of natural resources, the quality of the political system, and how such interaction determines the ultimate outcome of natural resource abundance. On the one hand, the better the quality of institutions the higher the realized social value from natural resources. On the other hand, larger natural resource endowments lead to deterioration in the political system and make it *less likely that quality political institutions will develop*. Collier (2010) developed a simple model of this interaction where the social value of natural resource endowments is a positive function of the political system, and the quality of the political system is a negative function of the endowment of natural resources. As the importance of natural resources in the economy increase, the simultaneous solution of the two functions results in an equilibrium level for the quality of political system that is *unlikely* to be at the level necessary to realize the highest benefits from natural resources. To arrive at an explanation of the apparent disappointing outcome of natural resource endowments in Yemen's development, we need to look at this type of interaction between the country's endowments of oil and natural gas and its political system.

5.1 Impact of the political system on natural resource management

As is the case in most world countries, citizens of Yemen are the owners of its natural resources but the task of extracting these resources and managing revenues from their sale is delegated to the government. Theoretically, the government is expected to make optimal decisions to fulfill these two tasks in order to maximize the social benefits of natural resources. However, in Yemen such decisions have been determined by a complicated political structure. Evidence shows that once resource revenues materialized, the government leaned towards allocating only small amount to the provision of public goods. Furthermore, as we have seen in the previous sections, the quality of fiscal institutions and rules has become low and, in the face of oil price changes, government spending policies have become procyclical.

Collier and Goderis (2007) laid out minimum requirements for successful management of natural resources. The authors identified such requirements as a form of democracy with a particularly strong system of checks and balances, and an initial minimum level of governance at the time the resources are first exploited. They argue that countries satisfying such a minimum, experience favorable long-term effects from commodity booms. We previously have seen that Yemen's fiscal institutions and rules are generally weak. In addition, it is well known that a system of checks and balances on government operations is weak or non-existent. In general, the political system in Yemen does not satisfy the minimum requirements listed by Collier and Goderis (2007). That is because Yemen's political layout necessitates that in order for the government to stay in control, it has to use hydrocarbon revenues to buy tribal loyalty and the loyalty of political elites. This reality precludes optimal use of the country's resources.

5.2 Impact of natural resources on the political system in Yemen

The extent to which quality public services are provided depends on three elements: security, good governance and accountability. These public services are in turn affected by the availability and abundance of natural resources. There is reasonable evidence in the literature that resource rents negatively affect the functioning of the political system by increasing its insecurity and reducing its accountability (Collier and Hoeffler 2006, 2009; Collier 2010). Valuable natural resources have detrimental effects on the above three elements through three channels. First, *natural resources undermine security* because they increase the race to capture their rents leading to an increase in the instances of military coups, rebellion and civil wars, and secessionist movements. Second, *resource revenues may lead to deterioration in governance and make the government less accountable* in both democracies and autocracies. In a democracy, resource rents may be used to maintain power, undermine elections, reduce accountability and lead to the erosion of checks and balances. In an autocracy, the ruling elite have less incentive to create public goods. They would rather redistribute resource rents toward themselves. Third, resource rents are likely to reduce the chances for democratic systems to occur as compared to autocracies. Evidence shows that resource rich countries are more likely to have autocratic governments.

We have previously highlighted the role low quality institutions have played in determining the poor outcome of twenty years of oil and gas exploitation in Yemen. The possible reverse role resource endowments may have played in determining the quality of Yemen's fiscal institutions and rules during the same period is just as important. We argue that Yemen's political institutions, including fiscal institutions and rules, were largely undermined by its natural resource endowments in the same fashion predicted in the literature. Economic development in Yemen cannot be explained without linking it to the discovery of significant quantities of oil in the early 1980's. Since then, Yemen became a classical example of Collier's theory about the interaction of natural resources and politics.

5.2.1 Yemen before oil

The two former Yemens, as well as the new united Yemen, have rarely enjoyed political stability. The south was plagued by intermittent violent conflicts between different factions of the ruling party since the departure of British colonialism in 1967. The most violent conflict, which was considered a civil war, occurred in 1986. Theocratic rule united the North under a religious regime from 1918 until the 1962 revolution which ousted the last

Imam and established a republic. However, a seven year civil war broke out between the Saudi-backed supporters of the former Imam and the new republican government. The latter was supported by Nasser's Egypt. The war ended in 1970 with a national reconciliation agreement, which established a civilian government, and the last Imam was exiled. The country then went through a series of military coups started in 1974, then 1978 and followed by a coup attempt in same year. The military regime brought by the 1978 coup lasted until the unification of the two Yemens in 1990.

5.2.2 North-South conflict

Starting with the collapse of the Soviet Union, the Marxist regime in the (Southern) PDRY lost its closest ally and main supporter for many years. The deterioration of the economic and political situation in the PDRY led the government to seek refuge by integrating with YAR. Meanwhile, the (Northern), more populous, YAR enjoyed modest revenues from the new oil discoveries and from remittances by a large number of Yemeni migrants working in the oil-rich Gulf States. All temptations were present for Southern leadership to solve its crisis through unification with YAR. The leadership in YAR seemed to push for unification for reasons that are different; resolving the border conflict with PDRY at the oil-rich Ma'reb/Shabwa region, which was expected to escalate into serious fighting. Of course, the leadership of YAR had other objectives that materialized later. Being well aware of the PDRY's economic and political difficulties, the leadership of YAR had identified an opportunity to fulfill its ambitions for expanding and reaping the credit of unifying the historical Yemen in one country for the first time in many centuries.

The YAR leadership ambitions were fulfilled when the two countries agreed to unite in May 1990 to form the Republic of Yemen (ROY). The constitution of the new state declared the ROY to be democratic, based on a multi-party system, free press, and preservation of basic human rights. A new parliament was elected and more than 10 political parties were established, led by three major parties: the General People's Congress (GPC), the Yemen Socialist Party (YSP), and the Islamic Yemeni Congregation for Reform (ISLAH) party. Under a power-sharing agreement, former YAR President Ali Abdullah Saleh became the president of the new ROY, while Ali Salim al Beidh, the president of the former PDRY, became the vice president.

Shortly after unification, on May 22, 1991, a second petroleum basin was discovered in the Masila-Jeza area, within the territory of the former PDRY. The new discovery of oil, and the potential economic opportunities associated with it, may have represented an incentive for the Southern elite to start rethinking their decision to merge with YAR. Events had escalated and the concerns voiced by some southern leaders in the YSP about the political consequences of unification and the fear that the "populous" North will turn unity into "annexation" seemed to have materialized. The North-dominated government was blamed for marginalizing the south and using public funds generated from oil to increase its grip on power. The 1993 parliamentary elections resulted in YSP losing part of its seats to the Northern GPC and ISLAH parties. Leaders from the south lost an essentially equal distribution of power.

In the following months, more discontent within the southern leadership built up, and in the beginning of 1994 differences between President Ali Abdullah Saleh and his Southern Vice President Ali Salem Al Bidh surfaced. The Southern leaders refused to join the new government and started moving back to Aden (former PDRY capital). Later events set the

stage for a civil war that erupted on May 4, 1994. A few days later, on May 21, 1994, Southern leaders announced the independence of the South and the establishment of the Democratic Republic of Yemen. However, the new state was not recognized by the international community and the war ended when Northern forces and their Southern allies entered Aden on July 7, 1994. Al Bidh and his fellow leaders from the South fled to neighboring countries and Yemen's unity was preserved. The peaceful cries for independence of the South, which continued after the 1994 war, have been based on the feeling that the North-dominated government is exploiting the South's hydrocarbon resources. This gives a classical example of the influence of resource wealth on politics in Yemen. Of course, mismanagement of resource revenues by the ruling elite was facilitated by weak budgetary institutions, and there was no incentive on the part of the government to change the status quo.

5.2.3 Conflicts within the North

The impact of natural resource rents on Yemen's politics was not confined to the tension between the Northern and the Southern parts of the country but has also affected the relationship between members of the ruling elite within the North as well. The tensions began when in 2007 Yemen was the first country in the Arab World to voluntarily join the "Extractive Industries Transparency Initiative," a global standard to promote openness and accountable management of natural resources" (EITI, 2015). To fulfill the requirements of the initiative new and more transparent oil sale mechanisms were established, which were aimed to increase oil revenues through competitive pricing. The new sale policies eroded the longstanding monopoly over oil sales and created business rivalry between the ruling elite and tribal leaders who were in control of most of Yemen's oil sales.

In February 2011, the wave of the so-called "Arab Spring" hit Yemen when a popular revolt calling for the departure of President Ali Abdullah Saleh began in the capital Sana'a and spread throughout other major cities across the country. The uprising was supported by Saleh's rivals who lost their control over oil sales. A coalition of opposition parties, led by ISLAH, later assumed control over the uprising. After almost 10 months of bloody protests, President Saleh agreed to leave office on November 23, 2011, under the terms of a "transition agreement" brokered by Gulf Cooperation Council and the international community. Saleh's resignation was in exchange for complete immunity for him and his followers. His vice president was assigned to office and later elected by a one-man popular vote to become the president for a two-year transitional period during which a national dialogue conference was conducted to set the roadmap for forming a new country based on a federal system. In 2012, a new interim government, shared equally between the opposition and the former ruling party, was formed. The new government was faced with a host of economic and security problems. The two year transition period was extended and the country fell back into military conflicts in the Northern regions with Al-Houthi Shiite group and in the south with the separatists movement, and overall with the terrorist groups of Al Qaeda.

Due to economic difficulties, the interim government decided in July 2014 to remove fuel subsidies, a decision that resulted in a new popular revolt, led by the Houthi insurgents. Houthi gunmen besieged the capital city claiming their main objective is the reversal of the government's decision. Despite the reversal of the government's decision, Houthis remained in the capital and eventually captured the city on September 21, 2014. In January

2015, Houthi insurgents ousted the interim government and captured all governmental departments in Sana'a and a number of other governorates. Hadi and his government were put under house arrest but he and some members of his government managed to relocate to the Southern capital, Aden.

5.2.4 The impact of natural resource abundance on Yemen's institutions:

Concluding remarks

In the case of Yemen, one may argue that most of the detrimental effects of resource rents described above have appeared since the discovery of commercial quantities of oil and gas. Even though Yemen has gone through a series of political, social, and economic shocks that remained unnoticed by the larger international community, possibly until the first terrorist incident in which the USS Cole was attacked in October 2000, the discovery of oil and gas first in YAR and then in the southern part of the unified Yemen accelerated political tensions and led to weaker government institutions. The available data on the quality of institutions in Yemen does not allow us to compare institutions before and after the discovery of oil and gas. However, the paths of some fiscal indicators clearly show how the increase of hydrocarbon revenues has led to mismanagement of government finances. For example, we have seen how subsidies have increased as higher oil prices meant larger revenues. The same picture is reflected in the tendency of the government to reduce its reliance on tax revenues as hydrocarbon revenues increase. Both examples demonstrate the effect of natural resource revenues in Yemen on its fiscal institutions and fiscal management.

6. Conclusion

The link between resource endowments, institutions and institutional quality has attracted very considerable attention in literature. But only very recently has its link to fiscal rules and institutions been discussed, focusing mainly on developed countries. In this research we attempted to conduct an assessment of the role fiscal rules and institutions play in oil-producing countries outside the developed world. In particular, we analyzed fiscal discipline and the resulting fiscal side of macroeconomic policies in Yemen as an oil producing, but populous, Arab country.

We illustrated that Yemen's economic volatility, and hence poor development experience, was in fact a natural result of the two-way interaction between fiscal institutions and natural resource rents. On the one hand, realizing the benefits from natural resource endowments in Yemen requires adopting an appropriate set of working rules that reduce the unfavorable effects of resource abundance on the quality of institutions. On the other hand, high quality institutions and rules may help improve resource management, contributing to the realization of better economic performance in the future.

It is illustrated that macroeconomic policy performance in Yemen has been pro-cyclical since 1990, showing symptoms of the famous natural resource curse. As a result, the country suffers from economic bottlenecks, which have detrimental effects on its development path. The low quality of fiscal institutions in Yemen has led to fiscal mismanagement of resource rents, contributing to its economic volatility and therefore poor development experience.

Current assessments of the quality of fiscal institutions may be misleading in some aspects. Our findings show that the budgetary process in Yemen is not highly inferior to the average

process in developing countries; in terms of checks and balances. However, it is the absence of an appropriate correction mechanism following the discovery of violations that is causing the poor performance of fiscal institutions. While budgetary guidelines and rules provide a decent set of directions governing the budget during its cycle, they are rarely followed in practice and are frequently defied. There are also no legal consequences that prevent such defiance from being repeated. It is therefore this particular deficiency that deems fiscal institutions ineffective in ensuring good fiscal discipline. Therefore, realizing the most benefits from natural resource endowments requires not only improving fiscal institutions and adopting an appropriate set of fiscal rules, but also creating a working system of checks and balances that ensures that violations are punished and hence not repeated in the future.

The *interaction* between hydrocarbon rents and institutions may further explain poor resource management in Yemen. Low quality institutions led to mismanagement of oil income. However, the political economy aspects of resource management may explain the inferiority of institutions, especially that of fiscal institutions and rules. Competition over resource rents has precluded the possibility of building mature and quality fiscal institutions, and has led to deterioration in the standard of institutional quality that existed before oil was discovered. Therefore, reverse causality between oil rents and institutions in Yemen exists and, together with the impact of low quality institutions, explains to a large extent why hydrocarbon resources did not help lift the Yemeni economy from its backward state.

Finally, Yemen inherited a host of difficulties resulting from the repeated failures of successive governments in utilizing the hydrocarbon windfall to build a strong economy. Reforming government policies to better manage public resources will, of course, help improve the outcome of natural resource endowments. However, the current dwindling oil production, combined with political instability, is unlikely to permit an improvement of fiscal management in the near future. The accumulation of mismanagement of the economy, and public affairs in general, has led to Yemen being so fragile that a civil war is imminent. Until the current political crisis is resolved, natural resources in Yemen may not live up to expectations of improving the Yemeni economy.

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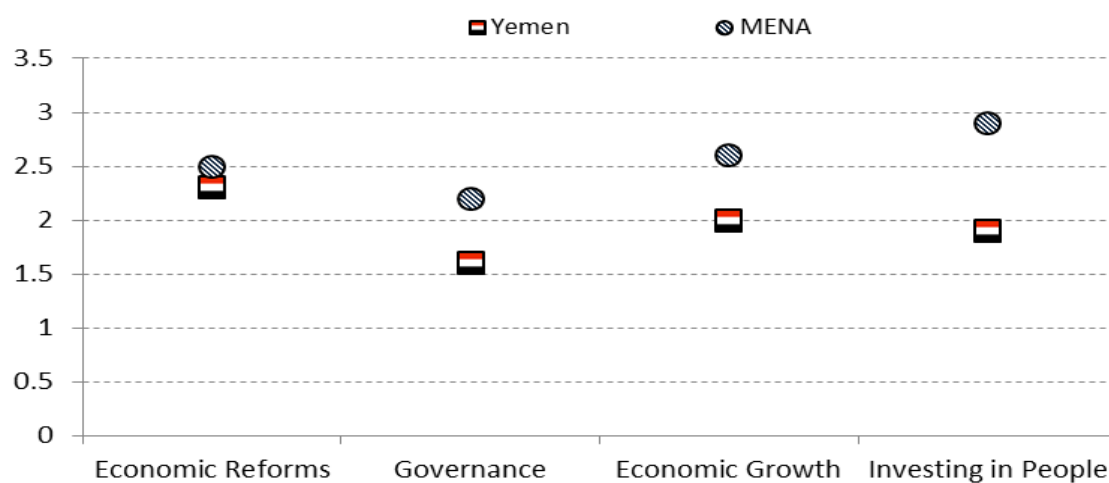
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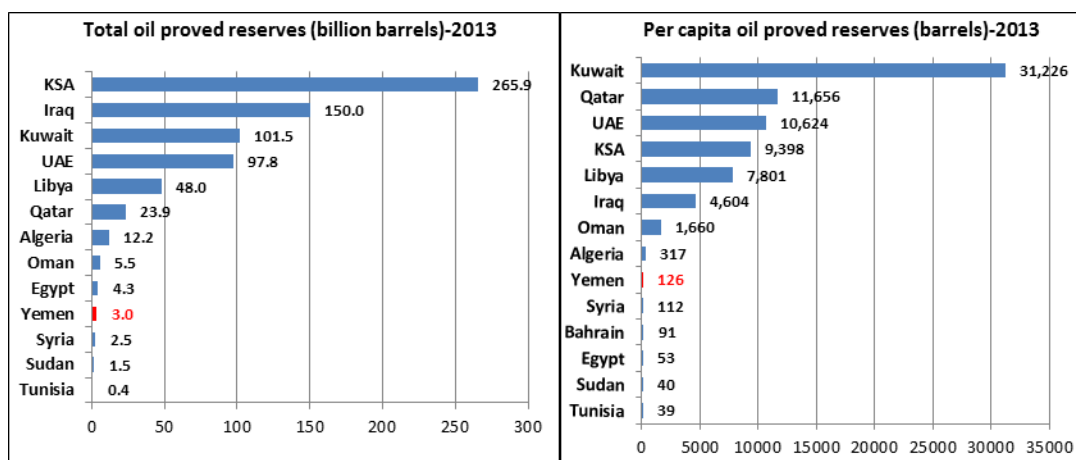
Figure 1: Yemen Development Profile (2009-2010)*



*Based on a 1 to 5 scale , with 5 representing most advanced.

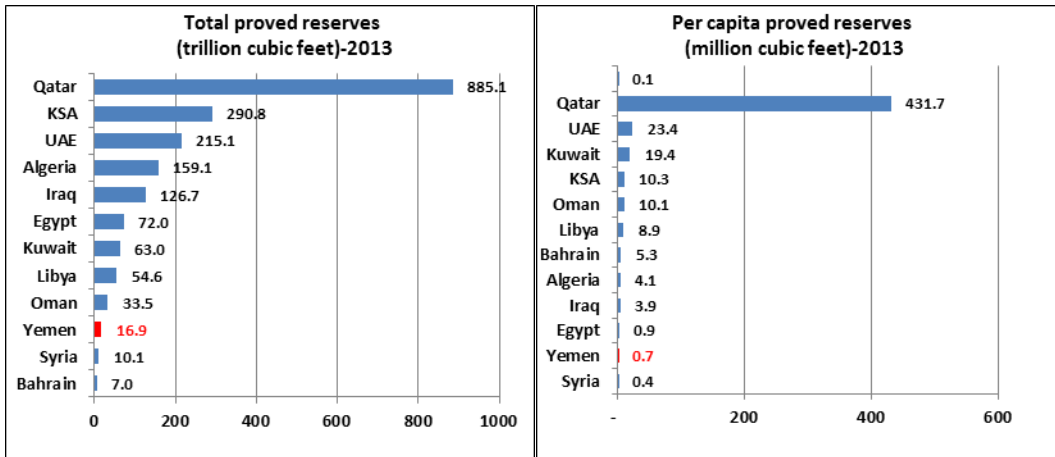
Source: Adopted from USAID (2011).

Figure 2: Yemen's Rank in Oil Reserves among Arab Oil-producing Countries



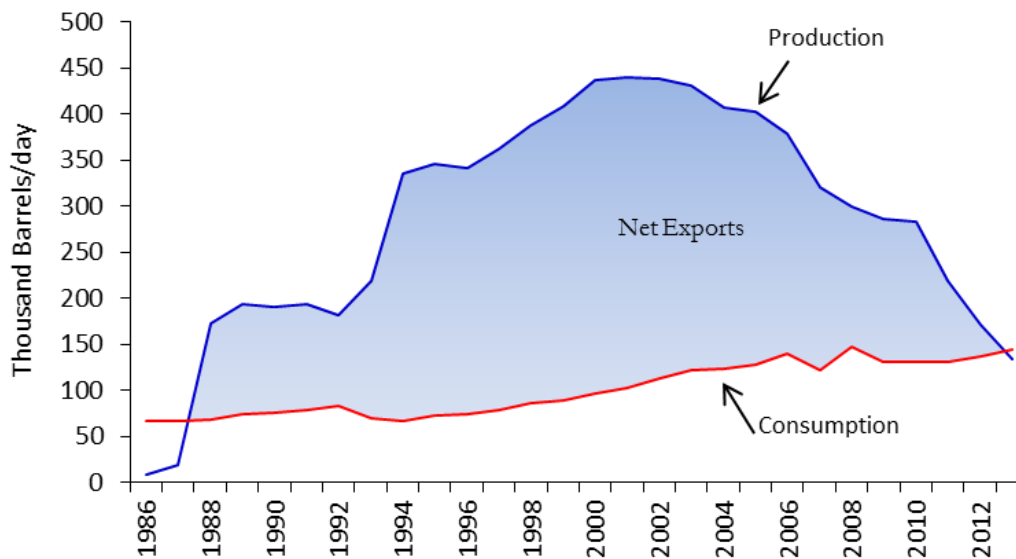
Source of data: BP (2013) and World Bank (2013)

Figure 3: Yemen's Rank in Natural Gas Reserves among Arab Gas-producing Countries



Source of data: BP (2013) and World Bank (2013)

Figure 4: Crude Oil Production and Consumption



Source of data: US EIA , 2013

Figure 5: Yemen and GCC: Oil Dependency (2010)

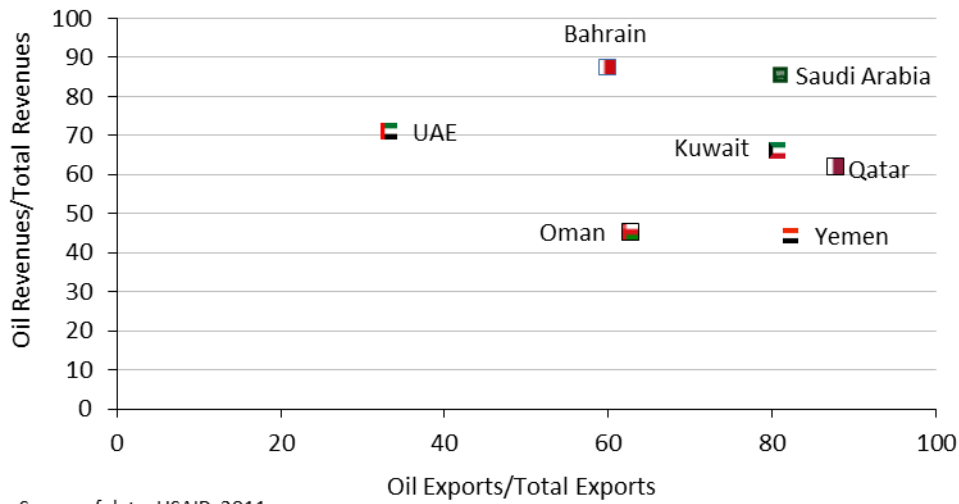


Figure 6: Government Budget and International Oil Prices

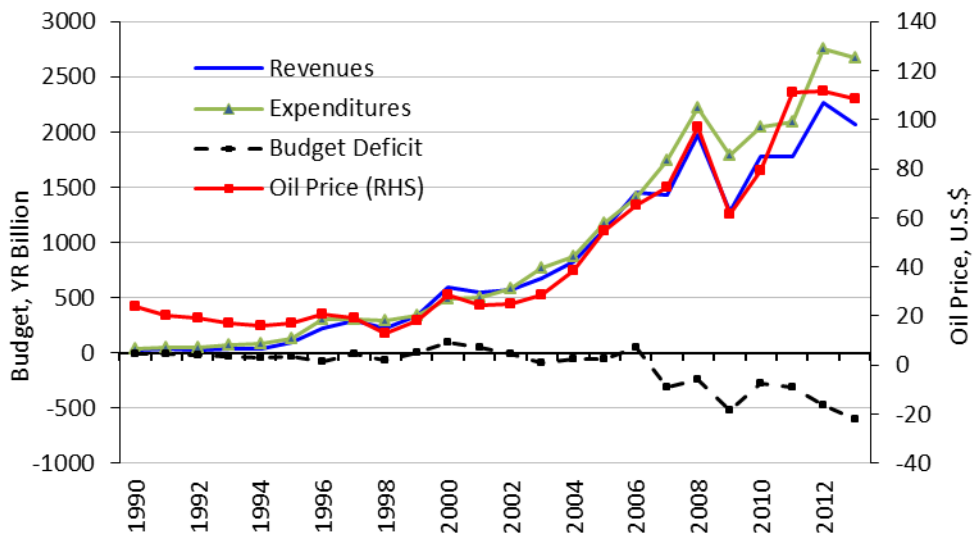
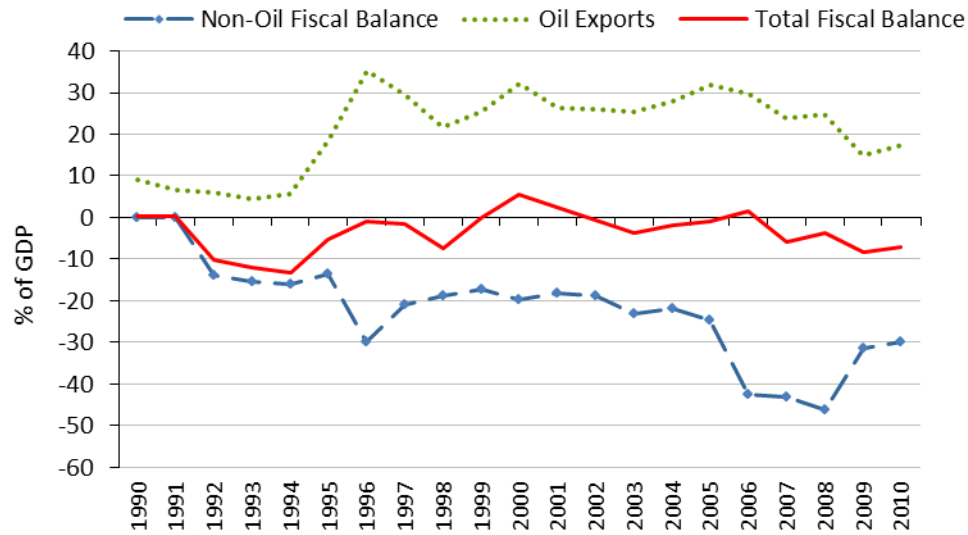
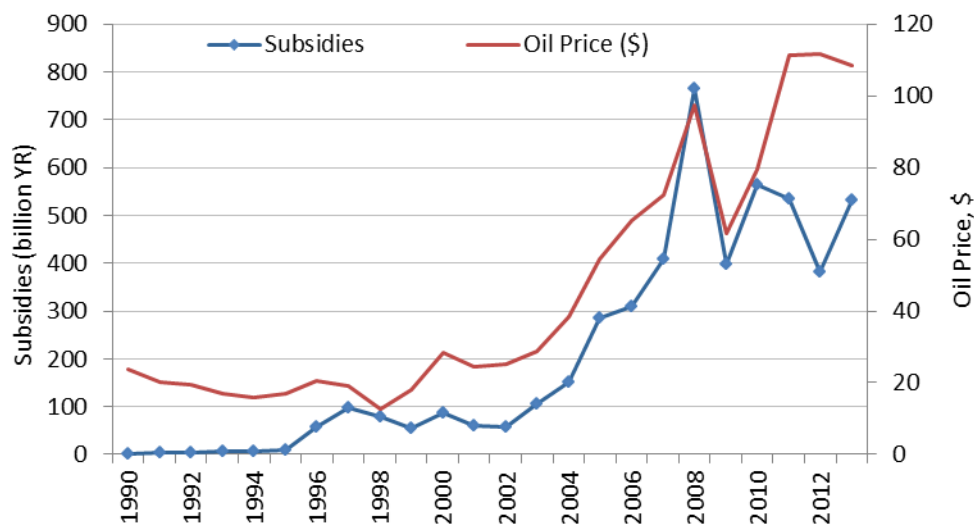


Figure 7: Oil Exports and Non-Oil Fiscal Balance



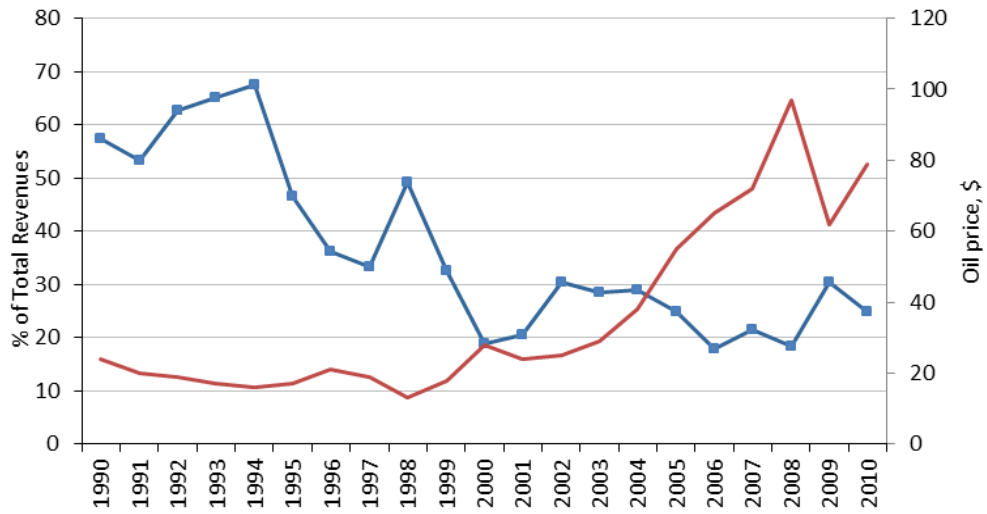
Source of data : MOF

Figure 8: Subsidies in Yemen and International Oil Price



Source of data: MOF and BP, 2014

Figure 9: Government Tax Revenues



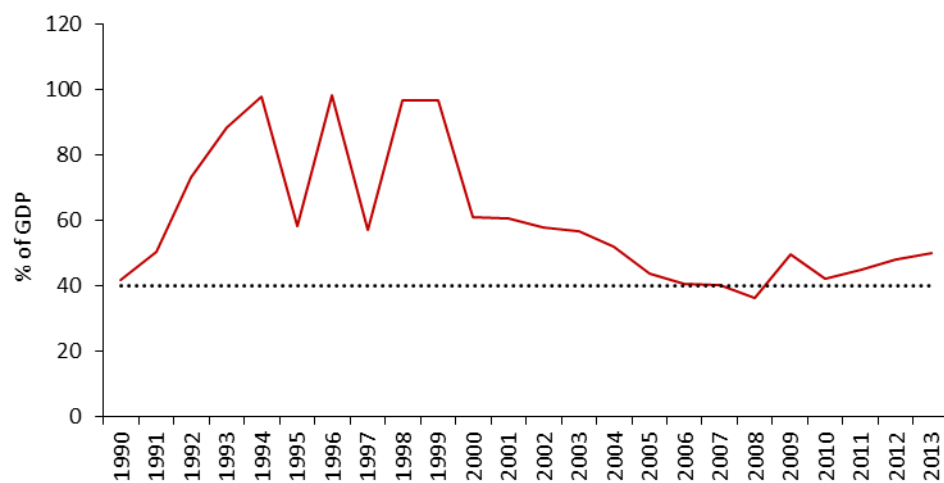
Source of data: MOF and BP, 2014

Figure 10: Government Budget Deficit



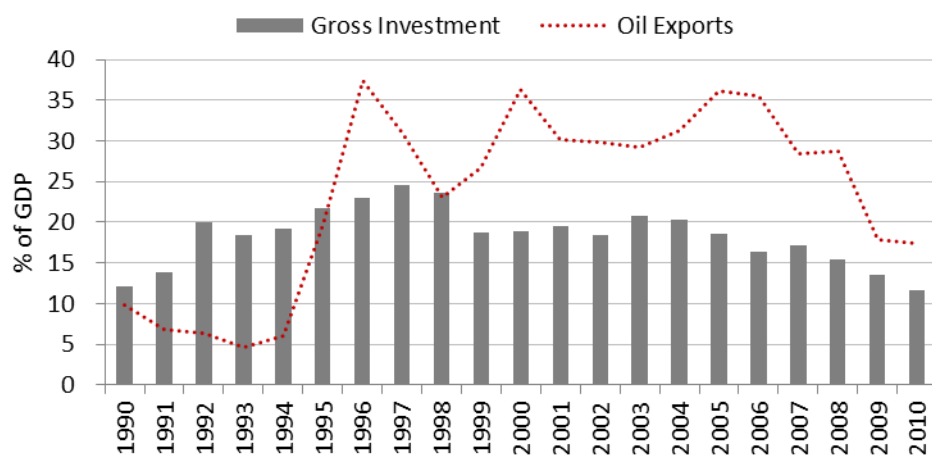
Source of data: MOF

Figure 11: Yemen Public Debt



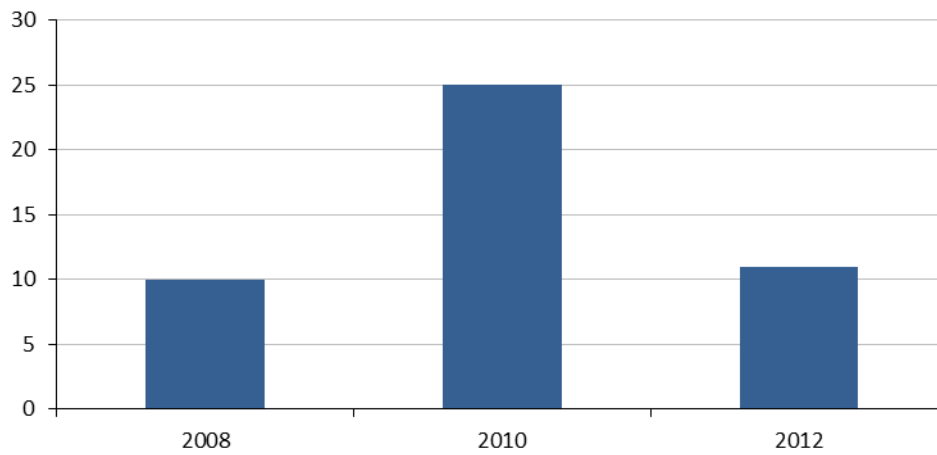
Source of data: Central Bank of Yemen, Annual Report, different issues, and World Bank (2013)

Figure 12: Oil Exports and Gross Investment



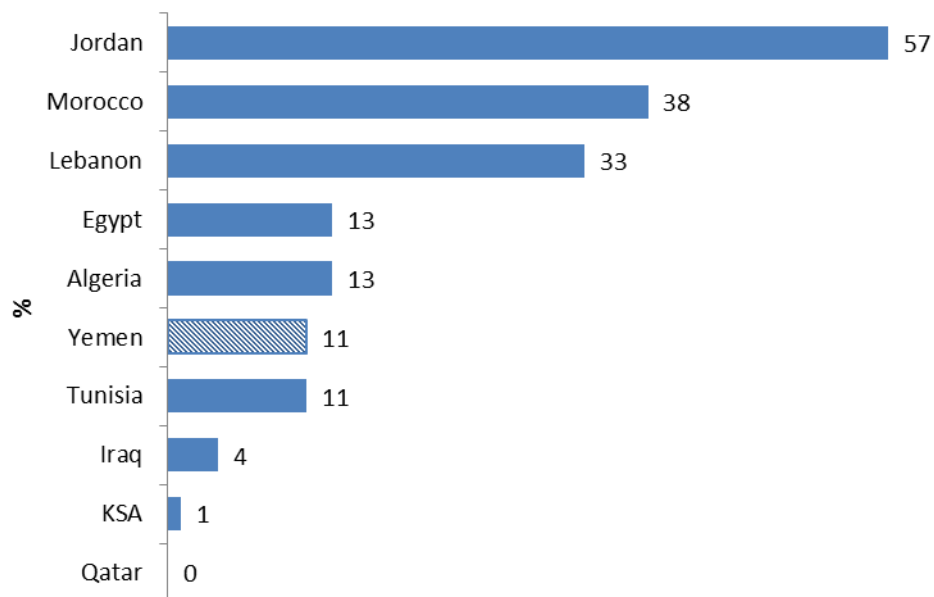
Source of data: IMF, 2010.

Figure 13: Yemen Open Budget Survey Score (%)



Source of data: Open Budget Survey, 2013

Figure 14: Yemen and Other Selected Arab Countries Open Budget Survey Score (2012)



Source of data: Open Budget Survey, 2013

Table 1: Yemen and MENA Selected Economic and Social Indicators, 2012

Indicator	Yemen	MENA Average
Population (million)	25.6	395
GDP per capita (current)	1264	8407
HDI Rank	160	-----
% of population below poverty line	45.2	16.9
% of urban population	32	58
Life expectancy at birth (Years, 2011)	63	72
Infant mortality rate (for every 1000 births)	46	21
% of malnourished infants (under 5 years)-2010	43	12
% of Population with access to safe water-2010	62	87
Health expenditures (% of GDP)-2010	2.1	4.8
Adult illiteracy rate (%)	36	26

Source: World Bank (2013); IMF (2013).

Table 2: Fuel Subsidies and Government Expenditures

Item	Share in total expenditures (%)			
	2007	2008	2009	2010
Fuel subsidies	22.9	33.8	21.2	24.3
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 of data: Central Statistics Organization (2011)

Table 3: Public Budget Cycle in Yemen

Phase	Steps (annual)
Phase One: Budget Planning and Negotiation • The prime minister (PM) • Ministry of Finance (MOF) • Ministry of Civil Services • Ministry of local governments • Ministry of Planning Main and secondary objectives are determined at the unit level. These objectives conform to the objectives of the economic and social development plan.	• Formation of budget supreme committee (Prime Ministry) – Establish the general principles and framework for the preparation of the draft budget. – Discuss estimates of the draft budget and present the resulted draft to the Council of Ministers. • Formation of budget technical committee (MOF) – Design the general framework of the budget. – Study budget proposals and discuss them with different units. – Propose final budget draft to the MOF. • Circular regarding general budget guidelines and estimates (MOF) – Set up guidelines and instructions for draft budget's indicative ceilings. - The financial policies of the draft budget for the fiscal year. - General instructions on the preparation of the general budget draft. - Special instructions on the preparation of the draft budgets at administrative units' level. - Instructions on estimating public resources and uses. - Deadlines of submission of the general budget draft project. • Formation of budget committees (Government units) – Prepare unit draft budgets according to MOF guidelines above. • Preparation of the financial statement to be presented to HOR (MOF) at least two months before the start of the financial year. Includes a presentation of: - Current economic and financial conditions. - The main pillars on which the draft budget was prepared. - The basic objectives of the draft budget. - Fiscal and monetary policies of the government. - The most important indicators in the draft general budget of the state.
Phase Two: Draft Budget Approval MOF, PM, HOR, and the President	• Discussion and approval of the draft law of the aggregate budget (PM). • Discussion and approval of the draft budget by HOR. • Ratification of the budget draft by the President. • Issuing the government budget law.
Phase Three: Budget Implementation MOF, and different administrative units.	• MOF issues executive instructions for budget implementation. <u>Demonstrates the following</u> - Objectives of the rules for the implementation of the state budget. - Instructions for the implementation of the budget on the resources and uses sides. - Help in the implementation of the budget by the general uses. - Instructions regarding transfers between uses.
Phase Four: Budgetary Control Administrative units, MOF, HOR, and COCA.	• Control over the budget through: - Internal control (MOF): at the unit level - External Control (HOR): The discussion and adoption of the budget, audit by the Central Control Center. - Financial reports issued by governmental units: monthly, quarterly and annually, and closing accounts.

Table 4: Resource-Adjusted Saving Rates (% of GDP), (average 1972-2010)

Countries claimed to have escaped the resource curse		Countries claimed to have not escaped the resource curse	
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	Yemen(1990-2010)	-22.5

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

Table 5: Fiscal Rules in Yemen

Rule	Description	Appears to be satisfied?
Budget balance rule	- Constrains the variables that primarily influences the debt ratio and are largely under the control of policy makers. - It sets an <i>explicit target for budget deficit</i> as a percentage of GDP.	Out of 24 years, only in 8 years was the government able to keep the deficit ratio below the targeted 2%.
Debt rule	Sets an <i>explicit limit or target for public debt</i> as a percentage of GDP	Public debt has been historically high, reaching a ratio close to 100% in some years.
Saving/Resource Funds	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.	Majority of resource income have been directed to current expenditures.

Source: Rules are adopted from Schaechter, et. al. (2012) and von Hagen (2002); authors' elaboration for Yemen

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

*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: IBP (2010).

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

GOAL	
Aggregate Fiscal Discipline	Budget Formulation Features 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>. 2. Fiscal oversight limited by level of disclosure and integrity of fiscal information. Budget Execution Features 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. 2. No expenditure controls to execute the line ministries' budget as approved. 3. Fiscal and banking accounts are only partially reconciled. 4. Internal audit is not operational.
Strategic allocation of resources	1. Expenditure allocations between and within line ministries may not be consistent with government policies and priorities. 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. 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).
Effective service delivery	Poor budget planning (and inability to execute budget as approved) at the line ministry level do not support productivity improvements and management/program development.

Source: De la Torre (2008)

Table 8: Legal Basis for the Budget Preparation Process

Timing	Activities	Legal basis
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 Auth. 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)

Table 9: Budget Institutions Index, by Country Groups and Stages

Regions	Overall	Budget Planning & Negotiation	Budget Approval	Budget Implementation
Sub-Saharan Africa	1.78	1.86	1.77	1.70
Asia	1.90	1.94	1.92	1.84
Middle East & North Africa	2.14	2.29	2.33	1.79
Yemen	2.08	1.67	2.22	2.36
Latin America & Caribbean	2.14	2.15	2.11	2.17
Transition Economies ¹	2.30	2.45	2.47	1.97
Low Income Countries	1.89	1.95	1.99	1.73
Middle Income Countries	2.10	2.28	2.01	2.02

Source: Dabla-Norris, et al. (2010) for country groups and authors' interview data for Yemen.

Table 10. Budget Institutions Index, by Country Groups and Categories

Regions	Overall	Top down Procedures	Rules & Controls	Sustainability & Credibility	Comprehensiveness	Transparency
Sub-Saharan Africa	1.81	2.22	1.74	1.62	1.79	1.69
Asia	1.92	2.29	1.89	1.58	1.94	1.91
Middle East & North Africa	2.14	2.69	2.03	1.86	2.17	1.96
Yemen	1.98	1.20	1.81	1.90	2.22	2.75
Latin America & Caribbean	2.18	2.49	2.25	1.98	2.20	1.96
Transition Economies	2.29	2.56	2.27	2.04	2.54	2.07
Low Income Countries	1.91	2.35	1.87	1.69	1.92	1.70
Middle Income Countries	2.14	2.40	2.09	1.92	2.23	2.09

Source: Dabla-Norris, et al.(2010) for country groups and authors' interview data for Yemen.