Extractive Industries Revenue Management: A Tale of Six Countries

Research Report 4

Heng Dyna and Ngo Sothath

April 2013
Phnom Penh, Cambodia
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Heng Dyna and Ngo Sothath
Cambodian Economic Association (CEA)

In Cooperation with
Cambodians for Resource Revenue Transparency (CRRT)

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Phnom Penh, Cambodia
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<tbody>
<tr>
<td>ACG</td>
<td>Azeri-Chirag-Gunashli</td>
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<tr>
<td>BSA</td>
<td>Budgetary Smoothing Amount</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CESD</td>
<td>Centre for Economic and Social Development</td>
</tr>
<tr>
<td>CIT</td>
<td>Corporate Income Tax</td>
</tr>
<tr>
<td>DAU</td>
<td>General Allocation Fund (Dana Alokasi Umum)</td>
</tr>
<tr>
<td>ECA</td>
<td>Excess Crude Account</td>
</tr>
<tr>
<td>EFCC</td>
<td>Economic and Financial Crimes Commission</td>
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<tr>
<td>EI</td>
<td>Extractive Industries</td>
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<tr>
<td>EIA</td>
<td>Energy Information Administration</td>
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<tr>
<td>EITI</td>
<td>Extractive Industries Transparency Initiative</td>
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<tr>
<td>ESI</td>
<td>Estimated Sustainable Income</td>
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<td>FDI</td>
<td>Foreign Director Investment</td>
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<tr>
<td>FGF</td>
<td>Future Generation Fund</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GHF</td>
<td>Ghana Heritage Fund</td>
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<td>GNPC</td>
<td>Ghana National Petroleum Council</td>
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<td>GPF</td>
<td>Ghana Petroleum Fund</td>
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<td>GPSF</td>
<td>Ghana Petroleum Sovereign Fund</td>
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<tr>
<td>GSF</td>
<td>Ghana Stabilization Fund</td>
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<td>GSGDA</td>
<td>Ghana Shared Growth and Development Agenda</td>
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<td>IAC</td>
<td>Investment Advisory Committee</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>IPA</td>
<td>Indonesian Petroleum Association</td>
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<tr>
<td>JOA</td>
<td>Joint Operating Agreement</td>
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<tr>
<td>ISIC</td>
<td>International Standard Industrial Classification</td>
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<tr>
<td>JPDA</td>
<td>Joint Petroleum Development Area</td>
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<td>LTORMS</td>
<td>Long-Term Oil Revenue Management Strategy</td>
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<td>MOF</td>
<td>Ministry of Finance</td>
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<tr>
<td>MPR</td>
<td>Ministry of Petroleum Resources</td>
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<tr>
<td>MTEF</td>
<td>Medium Term Expenditure Framework</td>
</tr>
<tr>
<td>N</td>
<td>Naira (Nigerian currency)</td>
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<tr>
<td>NDC</td>
<td>National Democratic Congress</td>
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<tr>
<td>NIF</td>
<td>Nigerian Infrastructure Fund</td>
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<tr>
<td>NNOC</td>
<td>Nigerian National Oil Corporation</td>
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<tr>
<td>NNPC</td>
<td>Nigerian National Petroleum Corporation</td>
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<td>NOC</td>
<td>National Oil Companies</td>
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<td>NPP</td>
<td>New Patriotic Party</td>
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<td>NRF</td>
<td>Natural Resource Fund</td>
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<td>NSIA</td>
<td>Nigeria Sovereign Investment Authority</td>
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<td>OGJ</td>
<td>Oil and Gas Journal</td>
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<tr>
<td>OPEC</td>
<td>Organization of Petroleum Exporting Countries</td>
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<tr>
<td>PDP</td>
<td>People’s Democratic Party</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>PF</td>
<td>Petroleum Fund</td>
</tr>
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<td>PHF</td>
<td>Petroleum Holding Fund</td>
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<tr>
<td>PIH</td>
<td>Permanent Income Hypothesis</td>
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<tr>
<td>PPL</td>
<td>Public Procurement Law</td>
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<tr>
<td>PSC</td>
<td>Production Sharing Contracts</td>
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<tr>
<td>PVN</td>
<td>PetroVietnam</td>
</tr>
<tr>
<td>REER</td>
<td>Real Effective Exchange Rate</td>
</tr>
<tr>
<td>SDP</td>
<td>Strategic Development Plan</td>
</tr>
<tr>
<td>SF</td>
<td>Stabilization Fund</td>
</tr>
<tr>
<td>SIP</td>
<td>Sectoral Investment Programme</td>
</tr>
<tr>
<td>SOCAR</td>
<td>State Oil Company of the Azerbaijan Republic</td>
</tr>
<tr>
<td>SOE</td>
<td>State Owned Enterprise</td>
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<tr>
<td>SOFAR</td>
<td>State Oil Fund of Azerbaijan Republic</td>
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<tr>
<td>SPA</td>
<td>State Procurement Agency</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
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<tr>
<td>USD</td>
<td>United States Dollars</td>
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<tr>
<td>VAT</td>
<td>Value Added Tax</td>
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<tr>
<td>WB</td>
<td>World Bank</td>
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Executive Summary

Introduction

Good governance of the extractive industries requires long-term planning, starting at an early stage in the sector’s development, coupled with long-term fiscal transparency. This report attempts to draw upon observed experience of extractive industries (EI) revenue management from countries with a similar level of governance and economic development and make recommendations for future EI revenue management in Cambodia.

The study covers six countries, which were chosen based on a number of key indicators: GDP per capita, poverty rate, income inequality, fiscal performance, and level of governance. These countries are Azerbaijan, Ghana, Indonesia, Nigeria, Timor Leste, and Vietnam. The selection of the countries was also a result of consultation with relevant authorities and civil society organizations in Cambodia.

Large resource revenues may allow resource-rich countries to significantly augment their financial resources to address poverty and improve basic public services in education, health, and infrastructure development. However, macroeconomic management in these countries can be difficult because natural resources are exhaustible, which raises inter-generational considerations and exposes the need for balance between government consumption and saving for the long run. On the other hand, despite the need for the human and infrastructure development, rapid fiscal expansion carries risks. Specifically, much higher public expenditure could result in a buildup of inflationary pressure, which would create an economic anomaly and impair non-oil sector competitiveness. Moreover, resource-dependent countries can be vulnerable to boom-bust cycles as the resource revenue fluctuates with the world market commodity prices.

After resource revenues have been collected, the government must decide on their management and allocation, i.e. how much to spend on what. The economic models of spending are important because they are directly linked to the country's development path and the risks associated with ‘resource curse’. Generally speaking, in managing resource revenue, governments need to address the following issues:

• Needs for social and infrastructure development
• Choice between current and future benefits (inter-generational equity)
• Policy design to deal with volatility of resource price and its depletion
• Enhancement of domestic capacity to absorb the spending from the resource revenue
• Transparency and accountability

These considerations need to be accompanied by a policy on how to spend petrodollars appropriately and effectively for growth and poverty reduction. In general, three overarching issues need to be carefully addressed in order to determine a future sustainable stance of public expenditures: (i) aggregate fiscal discipline; (ii) allocation efficiency; and (iii) operational efficiency.

In response to these challenges, resource-rich countries have adopted a number of spending-saving models. The models are often selected based on the stage of economic development and political economy in each country. These models are as:

• ‘Big-push spending’ model. In this model, government would implement high spending in the early years in order to accelerate investment in infrastructure and other important sectors to speed up economic growth and poverty reduction. However, this type of model would involve risks of unstable government spending, macroeconomic instability, and inflation pressure. It would also tilt the economy toward non-tradeable sectors, increasing the risk of the Dutch Disease. Under this spending model, government spending would be subject to “boom-bust” cycles due to volatile commodity prices.

• The Bird-in-hand model. In this model, the government places all hydrocarbon revenues in a fund and is only allowed to annually withdraw a pre-determined percentage of the value of the previous year's fund for the state budget. This model heavily discourages current expenditure of resource revenues in favor of saving more for future generations. There could be a high opportunity cost in terms of foregone social and infrastructure spending at the early stage of economic development. This model is usually not recommended for countries with low growth and high poverty rate.

• Sustainable Income Model (Permanent Income Hypothesis). Under this rule, both individuals and benevolent governments should be considered forward-looking, trying to smooth consumption over time in line with permanent income. Hence, expenditures out of natural resource proceeds would be stable, avoiding boom-bust cycles. However, this rule faces difficulty in future revenue estimations due to the uncertainty of oil prices and imprecise estimates of oil reserves.
Revenue-benchmarking model (Ghana). In this model, the government would decide a fixed share or variable share of average resource revenue and returns from the asset. This model, however, does not guarantee fiscal sustainability or optimal intergenerational consumption of resource wealth as it is subject to discretion.

Country Experiences

Azerbaijan

Azerbaijan faces a big risk of inefficiency and fund misuse due to its relatively weak institutional capacity. The economic growth in Azerbaijan has been mainly driven by state expenditure. The country has had a legacy of centralized economic planning. Nonetheless, the Azerbaijani government has indeed been committed to exercising considerable caution over the use of the expected oil and gas windfall and to ensuring that the benefits resulting from the exploitation of this natural asset would accrue to all citizens and to future generations.

The management of oil and gas revenues in Azerbaijan is based on both saving and spending. The sudden burst of revenue, abruptly followed by precipitous decline in revenue flows in Azerbaijan, suggested a need to save some of the revenues for future generation thus avoiding the problem of ‘absorption capacity’. To manage the resource revenue, Azerbaijan established the State Oil Fund of Azerbaijan Republic (SOFAR), which accumulates Azerbaijan oil revenue and serves as an extra-budgetary fund to ensure the macroeconomic stability, transparency in the management of oil revenue, and the safeguarding of resources for future generations. Expenditures from SOFAR, whether as budget support or project-specific assistance, have to be approved by the President. Meanwhile, parliament exercises limited control over spending because it neither writes nor amends the budget proposal drafted by the Ministry of Finance, but can only reject or approve the budget. In short, SOFAR governance remains largely concentrated on the president of Azerbaijan, with only limited checks and balances such as annual audits, parliamentary approval of expenditure decisions.

Given the characteristics of oil revenues, the Azerbaijan government created a Long-term Oil Revenue Management Strategy (LTORMS) in 2004 that adopted the principle of ‘constant real spending’, which is equivalent to the Permanent Income Hypothesis (PIH) approach. Nonetheless, during the early stage of the oil boom (2005-07), the Azerbaijan government implemented an exceptionally large expenditure increase to improve infrastructure and to raise income. The total government expenditure in
2008 jumped 370% as compared to that in 2005, or from 41% of non-oil GDP in 2005 to 74% in 2008. In addition, the government intended to raise the level of public sector wages and social benefits. Such increase in expenditure poses the question of whether it is appropriate and whether it is sustainable from a long-term perspective.

The transfer from SOFAR to the state budget has been significant since 2008 due to the oil boom. These levels might not be consistent with the objective of SOFAR – to preserve oil revenue for future generations. The question arises: what budgeting arrangement and policy framework allows for such a rapid increase in withdrawal? On paper, Azerbaijan’s SOFAR assigns primacy to saving objectives, i.e. the total amount of outflows cannot exceed inflows in any given year. In practice, however, SOFAR funding has been allocated to the state budget to finance public investments including those not planned for in the budget.

The experience from Azerbaijan provides two important lessons on natural resource revenue management and economic model of expenditure: First, Natural Resource Fund plays an important role in oil resource management, especially during the boom years. However, a clear principle of resource management is needed to ensure that the resource fund is managed in a way that maximizes the benefits of the whole economy. Second, the experience in Azerbaijan suggests that sound budget management and strong institutions for effective and efficient public expenditure execution are essential to avoid the disappointing experience of many natural resource rich countries. Otherwise, risks associated with the increase in expenditure can increase and accelerate over time.

Ghana

Ghana is employing the revenue benchmark model. As a means for the management of petroleum revenue, the Petroleum Holding Fund (PHF) and the Ghana Petroleum Funds (GPF) were established at the central bank. PHF is a transitory fund, designated as a public fund at the Bank of Ghana, to receive the petroleum revenue collected by the Ghana Revenue Authority and to disburse the fund to the Annual Budget and the Ghana Petroleum Funds (GPF).

The GPF was established to receive the disbursement of the excess revenue from the Petroleum Holding Fund (PHF). It comprises two separate Funds: Ghana Stabilization Fund (GSF) and Ghana Heritage Fund (GHF). These two Funds will be consolidated into one single Fund, called Ghana Petroleum Sovereign Fund (GPSF), following the depletion of the petroleum reserve. GSF is established with an objective to cushion the impact of, or sustain public expenditure capacity, during periods of unanticipated petroleum revenue shortfalls. GHF, on the other hand, will provide an endowment to
support development, through investment, for future generations when the petroleum reserves have been depleted.

An important lesson from Ghana is that the revenue flows are complex, involving many stages and institutions before finally reaching the government’s account. This gives opportunity for fund leakages. Moreover, the fiscal regime is constrained by the high degree of recurrent expenditure, particularly the sizeable expenditure on wages and interest. On the other hand, Ghana’s political business cycle features high risk of political capture of mineral rents. The empirical evidence suggests that the government runs an exceptionally high degree of fiscal spending in pre-election years in order to please swing voters.

Ghana is fortunate to have a strong civil society and judiciary that is, to a large extent, independent and free from political influence. However, the Parliament lacks a vibrant committee system and is not capable of exercising its management role over the executive branch. Weak parliament is explained by the fact that parliamentarians are beneficiaries of the presidential patronage, which therefore limits their freedom to closely scrutinize and hold the executive accountable.

**Indonesia**

Despite its large revenue from natural resources, Indonesia has never established a natural resource fund. It adopts the big-push spending model by treating resource revenues as fiscal revenue that all directly goes to finance the public expenditure through the annual budget process. Nonetheless, Indonesia has implemented the revenue sharing approach for transferring some of the resource revenues to the subnational levels.

Indonesia’s fiscal space is limited by low tax revenue. In addition, the economy remains highly subsidized, particularly the energy subsidy. In 2011, total subsidy expenditure was USD 34 billion, accounting for 4% of the GDP. At the same time, the ambiguous production of oil and gas together with the depletion of reserves may threaten the fiscal stability over the medium- and long-terms.

An important lessons from Indonesia is it was able to minimize the risks of Dutch Disease by keeping its agriculture and manufacture sectors competitive in the global market. Indonesia has invested in agricultural technology and diversified its manufacturing industry and therefore managed to increase its exports of agricultural products and manufacturing goods since 1970.
Nigeria

Nigeria has been well known for its poor management of the oil revenues and thus the ‘resource curse’. It has gone through periods of political instability and poor governance. Nigeria has more recently enjoyed the longest period of uninterrupted civilian rule since 1999.

The petroleum resources are centrally owned and managed by the federal government, not individual states. As such, the authority to manage the industry, as well as to collect the revenue from the industry, is in the jurisdiction of the Federal Government. In general, Nigeria did not start saving its petroleum revenue until 2004 when it established the Excess Crude Account (ECA) and introduced a budget oil price-based rule. This was intended to protect the fiscal regime from being vulnerable to high volatility of international oil price, as well as to insulate the Nigerian economy from external shocks. The budget oil price-based rule requires that the annual budget be based on a pre-determined oil price (revenue benchmarking), which is usually reached through negotiation between the executive and the legislative, although it has to be finally approved by the National Assembly.

The non-saving (big-push spending) fiscal regime, before 2004, made Nigeria very vulnerable to shocks, given its high dependency on petroleum revenue and the volatility of international oil prices through its oil exports. Nigeria has actually experienced hard times of revenue fluctuation in its history. Despite recent improvement in oil revenue management, by adopting the revenue-benchmarking model, Nigeria has still been faced with a number of challenges.

First, revenue flows have to pass through many stages and institutions before reaching government accounts. This complexity gives opportunity for fund leakage and misuse. Second, ECA was not well shielded and thus vulnerable to abuses. From original design, the ECA could only be drawn up if actual receipts of oil revenue fall short of budgeted amounts. However, as the ECA accumulated large balances, more and more political pressures were placed on the spending of the ECA. Third, the economy is highly distortionary. Currently, it is running at a substantial cost of fuel subsidy, which accounts for about 4% of GDP in 2011. Such high cost of subsidy distorts the market and makes the economy at large uncompetitive and unsustainable.

Moreover, the bigger role of the government in the economy may undermine the role and contribution of the private sector. In addition, the current arrangement still makes the economy unhealthy as it leaves the fiscal regime highly dependent on hydrocarbon sector and thus undermines the role of the non-oil revenue, particularly the role of taxes.
Recently, Nigeria further made improvements in the management of its oil revenue by establishing the sovereign wealth fund, called Nigeria Sovereign Investment Authority (NSIA) to replace the ECA. This is to ensure a sustainable use of hydrocarbon revenue, as well as to prepare the country for the eventual exhaustion of oil and gas reserves.

**Timor Leste**

The mechanism the Timor Leste Government uses to manage petroleum revenue is based on two objectives: ensuring that the petroleum revenue cannot be illegally used and promoting the wise use of the petroleum revenue.

The Petroleum Fund (PF), which follows the Norwegians-style Petroleum Fund, is the cornerstone for managing Timor Leste’s oil revenue. The Petroleum Fund can be described as a savings fund. According the PF Law (2005), all income from oil and gas production must go to the PF while withdrawals can only be made to the state budget. In other words, it is a government account with the central bank to which the petroleum receipts are credited and from which debts can be made to finance the state budget. PF is managed by Ministry of Finance but operated by the central bank, i.e. Banking and Payment Authority. The Petroleum Fund Law of Timor Leste determines in detail the definition and receipt of petroleum revenue, what is deposited into the Petroleum Fund, how the revenue should be invested, and the expenditure of the revenue. However, the Petroleum Fund Law does not define how petroleum revenue is spent.

Oil and Gas revenue is paid into the Petroleum Fund and transfers from the Fund account are subject to a spending ceiling. The PF is integrated into the central government budget and its resources can only be spent through the budget following Parliamentary approval. The ‘sustainable’ spending ceiling is set to preserve the real value of the petroleum wealth for future generations and to protect against the impact of volatile petroleum revenue. The annual sustainable ceiling is equal to the sum of domestic non-oil revenue and the estimated ‘sustainable’ income (ESI) from the estimated long-term oil wealth (including the reserves in the ground). The ESI, as defined in the petroleum Fund law, is 3% of total petroleum wealth. The total petroleum wealth is the sum of the current PF balance and the net present value of future petroleum receipts. The ESI is calculated every year based on a set of assumptions about oil output and prices. The estimation of ESI is required by PF Law in order to make prudent assumptions reflecting international best practice and international standards.

Practically, the ESI is a benchmark to guide withdrawals from the PF and to inform policy discussion. In principle, transfers the PF will only be made to finance the non-
oil fiscal deficit. Moreover, the sum of all transfers in a fiscal year may not exceed a ceiling set by the Parliament on the basis of the fiscal sustainability policy. In practice, nonetheless, the withdrawals can exceed the ESI, but only with approval from parliament based on the justification that such a withdrawal is in the long-term interest of the country.

Since 2006, the government has scaled up its infrastructural development using the Petroleum Fund. To avoid the negative effects of rapid fiscal expansion, the government has introduced the Sectoral Investment Programme (SIP) for investment in infrastructure and human capital, which has supported growth, absorbed employment, and raised factor productivity in the wider economy.

Although Timor Leste has one of the best mechanisms to manage petroleum revenue, it is still subject to many challenges. First, institution building remains a major challenge to Timor Leste’s governance. For instance, the lack of skilled personnel is the key constraint to public financial management reform, which is essential in oil revenue management. Second, the transfer from the PF to the state budget is based on ESI, which is subject to large uncertainty due to volatile oil prices and imprecise oil reserves. Third, as the PF is based on the saving-Norwegian Petroleum Fund of Norway, there has been a concern that Timor Leste saved too much of its oil revenues, rather than spent them on social projects for poverty reduction.

**Vietnam**

The oil sector in Vietnam is dominated by a state-owned Vietnam Oil and Gas Corporation (known as PetroVietnam, which is under the authority of Ministry of Industry and Trade). In Vietnam, as petroleum is treated as a typical industry, almost all taxes, fees, and charges are paid to the central budget and PVN Group, including environmental projection fees and natural resource taxes. Oil firms are required to pay direct taxes such as VAT, personal income tax, export-import tax, corporate income tax, and natural resource tax to the central budget. In this regard, it is more important to see the management of revenue inflows, rather than spending in the case of Vietnam.

All charges and fees and some taxes, like taxes on the lease of agricultural land or non-agricultural land for mining exploration, are paid to the local budget for local development. Other taxes, such as VAT, corporate income tax, personal income tax, and import-export tax are sent to the central budget, which are then allocated nationwide with approval from the National Assembly.
As a result of these practices, it is difficult to link the spending patterns of the government to the oil revenues. Nonetheless, it has been observed that, relative to its Asian peers, Vietnam has performed poorly on the key macroeconomic indicators in recent years, especially over the past three years, and during the global financial crisis in 2008. The Vietnamese inflation rate was as high as 23 per cent in 2008 before dropping to 7.5% in 2009-2010. However, inflation rose again in 2011. At the same time, the value of Vietnamese dong has eroded over time, with the nominal exchange rate increasing from 14,100 dong/USD in 2000 to 1,630 dong/USD in 2008, and 20,509 dong/USD in 2011. Such depreciation has indeed hurt the public confidence in the Vietnamese Dong and encourages dollarization in Vietnam. In short, the macroeconomic instability in Vietnam, over the last four years, is characterized by high inflation, large budget and trade deficits, and unreliable local currency.

Two important lessons can be learned from Vietnam: First, as the oil revenue is not the only dominant source of state revenue in Vietnam, it is treated as a typical industry where revenue flows into the central budget. However, there is some ambiguity about the types of fees and charges and management of certain of these fees and charges, as well as the petroleum clearance fund. Second, the oil sector in Vietnam is dominated by State-owned enterprises (SOE), which have been partly linked to resource misallocation, but also charged with damaging the vibrancy and competitiveness of the private sector. At the same time, the macroeconomic instability, characterized by high inflation, large budget and trade deficits, and unreliable local currency, are in fact unavoidable consequences of the problems related to resource misallocation, weak competitiveness, heavy dependence on external and natural resources and government ineffectiveness.

**Synthesis**

The review suggests that natural resource revenue can be managed and can be useful for economic development. However, a good mix of macroeconomic, fiscal, and exchange rate policy needs to be in place to minimize the Dutch Disease and to ensure macroeconomic stability. The experience in the six countries also illustrates the differences between the countries regarding the variety of objectives in managing and spending the natural resource revenues, challenges in adhering to established rules, the institutional arrangement, and the fiscal soundness and sustainability in each country.

Overall, the quality of institutions is crucial for the effective utilization of the EI revenues and the national development strategies. The best practices largely depend on the quality of fiscal spending and sustainability of fiscal policies across political
regimes over time. In other words, a country needs to have a long-term development plan accompanied by a series of medium-term plans with clearly identified priorities for development and financing needs. A successful development strategy often has three key components:

(i) a time path of public investments suited to national conditions
(ii) economic policy frameworks to promote the private sector
(iii) a political framework to ensure the rule of law and macroeconomic stability.

The saving-spending models should be adopted depending on the country’s stage of economic development, quality of institutions, and the size and nature of resource revenue flows.

An in-depth analysis on Cambodia is needed in order to formulate specific recommendations for spending on what and how much. Nonetheless, based on the theoretical and empirical reviews in this study, the authors recommend that Cambodia should undertake the following with regard to its oil resource revenue:

• **Strike the right balance of saving-spending through creation of an oil fund.** Indeed, there are incentives for Cambodia to spend the resource revenues, given its need for social and infrastructure development. However, there are also good reasons for Cambodia to save some portion of the revenue, at least for stabilization purposes, given its weak institutions and the limited role of formal taxation. In our view, Cambodia should consider a revenue-benchmarking model, in which the government would decide a fixed share or variable share of average resource revenue and returns, and save the excess revenue in a stabilization fund.

• **Standardize oil contract types to minimize the complexity of revenue flows.** Cambodia should have a standard contract term which may make it easier for government to monitor contracts. As the chart of revenues in Nigeria shows, the more steps that are involved between revenue generation and their final receipt by government, the more opportunities there are for linkages.

• **Develop production-monitoring capacity.** Relevant authorities have to be well-trained to monitor EI production and export. Otherwise, government would have to believe all the figures provided by oil companies.
• **Develop clear roles among government agency.** All relevant agencies, not only petroleum authority or advisor, should build their capacity and have their clear roles in revenue flows and spending. At the same time, Cambodian fiscal institutions should be further strengthened in order to manage the resource revenue effectively.

• **Enhance budget transparency and accountability.** As outlined in the six countries, budget transparency and accountability is essential in the management of resource revenue. Thus, a review board with representatives from government, donors, and civil society can help promote transparency and accountability in the resource revenue management in Cambodia.
1.1 Introduction

The presence of abundant natural resources has been a mixed blessing for many countries. Economic performance of resource-rich countries is often poor when compared with similar countries without resources (see, for example, Sachs and Warner 1995, Sala-i-Martin and Subramanian 2003). Despite the potential of resource revenues for infrastructure and social development, economic growth can be disappointing because the influx of capital can make the economy less competitive through the appreciation of the real exchange rate. This phenomenon is often known as the ‘Dutch Disease’. Moreover, the large strata of the population in many resource-rich countries remain in poverty, well known as the ‘resource curse’. Against this background, questions arise as to how resource-rich countries manage their resource revenues? What have been the challenges in these economies?

Natural resource revenue management involves two aspects: i) transparency and accountability in the management of the natural resource revenue, and ii) economic spending (saving versus stabilization function). Experience in many countries has repeatedly shown that sustainability depends on rapid progress being made in structural reform and institutional capacity building. In the absence of these two crucial factors, the large fiscal stimulus of new resource revenue may well result in real exchange rate appreciation, loss of efficiency, competitiveness and growth, and subsequently unviable public and private investment projects. As experience in many countries also shows, transforming EI revenues into development is not an easy short-term task. It poses a lot of challenges, both economic and institutional.

Good governance of EI revenue matters as early as the initial exploration stage, through to auctions and contracting, saving-spending models, and long-term fiscal transparency. In Cambodia, with the expected significant revenue increase from oil and gas extraction in 2016, the search for economic models of EI revenue management is timely and important. How to manage and use resource revenue productively across generations is a crucial question, as resource-rich countries need to be well prepared before the influx of the revenue.

The EI revenue influx can help Cambodia address financing constraints in its infrastructure development, health, education and institutional building, thus speeding up its economic development process and reducing poverty. However, Cambodia should be mindful that very few developing or transitional economies with a rich petroleum endowment have become success stories in development and poverty elimination. Questions on how a resource endowment should be managed effectively and productively need to be well thought well out if Cambodia wants to
avert the natural resource curse. In this regard, understanding the practices of EI revenue management in various countries and their successes, as well as their failures, is crucial for policymakers.

This report attempts to draw upon the experience of EI revenue management from resource-rich countries with regards to governance and economic development. The study covers six countries, which were chosen based on a number of key indicators: GDP per capita, poverty rate, income inequality, fiscal performance, and level of governance. These countries are Azerbaijan, Indonesia, Ghana, Nigeria, Timor Leste, and Vietnam. The following Table summarizes the key indicators in all the seven countries.

**Table 1.1: Key Indicators in the Six Countries**

<table>
<thead>
<tr>
<th></th>
<th>Cambodia</th>
<th>Azerbaijan</th>
<th>Ghana</th>
<th>Indonesia</th>
<th>Nigeria</th>
<th>Timor-Leste</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI revenue/pc (USD)</td>
<td>–</td>
<td>28</td>
<td>1,660</td>
<td>18</td>
<td>45</td>
<td>125</td>
<td>2,773</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>63</td>
<td>64</td>
<td>70</td>
<td>58</td>
<td>64</td>
<td>65</td>
<td>45</td>
</tr>
<tr>
<td>Poverty rate (%)</td>
<td>30 (2007)</td>
<td>50</td>
<td>16</td>
<td>39</td>
<td>29</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Gini index</td>
<td>38</td>
<td>35</td>
<td>33.7</td>
<td>41</td>
<td>42</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>Government effectiveness (percentile rank)</td>
<td>26</td>
<td>16.6</td>
<td>248</td>
<td>50</td>
<td>53</td>
<td>29</td>
<td>46.4</td>
</tr>
<tr>
<td>Control of corruption (percentile rank)</td>
<td>13</td>
<td>6.34</td>
<td>126</td>
<td>54</td>
<td>60</td>
<td>10</td>
<td>22</td>
</tr>
</tbody>
</table>

*Source: World Development Indicators and Worldwide Governance Indicators (World Bank)*

### 1.2 Promises of Natural Resources

Natural resources can be additional and valuable assets that have the potential to bring economic benefits to a country. Resource revenues can support higher levels of public investment, usually out of the revenue itself and out of the borrowing based on expected resource revenues. In this regard, resource revenues can help address the lack of fiscal space needed to expand necessary public benefits such as education, healthcare, and infrastructure, all of which are key elements of countries’ development strategies. Moreover, natural resource revenues can boost living standards by financing higher levels of public and private consumption (i.e. cash transfers and certain kinds of subsidies). Therefore, resource revenues, if properly managed, can play an
important role in promoting economic development in low-income countries while providing important financial benefits to the broad-based population.

1.3 The Peril of Natural Resources

Natural resource revenues, if not managed well, do not fully benefit the economy. They may even get partially lost due to inefficiencies in the system and management, or can be harmful for sustainable economic development. This is a well-known phenomenon with resource-rich countries. Terms such as ‘the resource curse’ and ‘the paradox of plenty’ have been coined by economists and other social scientists to denote the possibly hazardous effects from natural resource income in the economy. As experience in Nigeria and many other countries shows, resource-rich countries have often performed well below their potentials and sometimes even disastrously.

Why does natural resource wealth often do more harm than good? Where does the resource curse come from? Part of the story is that natural resource wealth does not need to be produced, but simply extracted. In this regard, it does not involve much productive capacity of the domestic economy or participation from the local labor force. Overall, the adverse impacts of natural resource revenue on the economy can take place through a number of channels:

- **Real exchange rate appreciation.** Resource-rich countries could face an appreciation of the domestic currency as a result of net income inflows from the export of natural resources (see for example, Corden and Neary, 1983). As a consequence, the production and export of the non-resource sectors becomes less price competitive and thus declines, which may lead to sectoral unemployment. Such ‘Dutch Disease’ effect could then lead to a concentration on the natural resource-based sector, and thus a loss of economic diversification.

- **Absorption capacity of domestic economy.** A substantial increase in consumption, financed by the resource revenue, can push up the price of the goods and services. With the lack of absorption capacity, a sudden surge in demand pulled by either consumption or investment could lead to higher prices of non-tradeable goods. Moreover, a sudden scale up of public investment can be challenged by limited absorptive capacity in the country, which leads to ineffective and inefficient use of resources. For instance, public investment in health (hospital and clinic) and education are far more effective when they are accommodated with multi-year training programmes for workers and professionals in these sectors. Thus avoiding skill shortages and mismatch.

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1 In the case of fixed-exchange rate regime, a real exchange rate appreciation is reflected through an increase in domestic inflation.
• **Governance of public spending**: As the ability of many developing countries is limited, the influx of resource revenue can be accommodated by poor choice of projects, lax contracting procedures, and thus low social outputs. Poor governance often gives rise to a large array of political and economic processes with adverse impacts on the economy, i.e. rent-seeking behavior. Experience in many countries shows that in the presence of ‘easy money’, government often chooses projects, which have low pay-off, but appeal to popular sentiment.

• **Price volatility and painful economic adjustment.** The world price of resources, such as oil and gas, is highly unpredictable and subject to large swing. As can be seen in the following graph, the price of Brent crude oil has been volatile with large swings after 2007. Such volatility often causes a boom-bust cycle, posing enormous risks to macroeconomic stability for countries that heavily rely on resource revenues.

![Figure 1.1: Crude Oil Price Since 1987](source: World Bank, GEM Commodities)

1.4 Challenges in Oil Revenue Management

After EI revenues have been generated and collected, the government must decide on their management and allocation, i.e. how much to spend on what. The economic models of spending are important because they are directly linked to development path and the risks associated with ‘resource curse’ mentioned earlier. In general, in managing resource revenue, governments need to address the following issues:

- Needs for social and infrastructure development
- Choice between current and future benefits (inter-generational equity)
• Policy design to deal with volatility of resource prices and its eventual depletion
• Enhancement of domestic capacity to absorb the spending from the resource revenue

On the other hand, a significant resource revenue prompts governments to initiate a policy on how to spend petrodollars fast and effectively for growth and poverty reduction. In general, three overarching issues need to be carefully addressed in order to determine a future sustainable stance of public expenditures: (i) aggregate fiscal discipline; (ii) allocative efficiency; and (iii) operational efficiency.

Substantial resource revenue may allow resource-rich countries to significantly augment government spending to address poverty and improve basic public services in education, health, and infrastructure development. However, macroeconomic management in these countries can be difficult because natural resources are exhaustible. This raises inter-generational considerations and exposes the need for balance between government consumption and saving for the long run. In this regard, policymakers must find the right mix of consumption for today and tomorrow, as well as prioritization on poverty-alleviation spending programmes. Moreover, the uncertainty of estimates of resource revenues, stemming both from volatile international prices and imprecise assessment of reserves, further complicates the design of fiscal policy rules to govern the use of resource revenue. In addition, to ensure the benefits from their resources, resource-rich countries face many challenges, both economic and institutional.

**Economic Challenges**

In the face of sudden discovery and exploitation of large amounts of resource revenue, government needs to address a number of problems both for the resource sector itself and for the whole economy. Managing the oil revenue is difficult, when oil prices are volatile and production output varies and is exhausted over time. In general, resource-rich countries face at least four crucial economic challenges:

• **Dutch Disease**: The influx of resource revenue could appreciate the domestic currency, hurting the country’s competitiveness. Moreover, the resource boom can contribute to the shrinking of other main sectors, mainly the agriculture and manufacturing sectors. Many researchers have shown that Dutch Disease can lead to oil-dependency and a lack of economic diversification, which can impede sustainable development of the country.

• **Inadequate saving and unsustainable pattern of consumption and investment during boom**: While resource revenue can constitute a large part of the economy, it is not permanent. The sudden influx of resource revenue can lead to an immediate increase in spending and thus inadequate saving, as well as an unsustainable pattern of consumption and investment. At the same time, the influx of revenue is often accompanied by the difficulties in identifying productive uses of the revenue.
• **Difficult adjustment to post-boom downswing**\(^2\): With the oil price shock or the end of the resource boom, the economy can remain stagnant and even fall into recession. The volatility of resource prices can lead to substantial fluctuation of the government resource revenues from year to year and costly economic adjustment in some cases. In other circumstances, it is even worse when countries borrow to fund their unsustainable consumption, which leads to unmanageable debt.

**Institutional Challenges**
Understanding the pre-condition quality of institutions is essential to a deeper comprehension of how natural resource revenue might be better managed. In general, there appears to be three main institutional challenges: i) corruption, ii) resource-related conflict, and iii) natural resource revenue waste. The frustration of who owns the rights to the resource and how much, can lead to violence and conflict. Natural resources can be wasted simply due to weak institutions and mechanism in managing and spending the resource. The waste of natural resources affects not only the current generation, but also future generations. In this regard, how a country responds to each of these challenges largely determines the environment of sustainable development.

**1.5 Economic Models for Revenue Management**

The economic spending of natural resource revenues poses at least two special challenges:

First, as the resource revenue fluctuates with the world market commodity prices, the medium-term expenditure plan should be formulated using a conservative assumption about the future price and related revenues.

Second, to maximize welfare from the resource revenue across generations, some proportion of the revenue should be saved and well invested with a draw-down policy to maximize the long term benefits of the rare financial windfall. In practice, this saving could happen in the form of building up a stock of human and physical capital or/and foreign assets. On the other hand, despite the need for development and humanitarian considerations, rapid fiscal expansion carries risks. Specifically, much higher public expenditure could result in a buildup of pressure on the price of non-tradeable goods that could impair non-oil private sector competitiveness.

In response to these challenges, resource-rich countries have adopted a number of spending-saving models. The models are often selected based on the stage of economic development and political economy in each country. The following Table presents some major Saving-Spending models.

\(^2\) See for example, Gelb (1988).
Table 1.2: Saving-Spending Options

<table>
<thead>
<tr>
<th>Models</th>
<th>Definition</th>
<th>Benefits and Risk</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Big-Push Spending</strong></td>
<td>All the current revenues</td>
<td>Accelerate growth, but face macroeconomic instability and Dutch Disease risks</td>
<td>Not recommended for weak-institution countries</td>
</tr>
<tr>
<td>(Vietnam)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bird-in-Hand</strong></td>
<td>Real returns on current assets</td>
<td>Prudent and simple saving, but loss of growth opportunity</td>
<td>May not be recommended for LDCs</td>
</tr>
<tr>
<td>(Norway)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sustainable Income</strong></td>
<td>Real returns on the sum of current assets and future revenues</td>
<td>Help avoid boom-bust cycle, but face uncertainty in future revenue estimation</td>
<td></td>
</tr>
<tr>
<td>(Timor Leste)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Revenue Benchmarking</strong></td>
<td>A fixed/variable share of average of revenues (Moving Average)</td>
<td>Flexible (stabilizing and saving), but need clear benchmarking and long-term</td>
<td></td>
</tr>
<tr>
<td>(Trinidad and Tobago, Ghana)</td>
<td></td>
<td>development objectives</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors, compiled from various sources

‘Big-push spending’ model (e.g. Nigeria and Saudi Arabia in 1970s & 1980s, Vietnam)

In the big-push spending model, government would implement high spending in the early years in order to accelerate investment in infrastructure and other important sectors to speed up economic growth and poverty reduction. Some governments would spend all annual resource revenues while keeping the government’s overall financial position in balance. However, this type of model would involve risks of unstable government spending, macroeconomic instability, and inflation pressure. It would also tilt the economy toward non-tradeable sectors, increasing the risk of the Dutch Disease which is the syndrome of rising real exchange rates and wages and driving out the pre-existing export and import-competing industries. Such fiscal rule would also privilege current, over future generations in terms of their share of consumption of natural resource wealth. Under this spending model, government spending would be subject to “boom-bust” cycles due to the volatile commodity price.

The Bird-in-hand model (e.g. Norway after the Fund establishment)

In this model, only the interest income accruing from accumulated oil revenues is spent consistently over time. In other words, the government places all hydrocarbon revenues in a fund and is only allowed to annually withdraw a pre-determined percentage of the value of the previous year’s fund for the state budget. While this policy mostly avoids the boom-bust spending cycle of the balanced budget rule, and is obviously fiscally sustainable, it may create
social tensions because its public spending would be low while oil revenues are being accumulated during the period of oil exploitation. This model heavily discourages current expenditure of resource revenues in favor of saving more for future generations. In this regard, there could be a high opportunity cost in terms of foregone social and infrastructure spending at the early stage of economic development. This model is usually not recommended for countries with low growth and high poverty rate.

*Sustainable Income Model (Permanent Income)*

Under this rule, both individuals and benevolent governments should be considered forward-looking, trying to smooth consumption over time in line with permanent income. In other words, the country saves most of the oil revenues during the years of rapid resource exploitation and generates financial returns through investment. In this regard, the yearly withdrawal amount is assumed to be the same during the oil boom and after that. Hence, expenditures out of natural resource proceeds would be stable, avoiding boom-bust cycles. However, this rule faces the difficulty of future revenue estimations due to the uncertainty of oil price and imprecise estimate of oil reserves.

*Revenue-benchmarking model (Ghana)*

In this model, the government would decide a fixed share or variable share of average resource revenue and returns from the asset. For instance, Ghana withdraws between 50-70% of the returns from the asset and Moving Average of receipt revenue of five years. This model, however, does not guarantee fiscal sustainability or optimal intergenerational consumption of resource wealth as it is subject to discretion.

Each model has its own advantages and disadvantages, depending on the country’s stage of economic development and quality of institutions. Natural resource revenue management in each country, therefore, must match its development process, balancing the different models of resource revenue spending. For rich countries, like Norway, which already have extensive physical and human capital in place, the best choice will be to accumulate financial assets to cover the long-term costs of the public pension. For low-income countries, it might be best to turn oil earnings into physical and human capital through public investment in health, education, and infrastructure. As Heuty and Aristi (2009) argue, ‘Bird-in-Hand is an unrealistic proposition of developing countries’. They also pointed out that it is more valuable for developing countries to view the steps taken by Norway during its first two decades of oil production after discovering oil in 1969. Norway did not create the oil fund until 1990 and before that Norway was much

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3 Formally, using the PIH sustainable government consumption of oil wealth (GC) at any point in time t+1 would be determined as: $GC_{t+1} = r \times \left[ F_t + \sum_{i=0}^{\infty} \frac{T_{t+1+i}}{(1+r)^i} \right]$ where $F_t$ is the value of the accumulated revenue in the oil fund at the end of the previous year, in constant prices; $T_i$ is the oil revenue the government expects (net of production costs) in period $i$, in constant prices; $r$ is the expected average real rate of return on oil wealth; and $I$ is the number of years until oil production ends.
more expansionary in its fiscal policy, focusing on education and domestic industries with the greatest comparative advantage. It was only after these pre-condition steps were taken that Norway’s fund management became fiscal discipline.

### 1.6 Natural Resource Fund

In addition to building strong institutions, many resource-rich countries have established a Natural Resource Fund (NRF) to manage their resource revenue as a stabilization or savings fund. The idea is to create a financial endowment that can be used to smooth out consumption over a long period of time, recognizing the depletion of natural resource in the future. In principal, NRF can separate the government budget from the fluctuation of oil prices and volatile resource revenues while the revenue inflows can be invested in capital assets, and human capital. In many instances, the investment goes to foreign assets to avoid the currency appreciation or ‘the Dutch disease effects’ as the resource revenue could inflate demand for domestic non-tradeable goods and services. In addition, through the NRF mechanism, spending of the revenues could be spread out to benefit future as well as current generations, and to smooth out government budget in case of negative economic shocks.

The advantages of creating the NRF lie in the political economy. The point of having the fund is to isolate the resource revenue from irresponsible government decisions and to extend the time period of the benefits of such a revenue inflow in a developing country. Experience shows that countries that have developed a separate institution to isolate resource revenue from the economy have better managed the economy during the boom years, and have been better able to prevent resource revenue from being consumed by internal rent pumps. Nonetheless, this idea of establishing a saving NRF is often challenged by those supporting the ‘big-push’ to overcome the ‘poverty trap’. Specifically, the opposing argument is that if the resource revenue is turned into long-term physical assets and human capital rather than financial capital, the inter-temporal benefits of the resource revenue are spread across time and generations. In other words, the resource revenue should be invested, not only to provide the foundation for long-term and sustainable development, but also to spread the benefits across generations.

**Outline of the report**

The following six chapters will examine the mechanism of natural resource revenue management and fiscal performance in six countries: Azerbaijan, Indonesia, Ghana, Nigeria, Timor Leste, and Vietnam. In each country, historical background and economic performance related to EI industry will be presented. Each of the following Chapters also presents some analysis on the link between saving-spending models, Dutch Disease, and Economic performance. Finally, Chapter 7 concludes and provides some consideration on saving-spending options for Cambodia, as well as sets the context for future study on EI revenue and spending in Cambodia.
Chapter 2
Republic of Azerbaijan

Quick Fact
Area: 82,620 sq. km
Population: 9.2 million
GDP: USD 63.4 billion
GDP per capita: USD 6,915
Political system: Partial democracy, dominant ruling party.
Ethnics: Azerbaijani (91.6%)
Religion: Muslim (95%)
Oil production: 1.23 million barrel per day (2011)

2.1 Introduction

Azerbaijan is located in the South Caucasus region, bordering the Caspian Sea, Georgia, and Armenia. After its independence in 1991, Azerbaijan suffered complex trauma and a set of problems associated with the collapse of Soviet Union, the armed conflict with Armenia, and the associated influx of about one million Azeri refugees.

In the second half of 1990s, Azerbaijan started to receive large foreign investment in the country's oil and gas sector. This, coupled with an array of sound macroeconomic and structural adjustment policies from 1996, brought about a rapid restoration in economic growth and macroeconomic stability. Since then, Azerbaijan has been one of the countries receiving attention on its oil revenue management and economic performance. As two thirds of this country is rich in oil and gas, Azerbaijan is considered one of the most important spots for oil exploration and development, and an important supplier of both oil and natural gas to Europe. The country's oil and gas revenues are forecast to be USD 200 billion, when it runs out in around 2030\(^4\).

The Soviet legacy, however, has not provided a strong institutional and legal framework, or traditions for public expenditure management, policy formulation, and accountability in this country. Thus, Azerbaijan had little experience of independently managing the oil industry and its generated revenues.

\(^4\) This estimate is based on 2004 constant price and assume oil price at USD 60 per barrel.
2.2 Extractive Industries

Oil and gas development and export is central to Azerbaijan’s economic growth. They account for nearly all exports, almost half of government revenue and more than half of economic activities. Azerbaijan's proven crude oil reserves and natural gas reserves are estimated at 7 billion barrels and 30 trillion cubic feet respectively as of January 2012, according to the *Oil and Gas Journal (OGJ)*. Oil export was only USD 3.2 billion in 2004, but jumped significantly to USD 30.6 billion in 2008. The 2005-2008 period is indeed the oil-boom in Azerbaijan. The average annual revenue from oil and gas between 2008-2011 was around USD 28 billion.

*Table 2.1: Key statistics in Azerbaijan’s resource sector.*

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2008</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports (USD billion)</td>
<td>3.7</td>
<td>30.59</td>
<td>30.8</td>
</tr>
<tr>
<td>Of which oil and gas (USD billion)</td>
<td>3.2</td>
<td>29.14</td>
<td>28.7</td>
</tr>
<tr>
<td>Gov’t revenue (% of GDP)</td>
<td>26.8</td>
<td>51.1</td>
<td>43.5</td>
</tr>
<tr>
<td>Of which: oil related (% of GDP)</td>
<td>13.2</td>
<td>31</td>
<td>27.4</td>
</tr>
<tr>
<td>Share of resource sector in GDP</td>
<td>54.7</td>
<td>70</td>
<td>65</td>
</tr>
</tbody>
</table>


At the time of the creation of the Republic of Azerbaijan, oil production was about 200,000 barrels per day. However, the production started to pick up in 1998 after the development of the Azeri-Chirag-Gunashli (ACG) oil field. Since then, there has been further investment in oil and gas, leading to the ‘second oil boom’ since 2005. Oil production in Azerbaijan recorded an increase over the last few years and remained above the one million barrels per day mark in 2010, making it the 15th largest oil producer in the world. At the same time, oil export has been increasing significantly since 2005, reaching 900,000 barrels per day in 2009, before falling to 770,000 barrels per day in 2010. The output is expected to fall further to about 700,000 barrels a day in 2020 and further steady decline thereafter (EIA 2012).
Figure 2.1: Total oil production and export (000 barrels per day)


2.3 Economic structure and performance

The Azerbaijan economy was in poor shape at the time of independence and in the first half of 1990s. The economy was weak and faced high unemployment rates while poverty was pervasive. The poverty rate was almost 50% in 2001. The total government revenue was less than 15% of GDP while the deficit was as high as 10% of GDP. The resulting debt monetization and monetary expansion devalued the currency and consequently increased the rate of inflation (World Bank 2006).

Nonetheless, Azerbaijan has experienced rapid economic growth since the onset of the oil boom in 2005. It fared well through the 2009 global crisis, although the growth momentum has slowed in the last two years. Between 2002-2011, the economy has grown at an annual average rate of 12.8%. This rapid growth has been largely attributed to the rapid increase in oil production, with oil sectors providing around 60% of economic activities. On the other hand, the non-oil economy has grown 13% per annum from 2005-2008.

Poverty has also been significantly reduced from 50% before the boom, to 15% more recently. This has been attributed to job creation and wage gain as well as transfers through targeted social programmes (IMF 2011). However, such economic growth and poverty reduction have been largely driven by the oil sector and heavy public spending. The non-oil economy has become dependent on public expenditure, with a big proportion of the private non-farm sector being dependent on government contracts. Similarly, poverty alleviation has been stimulated by construction and service sector growth, which has been linked to high public capital spending.
Table 2.2: Azerbaijan economic indicators

<table>
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<tbody>
<tr>
<td>Non-oil GDP growth</td>
<td>11.4</td>
<td>13.0</td>
</tr>
<tr>
<td>Oil fund (percent of GDP)</td>
<td>11.2</td>
<td>24.2</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>49.6</td>
<td>15.8</td>
</tr>
<tr>
<td>Business Competitiveness Ranking</td>
<td>62</td>
<td>55</td>
</tr>
<tr>
<td>Oil revenue/Govn’ t revenue</td>
<td>30%</td>
<td></td>
</tr>
</tbody>
</table>

Source: IMF Article IV (2011); World Development Indicators (World Bank)

Figure 2.2: Annual percentage change in constant price


On the other hand, since 1997, the share of industry in GDP has increased from 40% at the time of independence to 70% in 2009. The increase in industry share has been indeed dominated by oil and gas production. By contrast, the share of agriculture and service sector in the economy has dwindled over time. By 2011, agriculture sector contributed only 5%, while service contributed 27% of the total economic activities. Such patterns of industrial shift suggest that Azerbaijan has become more dependent on the hydrocarbon sector and been challenged by diversification problems.
Figure 2.3: Economic structure (as % of GDP)

Source: World Development Indicators (World Bank)

2.4 Oil and Gas Revenue Management

The question of how to manage, spend, and distribute the oil revenue across the current and future generations has become the cornerstone of economic development in many resource-rich countries. Azerbaijan is no exception, as oil rents are largely concentrated in its public sector. After the discovery of oil and gas, Azerbaijan faced macroeconomic management challenges such as how to manage the increasing flows of financial resources to the public sector, large swings in the current accounts, maintaining financial and macroeconomic stability, ‘Dutch disease’ effects, and the potential misuse of public resources that many resource-rich countries have experienced.

It has been observed that oil revenue flows in Azerbaijan accelerated quickly, to an extremely high level (as compared to the size of the economy) but then are estimated to immediately decline. This characteristic of revenue flows suggests a need to save some of the revenues for at least two reasons. First, the saving is for future generations when the oil revenue will decline. Second, it is because Azerbaijan might face the problem of ‘absorption capacity’ if all the revenue is spent as it is earned. At the same time, due to the volatility of oil prices, and the dominance of the oil sector in the economy, as well as the fiscal budget, a policy for stabilization of government expenditure is also needed. These two concerns have shaped the treatment of oil and gas revenues in Azerbaijan.
The influx of oil revenue carries with itself risks of inefficiency and misuse due to the lack of institutional capacity. Such a risk is even bigger in the case of Azerbaijan, which has had a tradition of bottom-up control and a legacy formed by years of a centralized economy. Against this backdrop, the Azerbaijani government has indeed been committed to exercise considerable caution over the use of the expected oil and gas windfall and to ensure that the benefits resulting from the exploitation of this natural asset would accrue to all citizens and to future generations.

**Oil Fund**

To manage the resource revenue, the State Oil Fund of Azerbaijan Republic (SOFAR) was established in 1999 as there were concerns about mis-spending the oil wealth for unproductive, politically motivated purposes. SOFAR was founded as a legally independent entity with powers to propose spending plans for the fund's resources. Expenditures from SOFAR, whether as budget support or project-specific assistance, have to be approved by the President. Meanwhile, parliament exercises limited control over spending because it neither writes nor amends the budget proposal drafted by the Ministry of Finance, but can only reject or approve the budget. In short, SOFAR governance remains largely concentrated on the president of Azerbaijan, with only limited checks and balances, such as annual audits, and parliamentary approval of expenditure decisions.

Overall, SOFAR was designed to provide a financial mechanism for separating commercial decisions on oil extraction from public spending decisions, providing considerable flexibility to "smooth" public expenditures over time in a manner that can maintain monetary stability. In other words, SOFAR accumulates Azerbaijan oil revenue and serves as an extra-budgetary fund to ensure macroeconomic stability, transparency in the management of oil revenue, and a safeguard of resources for future generations. It also aims to manage large and temporary revenue flows, operate with flexibility for use as savings or a stabilization mechanism, and to supply budget support for specific projects. In addition, this oil fund allows the Azerbaijani Government to maintain a degree of continuity in fiscal programmes, especially with regard to the implementation of committed investment projects.

**Table 2.3** summarizes the objective and rules of financial management and flows in SOFAR. In principle, the fund puts more emphasis on its role as a saving fund, rather than a stabilization mechanism. Over all, the withdrawal of the fund should not exceed inflows in a given year, which ensures that the nominal value of the SOFAR’s asset does not decrease over time. It should be noted that SOFAR invests most of its asset abroad, to avoid the problem of ‘absorption capacity’ which could lead to overheating of the economy and inflation. Most assets are managed by the SOFAR itself and are invested into debt instruments (foreign government bonds), money market funds, and bank deposits. These instruments need to have ratings of at least A by Standard & Poor or by Fitch.
**Table 2.3:** Oil funds-objectives and rules

<table>
<thead>
<tr>
<th>Stated Objectives</th>
<th>Inflows Rule</th>
<th>Outflows</th>
<th>Institutions</th>
<th>Investment Abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater weight on savings than stabilization</td>
<td>The government’s share in production sharing agreements with foreign oil companies for post Soviet oil fields.</td>
<td>Withdrawal not to exceed inflows in a given year. Transfers allowed to the budget for public investments. Own investments allowed in projects for refugees, oil pipelines, and water/irrigation</td>
<td>SOFAR and international assets management companies</td>
<td>60% in liquidity assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40% in sovereignty debt security</td>
</tr>
</tbody>
</table>

The following diagram presents the flows of oil and gas revenues and the relevant governance institutions. Specifically, SOFAR would allocate funds in the following three directions:

- **Administrative costs.** In 2011, the cost was USD 72 million.
- **Social and Infrastructure projects.** In 2011, SOFAR spend USD 0.7 billion for the social and infrastructure projects for refugees suffering from the Armenian-Azerbaijan Nagorno-Karabakh conflict, and infrastructure development such as Baku-Tbilisi-Ceyhan (BTC) oil pipeline of the State Oil Company of the Azerbaijan Republic (SOCAR). In a way, SOFAR is practically involved in capital expenditure.
- **Transfer to National Budget.** The transfer is the significant part of the SOFAR expenditure, which was USD 11.46 billion or 60% of SOFAR’s expenditure in 2011.

**Figure 2.4:** Flows of oil & gas revenue

The SOFAR’ revenues from all source income have significantly increased from USD 705 million in 2005 to USD 14.5 billion in 2008 because of increases in production and oil prices. Between 2004-2024, around USD 50 billion was estimated to have flowed into SOFAR while another USD 20 billion has been paid directly to the state budget.

In 2004, SOFAR was given a more explicit requirement by a Presidential Decree 128 to retain at least 25% of each year’s revenue when it peaks (around 2009-2010). SOFAR saved 35% and 50% respectively in 2003 and 2004, suggesting that a rapid accumulation had been taking place, especially during the upswing of oil revenues since 2008. The significant increase in revenue was caused by high oil prices as well as by the increased government share of profit oil from 25% in 2002 to 80% in 2008 after the initial investment outlays had been recovered. Overall, more than 35% of the revenue has been retained by SOFAR for reserves. As of December 31, 2011, the total reserve of SOFAR is USD 28.9 billion, which is 61 times that of 2001 reserves. At the same time, USD 36.5 billion of total revenues has already been spent.

**Figure 2.5:** Oil revenue and reserves (USD million)

![Figure 2.5: Oil revenue and reserves (USD million)](source)

*Source: SOFAR, Annual Report 2011. (as of December 31, 2011)*

### 2.5 How Has Azerbaijan Spent Its Resource Revenues?

Before the commencement of SOFAR, Azerbaijan had no formal oil fund but maintained a ‘shadow’ oil fund by limiting the amount of bonuses paid by foreign companies for oil rights that could be used to finance the budget deficit. At the same time, SOCAR financed current consumption by transferring tax revenues directly to the budget and by accumulating arrears of payment that amounted to a significant subsidy for consumption of fuels. In this regard, the use of tax payments and bonuses from the oil sector was consistent with a ‘permanent income’ view
of sustainable consumption of the oil and gas revenues, although the subsidization through accumulation of arrears was not.

With the establishment of SOFAR, the financing of the general government budget officially ceased. Profit oil and bonus receipts have instead been accumulated in the Oil Fund, which has been managed in a precautionary manner. The Fund is officially no longer used to finance the government budget. Nonetheless, the fund can still be accessed by presidential Decree.

Analysis of the fiscal policy in Azerbaijan must take into account the size of oil and gas revenue in the economy. Given the characteristics of oil revenues, the Azerbaijan government created a Long-term Oil Revenue Management Strategy (LTORMS) in 2004 that adopted the principle of ‘constant real spending’, which is equivalent to the Permanent Income Hypothesis (PIH) approach. According to PIH, the government should be forward-looking, trying to balance consumption over time with permanent income. In other words, constant government consumption over time is equal to the annuity's present value of expected oil wealth. This approach would help avoid boom-bust cycles and help policymakers avoid bottlenecks in absorptive capacity (Segura 2006). PIH approach is also sensitive to volatile short-term oil prices and provides opportunity to smooth out long-term fluctuations in oil prices or supply.

Nonetheless, during the early stage of the oil boom (2005-07), the Azerbaijan government implemented an exceptionally large expenditure increase to improve infrastructure and to raise income. The total government expenditure in 2008 jumped 370% as compared to that in 2005, or from 41% of non-oil GDP in 2005 to 74% in 2008. In addition, the government has intended to raise the level of public sector wages and social benefits. Such increase in expenditure poses the question of whether such a move is appropriate or sustainable over the long-term. In some ways, the expenditure pattern in Azerbaijan is similar to those in Nigeria and Saudi Arabia, although the economic conditions in Azerbaijan are quite different from those in either country.

The largest part of the Azerbaijan state budget now comes from transfers from SOFAR, in addition to government’s own revenue from oil profit tax. SOFAR transfer to the state budget was around 10% of state budget revenues between 2003-2007, but significantly jumped to 35.3% in 2008 and then rose as high as 57.3% in 2011. In other words, the transfers from SOFAR to the state budget have increased sevenfold, from 681 USD million in 2007 to USD 4.6 billion in 2008. It should also be noted that since 2003, oil revenues paid directly to the state budget, which have been inflated by high oil prices, have created an excess in the budget. This excess has then been placed into a separate stabilization account held by the Ministry of Finance in the banking system. In total, between 2001 and 2011, more than half of the SOFAR’s expenditure has been transferred to the state budget (USD 36.5 billion). Against this background and giving the saving priority of the SOFAR, it seems that SOFAR is not adequately meeting its central objective, saving oil money for future generations.
The government spending from all sources in the country for 2008-2011 (2008-2011 State Investment Programme) is predicted to be USD 17 billion. Government expenditure rose by over 80% in 2006, which puts considerable pressure on inflation. Between 2003-2008, the total government expenditure increased tenfold. During the same period, Azerbaijan has significantly increased its public capital spending by around 1200%. This increase in the expenditure, however, has not been accompanied by an improved absorption capacity and transparency about how public programmes/projects are developed and approved. In the long run, Azerbaijan's high dependence on oil exports poses a potential threat to the economy given the potential volatility in the international oil market.

**Figure 2.6:** Government revenue, expenditure, and SOFAR’s transfer in thousand dollars.

![Graph showing government revenue, expenditure, and SOFAR's transfer](image)


Overall, Azerbaijan seems to have implemented a fiscal strategy that has increased short-term expenditure of oil revenues for infrastructure and other state projects. This pattern is similar to that in Saudi Arabia and Nigeria in the 1970s and 1980s. Nigeria, for instance, made large expenditure increases, but poorly managed its oil boom by creating unsustainable wage increases, which intensified the “Dutch disease effects” on the non-oil economy. The drop in world oil prices in 1980s forced both economies to cut their expenditure, which threw the respective economies into deep recession. The experience in Nigerian and Saudi Arabia also suggests that even when modern infrastructure is built, the non-oil economy can still be highly affected by a decrease in oil revenues and expenditure.
Capital expenditure in Azerbaijan was also observed to accelerate in 2006, increasing from 6.3% in 2005 to 16.3% of non-oil GDP in 2006. The capital expenditure peaked at 25% in 2008 during the height of the oil boom. The oil revenue dominates the total government revenue, while non-oil tax revenue has been around 15% of non-oil GDP over the last ten years.

### 2.6 Issues and Challenges

Due to the oil boom, Azerbaijan’s economy has been amongst the fastest growing in the world, recording an average growth rate of 12.8% between 2003-20011. The oil sector has also experienced positive growth. Nonetheless, Azerbaijan has also faced inflation, which rose above 20% in 2008 due to buoyant domestic demand and expansionary fiscal policy. The economic growth in Azerbaijan has been mainly driven by state expenditures. Foreign investment is also expected to decline over time, as the major oil and gas projects are moving toward less intensive stages.

In terms of economic and spending models, the transfer from SOFAR to the state budget has been significant since 2008. These levels might not be consistent with the objective of SOFAR to preserve oil revenue for future generations. The question then arises: What budgeting arrangement and policy framework allows for such rapid increase in withdrawal? On paper, Azerbaijan’s SOFAR assigns primacy to saving objectives, i.e. the total amount of outflows cannot exceed inflows in any given year. In practice, however, SOFAR funding has been allocated to the state budget to finance public investments including those not planned for in the budget. In practice, however, the governance of SOFAR is still much controlled by the Presidential Decree. Although, Azerbaijan has considered the PIH approach, it has faced...
technical challenges in the creation of the scheme, such that the amounts withdrawn during the resource exploitation phase and the post-resource financial returns phase are the same. There is also difficulty in future revenue estimation due to the high volatility and uncertainty of oil prices. Hence, the pressure on SOFAR to relinquish funds continued and intensified as the revenue shot up.

In addition, there are still significant challenges in keeping growth sustainable and inclusive. Specifically, the non-oil economy remains undeveloped and fragile. As discussed earlier, non-oil GDP growth in Azerbaijan has been around 13% and largely concentrated in the burgeoning service sector, related to the oil economy.

Given this economic structure and non-oil economic performance, Azerbaijan will have to address a number of important issues to avoid the resource curse.

First, Azerbaijan needs to address many obstacles in the business environment and governance that constrain private sector-led growth. It should be noted that non-hydrocarbon growth and poverty reduction have been largely driven by high public spending, not by private sector development.

Second, governance as well as the oil revenue management remains a concern. Azerbaijan is still building its capacity to conduct counter-cyclical fiscal policy and reduce inflation volatility, while sharing the oil wealth between current and future generations. In this regard, at the current stage of development and economic performance, a large part of the oil rent needs to be isolated from the economy and left to accumulate in the SOFAR. In other words, much of the resource revenue should not be transferred into the state budget.

**The missing oil money**

Azerbaijan has established a legal framework surrounding public procurement. The Public Procurement Law (PPL) developed by the State Procurement Agency (SPA) was enacted in December 2001 with implementing regulations promulgated by Presidential Decree No. 668 in January 2002. It aims to prevent the misuse of oil revenues. However, a survey undertaken by CESD (2008) reveals that there is a severe problem in the use of these public assets (social projects); namely, the misappropriation of funds through overestimating expenditures. According to the survey, as much as USD 50 million has been misappropriated in a year.

A Natural Resource Fund is usually established to separate resource revenue from the rest of the economy. However, SOFAR is involved in funding for both capital and current expenditures. In addition, although SOFAR operates quite transparently, the budget process, as a whole, is unnecessarily complex. This implies that clear resource management principles are needed to ensure that the NRF is operated in a way that maximizes the benefits to the overall economy.
2.7 Lessons

The experience from Azerbaijan provides two important lessons on natural resource revenue management and economic model of expenditure. First, the Natural Resource Fund plays an important role in oil resource management, especially during the boom years. However, a clear principle of resource management is needed to ensure that the resource fund is managed in a way that maximizes the benefits of the whole economy. Second, the experience in Azerbaijan suggests that sound budget management and strong institutions for effective and efficient public expenditure execution are essential to avoid the disappointing experience of many natural resource rich countries. Unchecked, these risks, associated with the increased in expenditure, can increase and accelerate.
Chapter 3
Republic of Ghana

Quick Fact
Area: 238,500 sq. km
Population: 25 million
GDP: USD 39 billion
GDP per capita: USD 1,570
Religion: 69% Christians, 16% Muslims
Oil production: 85,000 barrels per day (2011)
Gold production: 3.4 million ounces (2011)

3.1 Introduction

Ghana, officially the Republic of Ghana, is a country in West Africa. It is bordered by Côte d'Ivoire to the west, Burkina Faso to the north, Togo to the east, and the Gulf of Guinea to the south. Ghana was a former colony of Britain and got its independence in March 1957. The country consists of 10 administrative regions and 170 districts. Ghana has a population of 25 million. It comprises roughly 100 linguistic and cultural groups; however, no part of Ghana is ethnically homogeneous. Urban centres are the most ethnically mixed because of migration by those moving from the countryside in search of employment in town areas.

The country moved from military rule to civilian rule in 1992 through the first national multiparty election. Since then, five elections were successfully held and the power from the government to opposition has been peacefully transferred on two occasions. The latest transfer was in 2009 and the next election was planned to take place in December 2012. The country is dominated by two major parties, the New Patriotic Party (NPP) and the National Democratic Congress (NDC) with each getting almost equal level of support from the constituency.

Religious practices among people in Ghana have drastically changed. In 1960, 38% of the population was traditionalists who practiced their indigenous beliefs and traditions. Islam was the religion of 30% of the population, followed by 24% Christians. However, the 2000 census showed that Christianity made up 69% of the population while Islam fell to just 16% and traditionalists remained only 9%.
3.2 Extractive Industries

Ghana is the second largest gold producer in Africa, after South Africa, and is the third largest producer of aluminum metal and manganese ore in Africa. Ghana also contributes to significant production of bauxite and diamonds.

The exploitation of mineral resources in Ghana has a long history. Production of gold mining between 1493 and 1997 was estimated to be 2,488 metric tons, which is equivalent to about 80 million ounces. Nevertheless, gold production has significantly declined since late 1950. To stimulate the investment in the mineral sector, since 1985 the government of Ghana has liberalized the sector and sold out majority shares of its state owned mining to foreign companies. As such, between 1983 and 1998 Ghana attracted, approximately USD 4 billion of FDI representing more than 60% of the total FDI. According to Boaky et al (2012), the total gold production from 9-licensed international mining companies recorded 3.4 million ounces in 2011, up from 2.5 million ounces in 2000.

With prospect of production expansion, the government in 2007 approved the development of a nuclear power sector, with a 400-megawatt nuclear power plant to be built by 2018. This will be a good power source for mining operations in Ghana. Also, the government is planning to build a gold refinery with an anticipated output of 100 metric tons of gold per annum.

![Figure 3.1: Mineral rent (% of GDP) (World Development Indicators (World Bank))](image)

The earning from mineral resources was not been high in relation to the GDP since 1980, but it has increased during the last decade. The mineral rents increased from 2% of GDP in 2003 to 9%
or approximately USD 2.8 billion in 2010. The sector accounts for approximately 33% of export earnings.

Commercial quantity oil was discovered in Ghana in the 1970s, however the production scale has been insignificant, about 7,000 barrel per day in 2000. The Ghana National Petroleum Council (GNPC) has the mandate to explore for oil within the nation’s territory. In 2007, substantial oil reserves were discovered in the Jubilee fields. From this discovery, Ghana has now 700 million barrels of proved reserves\(^5\) while the exploration is going on in two other important fields. Since extraction in the Jubilee fields started, the oil production was 85,000 barrels per day in 2011, generated about USD 3 billion of export earnings for that year. Oil production is expected to be around 110 thousand barrels per day over the course of 2012-15 and may bring about USD 4 billion in foreign exchange per annum (IMF, 2011).

To avoid the phenomenon of resource curse, Ghana has committed to the principle of transparency, by joining the EITI in 2003, with the hope that it will track the promising management of its mineral revenues. Ghana became a compliant member of EITI in 2010, which means it has fulfilled all requirements in the EITI standard. In that year, Ghana also announced the extension of its EITI commitment and practices to cover the oil and gas industry.

### 3.3 Economic Structure and Performance

Although extraction of minerals has been a major feature of the economy, the role of the industry seems limited. Ghana’s economy saw a remarkable growth since 2006, but the expansion was driven by stronger growth in the service sector. The nominal GDP has doubled in the last five years, increasing from USD 20 billion in 2006 to USD 39 billion in 2011. During this period, the service sector comprised nearly half the GDP (49%), up from 32% during 2000-05. In contrast, the shares of agriculture and industry respectively saw a significant drop from 40% and 28% during 2000-05 to just 30% and 21% during 2006-11.

\(^{5}\) International energy statistics of Energy Information Administration (EIA)
Overall Ghana has attained quite robust growth rates over the past 5 years. The real growth rate was 8% per annum despite a modest economic performance during the global crisis in 2009. Such resilience is due to the fact that Ghana’s economy has benefitted from buoyant cocoa and gold prices in the international market during the global financial crisis. High global commodity prices further aided growth and the economy soon bounced back from a slowdown (4% in 2009) Total exports grew by USD 2 billion in 2010 (IMF, 2011). Then, the growth rate continued to rise sharply to 14% in 2011, partly reinforced by the oil economy which started production in late 2010.
The inflation rate is very high in Ghana, although it has decreased in recent years. The value of cedis has been stable, which helped contribute to the disinflation process, cooling from 20% in 2009 to 11% in 2010 and about 9% in 2011. Partly, the reduction of inflation rates was due to a strong balance of payments that has made the exchange rate of cedis remain relatively stable since mid-2009. Other factors that contributed to disinflation were the effects of the government’s monetary tightening in 2009 and a favorable yield of crops (IMF, 2011). Nevertheless the real effective exchange rate appreciated and experienced swings in recent years.

**Figure 3.4: Incidence of poverty and inequality**

Since the onset of democratic elections in 1992, the incidence of poverty has moderately reduced in Ghana. In 1992, more than half of the population was struggling to live on less than a dollar per day, but over time the economy has brought more and more people out of extreme poverty. The poverty headcount reduced to just below 40% in 1998 and had reached 29% by 2006. The poverty rate dropped 2 percentage points per annum between 1992 and 1998. Between 1998 and 2006, the poverty headcount has reduced on average 1.6 percentage point per annum while growth registered 5%. Meanwhile, the income gap between the rich and poor continued to widen. The Gini coefficient rose from 0.38 in 1992 to 0.43 in 2006.
Table 3.1: Key social indicators in Ghana

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<tbody>
<tr>
<td>Life expectancy at birth (years)</td>
<td>58</td>
<td>60</td>
<td>62</td>
<td>63</td>
<td>63</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Literacy rate, adult&lt;sup&gt;6&lt;/sup&gt;</td>
<td>58</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>67</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Net enrollment, primary</td>
<td>64</td>
<td>59</td>
<td>72</td>
<td>78</td>
<td>77</td>
<td>...</td>
<td>84</td>
</tr>
<tr>
<td>Primary completion rate&lt;sup&gt;7&lt;/sup&gt;</td>
<td>71</td>
<td>69</td>
<td>78</td>
<td>84</td>
<td>87</td>
<td>...</td>
<td>94</td>
</tr>
</tbody>
</table>

*Source: World Development Indicators (World Bank)*

The progress in human development has been salient since 2000. Life expectancy at birth among Ghanaians increased from 58 years in 2000 to 64 years in 2011. At the same time, net enrollment rates at primary school levels increased from 64% in 2000 to 84% in 2011. More and more children in Ghana complete their primary education. The primary completion rate rose from 71% in 2000 to 94% in 2011.

3.4 Mineral Revenues and Its Distribution

The mineral resources in Ghana are owned by the state and revenues are centrally collected and managed by the national government through the Controller and Accountant-General.

The revenue from mineral resources is not actually very huge. According to Morgandi (2008), the mineral revenue was roughly USD 410 million, constituting about 12% of the total revenue or 2% of GDP. Two major revenue streams in the mining industry are from Royalties and Corporate Taxes. Royalties represents a majority share. For instance, royalties made up 89% of the total mineral revenue in 2004. Corporate Taxes from mining companies on the other hand are responsible for the remaining share of 11%.

The distribution of mineral revenue is determined by the 1992 Constitution and the 1999 Administrative Fiat. Such arrangements do not affect the pattern of distribution across levels of government, although the royalty rate was updated, through the new Minerals and Mining Act 2006, to be within a range of 3-6% of the value extracted and later set to a single rate of 5% in 2010.

Only royalty revenues are shared between the central government and the sub-national governments while all revenues from Corporate Taxes go to the central government. The revenue from royalties is unequally shared between the two levels of governments. The central government is entitled to 80% of the royalty revenue, 10% is tagged for the Minerals Development Fund, while the other 10% goes to the Office of Administrator of Stool Lands for further distribution. Of this 10%, the Office of Administrator of Stool Lands kept 1% for its own use.

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<sup>6</sup> as % of people ages 15 and above

<sup>7</sup> as % of relevant age group
operation while the remaining 9% is allocated to the Producer District (4.95%), Producer Traditional Council (1.8%), and Customary Land Title Holders or Stools (2.25%).

As an equalization mechanism across the board, a proportion of the central government’s share is allocated to the District Assemblies Common Fund. By law this fund should not exceed 7.5%, and should be earmarked for further redistribution to all Districts Assemblies (both mineral producing and non-mineral producing districts) across the country. This allocation is based on criteria and distribution weights that are subject to approval by the Parliament every year. Given the large chunk of the revenue controlled by the central government, this 7.5% share constitutes approximately 82% of District Assemblies’ total revenue\(^8\).

**Figure 3.5:** Management and distribution of mining revenues

Source: Adapted from Morgandi (2008)

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\(^8\) KojoFynn, the Administrator of DACF. Joint decentralization review mission 2011, ministry of local government / EU delegation to Ghana: District Assemblies Common Fund.
3.5 Management and Distribution of Petroleum Revenue

In 2011, the first-time oil revenue from Jubilee fields was about USD 450 million, which is approximately 6.5% of total revenue or 1% of GDP. Ghana chooses to employ the Revenue Benchmarking Model for the management of its petroleum revenue.

The petroleum revenue in Ghana is governed by the Petroleum Revenue Management Act 2011. The Act provides the framework for the collection and management of petroleum revenue in a responsible, accountable, and sustainable manner for the benefit of Ghana. Overall, the Act sets good rules for the management and distribution of the petroleum revenue. Respective authorities of the funds can follow this Act with room for flexibility for their operational and strategic decisions. The Act upholds the highest principles of transparency, and creates space for checks and balances which include the role of Parliament in approval, the authority of Auditor-General in scrutinizing the performance, and the rights of the Public Interest Accountability Committee for monitoring and evaluating the compliance.

Figure 3.6: Management and distribution of petroleum revenue

Source: Authors, based on Petroleum Revenue Management Act 2011 (Act 815)
Mechanisms
As a means of managing petroleum revenues, the Petroleum Holding Fund (PHF) and the Ghana Petroleum Funds (GPF) were established at the Central Bank. PHF is a transitory fund, designated as a public fund at the Bank of Ghana, to receive the petroleum revenue collected by the Ghana Revenue Authority and to disburse funds to the Annual Budget and the GPF. Major revenue streams from petroleum sector, going into the PHF, include royalties, sale or export of petroleum, corporate income taxes, and carried and participating interest from government’s involvement in petroleum operations through either the national oil company or other means.

The GPF was established to receive the disbursement of the excess revenue from the GHF. It comprises two separate funds: Ghana Stabilization Fund (GSF) and Ghana Heritage Fund (GHF). Upon the depletion of the petroleum reserve, these two funds will be consolidated into one single Fund, called Ghana Petroleum Sovereign Fund (GPSF), GSF was established with an objective to cushion the impact of or sustain public expenditure capacity during periods of unanticipated petroleum revenue shortfalls. GHF, on the other hand, will provide an endowment to support development, through investment, for future generations when the petroleum reserves have been depleted.

Distribution Arrangement
Ghana does not share the oil revenue with the oil producing regions or districts in the form of a derivation fund. Part of the oil revenue is transferred to the annual budget in the form of Annual Budget Funding Amount (ABFA) to cover public expenditure and the rest is saved in the GPF. The Benchmark Revenue from oil that is estimated by the Minister of Finance and approved by the Parliament each year, serves as the basis for fund allocation between the annual budget and the GPF. On a quarterly basis, the amount of ABFA to be approved by the parliament must not exceed 70% of the Benchmark Revenue, while the excess revenue, the amount in excess of ABFA, will go to the GPF.

More of the GPF is saved for stabilization purposes in the initial stage. The excess revenue meant for GPF is to be shared between GHF and GSF. Upon approval by the parliament, GHF receives at least 30% of the excess revenue while 70% at most should go to GSF. Nevertheless, when GSF has reached its limit, to be determined by the Parliament on the recommendation of the Minister, the transfer meant for GSF shall be instead allocated to the Contingency Fund or for debt repayment that is approved by Parliament.

Institutional Arrangement
The Minister of Finance assumes the overall management responsibility for the GPF while the Bank of Ghana, represented by the Governor, is designated as a Fund Manager. The Governor

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9 The estimated revenue from petroleum operation
takes the operational management responsibility of the GPF and the subsequent GPSF within the framework of the operational and management strategy provided by the Minister. The Minister is assisted by the Investment Advisory Committee (IAC) for technical and policy advice related to the investment and management of the GPF. The IAC comprises 7 members (including one chairperson) who are appointed by the President on the recommendation of the Minister, in consultation with the Governor of the Bank of Ghana. The IAC meets once every quarter, plus in extraordinary circumstances if necessary.

**Table 3.2: Institutions in petroleum revenue management**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Revenue Management Act 2011</td>
<td>Provide the framework for the collection, management of petroleum revenue in a responsible, accountable and sustainable manner for the benefit of Ghana.</td>
</tr>
<tr>
<td>Ghana Revenue Authority</td>
<td>Collect the petroleum revenue due the Republic.</td>
</tr>
<tr>
<td>Minister of Finance</td>
<td>Take overall management responsibility of the GPF.</td>
</tr>
<tr>
<td>Governor of the Bank of Ghana</td>
<td>Is responsible for the operational management of the GPF and the subsequent GPSF.</td>
</tr>
<tr>
<td>Investment Advisory Committee</td>
<td>Assist the Minister of Finance on technical and policy advice related to the investment and management of the GPF.</td>
</tr>
<tr>
<td>Parliament</td>
<td>Approve the budget and distribution of petroleum revenue and oversee the performance of all Funds.</td>
</tr>
<tr>
<td>Internal Audit Department of the Bank of Ghana</td>
<td>Conduct internal audit of the GPF.</td>
</tr>
<tr>
<td>Auditor-General</td>
<td>Conduct external audits of the Petroleum Funds and publish the audit reports</td>
</tr>
<tr>
<td>Accountability Committee</td>
<td>Monitor and evaluate the compliance of Petroleum Revenue Management Act 2011, provide independent assessments on the management and use of petroleum revenues.</td>
</tr>
</tbody>
</table>

*Source: Petroleum Revenue Management Act (2011)*

The Parliament and Auditor-General play important roles in ensuring the functioning of the Petroleum Funds. The Parliament exercises its role in approving the distribution and management of petroleum revenue as well as overseeing the performance of all funds. It also designates the Auditor-General to conduct external audits of the Petroleum Funds not later than three months after the receipt of the financial statements and other relevant documents which are supposed to be fully submitted by the Bank of Ghana within three months of the end of the financial year.

An Accountability Committee was established to monitor and evaluate the compliance of the Petroleum Revenue Management Act 2011. This committee was to provide space and platform for public debate on spending prospects and management and whether use of revenues conforms to development priorities. It was also meant to provide independent assessments on the management and use of petroleum revenues, to assist the oversight by the Parliament and the

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10 Of 7 members, 3 members are appointed for a 3-year term only and are not eligible for reappointment while the other 4 members are appointed for a 2-year term and are eligible for reappointment for another term only.

11 Petroleum Funds means the Petroleum Holding Fund, the Ghana Stabilization Fund, the Ghana Heritage Fund and subsequently the Ghana Petroleum Wealth Fund.

12 In full it is called Public Interest and Accountability Committee
executive. The committee consists of 11 members, one of whom represents independent policy research think-tanks. Another member is a representative of civil society organizations, while the other 9 need to be selected among nominations from various groups.\(^1\)

**Transparency**

With its responsibility for the management of the GSF and GHF as well as the subsequent GPSF, the Bank of Ghana is obliged keep proper accounts and records and present quarterly reports on the performance of both Funds to the Minister and IAC. The Bank must also produce semi-annual reports on both Funds to present to Parliament and publish them in two state owned national dailies and on the website of the Bank.

Both PHF and GPF uphold to the highest principle of transparency. The Act rules that duties concerned with ancillary matters of petroleum revenue and savings shall be discharged with the highest internationally accepted standards of transparency and good governance. Because the information or data, whose disclosure could significantly prejudice the performance of the Ghana Petroleum Funds, it can be treated as confidential. In such a case, this confidential data or information must be declared by the Minister, and is subject to the approval of Parliament, with a clear explanation why it needs to remain private. Such declaration does not limit the access to information by the Parliament and Public Interest Accountability Committee.

Also, the Act requires that the Auditor-General publish the reports of external audits on the Petroleum Funds within thirty days after submission to Parliament and highlight, from the report, any irregularities or any other matters, which in the opinion of the Auditor General ought to be brought to the attention of Parliament.

**3.6 How Has Ghana Spent Its Resource Revenue?**

Overall the spending of mineral revenue is subject to common budgeting procedures and is not restricted for any particular type or purpose of expenditure. Except for the transfer, in terms of derivation of 9% of royalties to the subnational level, the mining revenues are all spent by the central government through a common annual budget. No saving mechanism was established to keep some of the revenue for either fiscal stabilization purposes or a future generations fund. This suggests that the government implemented a true Balance Budget Rule based fiscal regime, which makes the macroeconomic stability vulnerable to the export-dependent mining industry.

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\(^1\) Trade Union Congress, National House of Chiefs, Association of Queen Mothers, Association of Ghana Industries and Chamber of Commerce, Ghana Journalists Association, Ghana Bar Association, Institute of Chartered Accountants, Ghana Extractive Industries Transparency Initiative; Christian groups, the Federation of Muslim Councils, and Ghana Academy of Arts and Sciences.
Unlike the mineral industry, Ghana is preparing ground to ensure the effective and sustainable use of the petroleum revenue. Ghana is demonstrating its commitment to transparency standards by being a compliant member of the EITI club and has established two separate accounts to save the petrodollars that are left from financing the annual budget. A Ghana Stabilization Fund (GSF) is an account that is meant to rescue the country from fiscal instability, especially in times of downside risk. The Ghana Heritage Fund (GHF) is another account that seeks to invest for future generations.

The future inflow of petroleum revenue may contribute to more rapid accumulation of capital stocks through higher expenditure on capital goods. So far, public investment has played a limited role. The government’s allocation for public investment is less than 7% of the GDP, and has decreased from 9% in 2003. However, the Petroleum Revenue Management Act 2011 requires 70% or more of the ABFA be spent on public investment. Because the proportion of ABFA could be as high as 70% of the petroleum revenue, it may help boost the capital expenditure and consequently yield a more rapid capital stock for stronger growth.

Restriction for expenditure of petrodollars on public investment in few priority sectors is wise and may yield promising outcomes if successfully implemented. When transferred into the annual budget, the petroleum fund is considered as part of the regular budget, but 70% or more is earmarked for spending on public investment. There is requirement that the MTEF and long-term national development plan serve as the basis to guide the expenditure and that the Minister should identify not more than four priority areas for spending of the petroleum revenue each year. The current medium-term policy framework, Ghana Shared Growth and Development Agenda (GSGDA) 2010-13, intends to allocate 54% of the USD 24 billion expenditure to infrastructure and 25% to human development expenditure (Boakye et al, 2012).

Fiscal Performance
Overall, the revenue, in absolute terms, has increased since 2000, but remains below the expenditure needs. For instance, the revenue saw more than an eight-fold increase, up from USD 880 million in 2000 to USD 7,290 million in 2011. Over the same period, expenditure was higher in all years, which suggests the government has always run a deficit. Nevertheless, the period was also characterized by a slower increase of expenditure, a sixfold increase from USD 1,380 million in 2000.
Figure 3.7: Performance of fiscal expenditure (% of GDP)

Although the expenditure has seen an increase in absolute terms, it actually decreased relatively to the overall size of the economy. However, this trend may not necessarily be a bad thing; instead it appears to be a positive move. Relatively less expenditure by the government should suggest a smaller role of government, thus leaving the room for more active engagement of the private sector in driving growth. Government expenditure has decreased from approximately 33% of the GDP in 2001 to around 22% in 2011.

The fiscal regime is constrained by the high degree of recurrent expenditure, particularly the sizeable amounts for wages and debt servicing. In 2011, the recurrent expenditure represented 15% of the GDP or 69% of the total expenditure. Ghana has been carrying heavy expenditure on personnel and interest payment, the cost of which (nearly 6% and 2% of the GDP respectively) together make up half of the recurrent account.

The functioning of tax system may serve as good foundation for spending of the windfall revenue from petroleum resources. The performance of tax regime has been quite strong so far. The total revenue increased from 14.5% of the GDP in 2010 to nearly 18% in 2011, but the increase was mainly attributed to increase of the tax revenue. Although the country started to earn petrodollars in that year, 94% of the total revenue in 2011 came from taxes, a substantial share, (43%) of which is a direct tax. In relation to GDP, tax revenue represented 16.6% in 2011, an increase from 13% in earlier year and 12% in 2006.

### 3.7 Issues and Challenges

Ghana has lost significant revenue from mining industry. For instance, all mining companies only paid the minimum rate of 3% royalties, although they are by law subject to 3-12% royalty rates. With regard to the export earnings, records from Ghana’s Central Bank suggest that the retained value to Ghana is only 29% because the companies keep other 71% in offshore accounts. This also suggests that no revenue from capital gain taxes was collected although most mining companies have changed their ownership over the past decade. Moreover, the corporate income tax receipts were relatively low, less than 4% of government receipts from the mining sector, and more importantly the Ghanaian fiscal regime has been particularly generous to the mining industry compared with other industries, by providing mining companies an exemption of customs (import and export) duties and VAT. Nevertheless, the government recently tried to address some of the shortfalls by applying a 5% royalty rate, 35% corporate tax, and 20% capital allowance (Boakye et al, 2012).
According to Transparency International and Open Society Foundation (2012), although local mining communities are entitled to a proportion of royalties paid to central government, there is no mechanism to track whether the right payments have been made to the community through the appropriate channels, especially in tracking revenue from the upstream. Moreover, the fact that mining communities are beset with intractable poverty levels there are indications that these distributions of revenues have not served their intended purpose. Either the right amounts are not made available or revenues end up lining the pockets of corrupt officials and groups.

According to Boakye et al (2012), Ghana’s political business cycle features a high risk of political capture of mineral rents. The empirical evidence suggests that the government runs an exceptionally high degree of fiscal spending in pre-election years, in order to please swing voters. Since 1992, the fiscal deficit was about 1.5% of GDP higher in pre-election years leaving the fiscal regime to bear a painful adjustment in post-election years. The evidence reveals that such high fiscal instability pushed up inflation, froze private investment to below its potential level, and also affected the quality and sustainability of many public investment projects.

The prospect of high public spending to be additionally financed by petrodollars may carry a risk in itself and could jeopardize macroeconomic stability. A significant share of the petrodollars in the annual budget can lead to an unnecessarily big role of the government that could possibly result in inefficiency and a weakening contribution of the private sector. On the other hand, although a large proportion of petrodollar spending would be in the form of investment, the economy could potentially face inflationary pressures and inadequate absorption capacity. For example, with contributions from oil production in 2011, the overall economy grew 14%, which is more than double its usual average growth of around 6% per annum over the past decade.

Ghana is fortunate to have a strong civil society and judiciary that is, to a large extent, independent and free from political influence, but the Parliament lacks a vibrant committee system and is not capable of exercising its oversight role with the executive branch. The weak parliament can be explained by the fact that parliamentarians are beneficiaries of presidential patronage, which therefore limits their freedom to closely scrutinize and hold the executive accountable.

High degrees of unemployment and underemployment reflect the fact that resource revenue, as well as the government spending, has not created enough jobs for people which has led to instability. According to Throup (2011), Ghana's employment problems are exacerbated by large-scale rural-urban migration, particularly from the northern regions to the coastal cities. Accra, for instance, has become home to 4.5 million people, or 18% of the country’s population. Many thousands of young people leave the countryside each year in search for jobs in town areas, but the majority of them do not get full employment. It is estimated that the underemployment rates in major coastal cities is approximately 70-80%.
3.8 Lessons

Despite a limited proportion of revenue from its recently discovered and exploited petroleum resources, Ghana has well prepared itself for the transparent and accountable management of the resource revenue through the enactment of the Petroleum Revenue Management Act in 2011 which is highly appreciated for its adherence to the international standards.

The revenue from petroleum is treated separately from the rest of the economy through implementing the revenue-benchmarking model. Utilizing this model Ghana has, established a petroleum account (Petroleum Holding Fund) to deposit the petroleum revenues collected by the Ghana Revenue Authority before further channeling the fund to the national budget and the Ghana Petroleum Fund in accordance with the formula decided by the Parliament. It is still too early to see the outcome, but the promise of petroleum revenue in Ghana is likely to benefit from its already strong tax system and the establishment of a checks and balances system in the fund management itself.
Chapter 4
Republic of Indonesia

Quick Fact
Area: 1,919,000 sq. km
Population: 242 million
GDP: USD 847 billion
GDP per capita: USD 3,495
Ethnic: around 300 groups (Javanese 41%)
Religion: 87% Muslims, 10% Christians
Oil production: 995,000 barrels per day (2011)

4.1 Introduction

Indonesia, officially the Republic of Indonesia, is a country in Southeast Asia comprising 33 provinces, five\(^4\) of which receive special status by enjoying greater legislative privileges and a higher degree of autonomy from the central government than the other provinces. It is the world’s 16\(^{th}\) largest economy, with 4\(^{th}\) largest population (just behind China, India, and the USA). The majority of Indonesians live on the island of Java, which is home to nearly 60% of the population. The country consists of over 300 native ethnic groups, Javanese being the most dominant, representing more than 40% of the population. Indonesia is predominantly a Muslim country (87%) with approximately 10% of the population following Christianity.

Indonesia declared its independence from the Netherlands in 1945. Following the collapse of the President Suharto regime in 1998, Indonesia has undertaken various major reforms to improve political and socioeconomic conditions. As part of these reforms, the 1945 Constitution was amended 4 times to improve the checks and balances among the executive, judicial, and legislative branches.

4.2 Extractive Industries

According to the Indonesian Petroleum Association, the exploration for oil in Indonesia dates back to 1871. Although the first commercial oil production began in 1885, the scale of production was not significant until 1945 when the country got its independence and became a Republic. The production has so far concentrated in Sumatra, which is responsible for more than half total oil production in Indonesia. Currently, Chevron is the largest single oil producer in Indonesia, responsible for 40% of the total oil production, while the state-owned petroleum company, PT Pertamina, is the second major player in the industry’s industry, accounting for

\(^4\) Aceh, Jakarta, Yogyakarta, Papua, and West Papua
15% production share. Other international oil companies that are dominating the upstream oil sector are Total, Conoco Phillips, Exxon, and BP.

According to Energy Information Agency (EIA), Indonesia is currently a net importer of both crude oil and refined products. Its crude production peaked in 1996, producing 1.6 million barrels per day, and started to gradually decline due to the maturation of the country's largest oil fields and failure to develop new projects to replace the old ones, comparable resources. In 2011, the production was around 1 million barrels per day. Given these production declines combined with rapid demand from domestic consumption, Indonesia became a net oil importer in 2004. In 2009, Indonesia subsequently suspended its membership to OPEC, which it joined in 1962. Nevertheless, Indonesia is the 6th largest net exporter of natural gas and 2nd largest net exporter of coal.

**Figure 4.1: Oil production (000 barrels per day)**

![Graph showing oil production and consumption from 1985 to 2011](image)

*Source: International Energy Statistics, EIA*

Oil has been the main extractive industry in Indonesia but became relatively less important in the last decade. Since 1975, oil rents represent about 8% of GDP, and were responsible for approximately 70% of the combined rents from oil, gas, and minerals. Oil contributed more significantly to the economy between 1974 and 1985, during which time its rent accounted for nearly 17% of the annual GDP, however this amount had declined significantly to 2.4% by 2010. Rents from natural gas, on the other hand, constitute about 3.4% of GDP between 2000-10.
The mining sector in Indonesia has evolved since the late 19th century. Exploitation of tin escalated over the last two decades. Tin production in 1990 was about 31,000 tons, which was approximately 14% of the world’s production, and then rose to 56,000 tons in 2001 and 96,000 tons in 2008, which account for 23% and 31% respectively of the world’s production (Rasiah, 2011). According to EITI\textsuperscript{15}, Indonesia has the world’s largest market of tin representing 20% of global supply. Amid the decline of oil and gas production within the last decade, Indonesia managed to expand the exploitation of minerals, which include copper, nickel, gold, and coal production in addition to its traditional minerals such as bauxite, silver, and tin. The contribution of rent from the mining industry represented 5.3% of the GDP in 2010, and on average 4.6% of the annual GDP since 2004.

Recently, Indonesia has committed to the principle of transparency in the collection and management of the revenue from natural resources. It announced its intention to implement the EITI in 2009 and became an EITI candidate country\textsuperscript{16} in October 2010. Nevertheless, the country still has to fulfill more requirements in order to prove itself as a compliant country.

4.3 Economic Structure and Performance

The Indonesia’s GDP has grown steadily (around 5.5% per annum) since 2001. A 4.6% growth in times of global economic turmoil in 2009 reflects Indonesia’s resilient and rigorous macroeconomic policies. A 6.5% growth in 2011 was even impressive, higher than the growth

\textsuperscript{15} www.eiti.org (2 Aug 2012)\textsuperscript{16} www.eiti.org (2 Aug 2012)
rates ever achieved in pre-crisis years and according to IMF (2012) it was indeed the highest rate in 14 years. Moreover, Indonesia was able to accumulate its international reserve very quickly to more than USD 120 billion as of mid-2011, which is almost twice from the post-Lehman lows, and although the reserve decreased to USD 106 billion by mid-2012, it is sufficient to cover 5.6 months of imports plus government’s payment for external debt service. On the other hand, the country saw a worthwhile reduction of public debt from 76% of GDP in 2001 to now less than 25%. (IMF, 2012)

Figure 4.3: Economic performance

Source: World Development Indicators (World Bank)

Inflation was rather high and fluctuated over the decade, which imposed a challenge for Indonesia, but the control over the inflation rate has improved in recent years. Such success is explained, in part, by a slowing increase of food prices and buoyant earnings from foreign exchange, due to high commodity prices. However, it also reflects the government’s ability to implement its monetary policies. The IMF’s assessment reveals that inflation control is generally good as the REER is in line with its fundamentals and stays close to the equilibrium level (IMF, 2011).

The Asian economic crisis eroded Indonesia’s economy from USD 216 billion in 1997 to just USD 95 billion in 1998 before it soon rebound to USD 140 billion in 1999. In 2011, total GDP reached almost USD 850 billion. Since 2001, the economy has steadily expanded around 5.5% per annum.
Indonesia has transformed the economy, moving it toward a deepening of its reliance on industry and service sectors. With the petroleum endowment, Indonesia manages to steadily improve its economy. Stable growth in industry and service sectors has seen the share of agriculture gradually reduced from 56% of the GDP in 1965 to just approximately 15% in 2000, but it has remained almost unchanged since then. The contribution of services sector is almost constant around 39% of GDP since 2000. The industrial sector share represented around 46% of the GDP during the last decade with remarkable performance of manufacturing industry, which is responsible for about 27% of the GDP. This suggests that Indonesia managed to diversify its industry base to non-manufacturing industries, even though manufacturing grew from just 8% of the GDP in 1965. Nevertheless, the growth in manufacturing is less impressive since 2005.

Amid expansion of the industry sector, Indonesia also managed to diversify its manufacturing. Between 1971 and 1980, its manufacturing was moving toward a more reliance on production of intermediate and capital goods. Production of final consumer goods significantly reduced from 80.8% of total manufacturing in 1971 to 47.6% in 1980. In contrast, manufacture of intermediate and capital goods respectively expanded from 13.1% and 6.1% in 1971 to 35.5% and 16.9% in 1980.

**Table 4.1: Structural Changes of Value Added in Selected Manufacturing Sectors**

<table>
<thead>
<tr>
<th>ISIC Code</th>
<th>ISIC Description</th>
<th>Share of Total</th>
<th>1971</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mainly Consumer Goods</strong></td>
<td></td>
<td><strong>80.8</strong></td>
<td><strong>47.6</strong></td>
<td></td>
</tr>
<tr>
<td>3110</td>
<td>Food Products</td>
<td>33.9</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>3140</td>
<td>Tobacco</td>
<td>27.9</td>
<td>19.1</td>
<td></td>
</tr>
<tr>
<td>3210</td>
<td>Textiles</td>
<td>13.2</td>
<td>12.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classification</td>
<td>1983</td>
<td>1986</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>-------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>5.8</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td><strong>Mainly Intermediate Goods</strong></td>
<td></td>
<td><strong>13.1</strong></td>
<td><strong>35.5</strong></td>
<td></td>
</tr>
<tr>
<td>3310</td>
<td>Wood products, except furniture</td>
<td>1.4</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>3510</td>
<td>Industrial Chemicals</td>
<td>0.8</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>3520</td>
<td>Other chemicals</td>
<td>3.8</td>
<td>7.1</td>
<td></td>
</tr>
<tr>
<td>3550</td>
<td>Rubber products</td>
<td>1.3</td>
<td>4.8</td>
<td></td>
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<tr>
<td>3690</td>
<td>Other non-metallic mineral products</td>
<td>2.5</td>
<td>5.9</td>
<td></td>
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<tr>
<td>3710</td>
<td>Iron and Steel</td>
<td>-</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>3.3</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td><strong>Mainly Capital Goods</strong></td>
<td></td>
<td><strong>6.1</strong></td>
<td><strong>16.9</strong></td>
<td></td>
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<tr>
<td>3810</td>
<td>Fabricated metal products</td>
<td>2.3</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>3820</td>
<td>Machinery, except electrical</td>
<td>0.4</td>
<td>1.6</td>
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<td>3830</td>
<td>Machinery electric</td>
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<td>5.3</td>
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<tr>
<td>3840</td>
<td>Transport equipment</td>
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<table>
<thead>
<tr>
<th></th>
<th>1983</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total manufacturing</td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
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</table>


As a world giant producer of petroleum, fuel exports peaked in 1983, accounting for 82% of the total merchandise exports. The share of fuel exports gradually has gradually declined since then averaging around 27% of merchandise export in the past 11 years, even though oil production continued to be very high and only started to decline, from its peak in 1996. The declining share of fuel exports is evidenced by the expanding share of exports in food items and manufactured goods which suggests that Indonesia has successfully safeguarded its economy against the daunting Dutch Disease by managing to maintain the competitiveness of its agriculture and manufacturing. As cited in Sala-i-Martin and Subramanian (2003)\(^{17}\), analysts generally appreciate the Indonesian government for its ability to safeguard the competitiveness of its agriculture sector, amid oil windfalls, through investing in agricultural technology, inputs, and extension services.

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It is important to note that Indonesia’s fuel export is still registering a considerable share, but the country also imports fuel at the same time. This suggests that Indonesia may export its high quality fuels, while importing lower quality ones to meet its domestic demand. For instance, the fuel imports in 2011 represent more than half of the total fuel exports.

The success of implementing economic policies in Indonesia has been accompanied by a gradual reduction of the poverty rate over time. The poverty headcount in Indonesia declined from 23.4% in 1999, (probably high due to the economic crisis in the preceding years) to 12.5% in 2011. By contrast however, the gap between the rich and the poor was widening. The Gini coefficient of income inequality rose from 0.29 in 1999 to 0.34 in 2005. Despite such increase, the degree of inequality has been moderate and relatively low in the region as a whole.

**Table 4.2: Human development**

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<th>2000</th>
<th>2004</th>
<th>2008</th>
<th>2010</th>
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<tbody>
<tr>
<td>Life expectancy at birth (years)</td>
<td>66</td>
<td>67</td>
<td>68</td>
<td>69</td>
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<tr>
<td>Adult literacy rate (%)</td>
<td>90</td>
<td>92</td>
<td></td>
<td></td>
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<tr>
<td>Primary net enrollment rate (%)</td>
<td>90</td>
<td>92</td>
<td>96</td>
<td>96</td>
</tr>
</tbody>
</table>

*Percentage of people ages 15 and above

Source: World Development Indicators (World Bank)

Attainment in human development has also been promising. Life expectancy at birth improved from 66 years in 2000 to 69 years in 2010. Adult literacy rates registered 92% in 2008. Achievement in provision of education services is progressive. The net enrolment for primary school rose from 90% in 2000 to 96% in 2010, which however means 4% of the school-age children are still living in circumstances that hamper their ability to access educational services.
4.4 Management of Resource Revenue

The 1945 Constitution of Indonesia designated natural resources as the sole property of the state. Therefore, the revenue of petroleum, as well as other natural resources, is centrally collected and managed by the national government until 1999.

Figure 4.6: Oil revenue

![Graph showing oil revenue from 2001 to 2011]

Source: IMF Article IV (2004-2012)

Although the oil revenue does not dominate the national budget, it represents a sizable share of to the fiscal regime. Between 2001 and 2011, USD 195 billion or USD 18 billion per annum was collected from oil. This amount represents 25% of the total revenue or about 4.3% of GDP. Oil revenue declined from 5.6% of the GDP during 1997-2000 to just 3.6% of GDP in 2011 (Ahmad and Mottu, 2002).

Despite its large revenue from natural resources, Indonesia has never established a natural resource fund. It treats resource revenues as fiscal revenue, all of which goes directly to finance the public expenditure through the annual budget process. This means Indonesia employs big-push spending model for the management of its resource revenue.

Through the law on decentralization in 1999, which was subsequently replaced by a similar law in 2004, Indonesia has implemented the revenue sharing approach for transferring some of the resource revenue to the subnational levels. Table 4.2 illustrates how the revenue from oil, gas, and mining is shared between the central government and sub-national levels. Particular example for the case of oil, 15.5% derivation is transferred to the subnational levels: 3.1% for the producing province, 62% for the producing district, and other 6.2% for equally sharing among the adjacent non-producing districts.
Table 4.3: Resource revenue sharing among levels of government

<table>
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<th>Oil revenue</th>
<th>Gas revenue</th>
<th>Mining revenue</th>
</tr>
</thead>
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<tr>
<td>Central Government</td>
<td>84.5%</td>
<td>69.5%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Producing Provinces</td>
<td>3.1%</td>
<td>6.1%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Producing Districts</td>
<td>6.2%</td>
<td>12.2%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Adjacent Districts</td>
<td>6.2%</td>
<td>12.2%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Non-producing Provinces &amp; Districts</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Morgandi (2008)*

The distribution formula for oil and gas revenues is almost the opposite from that of mineral revenue. In the case of oil and gas, 84.5% and 69.5% respectively of the revenue is retained by the central government, leaving the rest to share among subnational levels. By contrast, the majority (80%) of the revenue from mineral resources is allocated for sharing among subnational level governments while the central government is entitled to the remaining 20%. According to Morgandi (2008), higher allocation of mineral revenue to the subnational level may reflect the relatively minimal amount of the revenue. Oil and gas revenues together constitute 25% of the total fiscal revenue while revenues from other resources, including mining, make up only 1%.

Figure 4.7: Resource revenue allocation and redistribution mechanism

*Source: Morgandi (2008) and Agustina et al (2012)*
A specific example, in the case of oil, 15.5% derivation is transferred to the subnational levels: 3.1% goes to the producing province; 6.2% goes to the producing district; and the other 6.2% is to be equally shared among the adjacent non-producing districts.

As an equalization mechanism, to redistribute the national budget in order to reduce the gap across the horizon, particularly between the resource-rich and resource-poor regions/localities, Indonesia designates 34% of its annual national budget to DAU (General Allocation Fund), an equal share of which is for addressing the wage bill and financing expenditure needs of each subnational government. The redistribution of the 50% DAU for financing expenditure needs of each subnational government is subject to weight of certain indexes including population, cost, territory, per capita GDP, and human development. For the subnational governments that receive the derivation, their share of expenditure needs must be deducted by the derivation amount. According to WB (2007), DAU was responsible for 70% of all subnational expenditures (provinces and districts).

4.5 How Has Indonesia Spent Its Resource Revenues?

Government expenditure decreased from 20% of GDP in 2008 to 17% during 2009-11. While such a decline can leave room for more participation from the private sector, the concern is that this reduction was due to a deterioration of revenue generation and as such, was not accompanied by a budget surplus. The fiscal revenue fell from 20% of GDP in 2008 to 16% during 2009-11, which is USD 136 billion in 2011.

**Figure 4.8: Fiscal expenditure performance (% of GDP)**

![Fiscal expenditure performance (% of GDP)](image)

*Source: IMF Article IV (2004-2012)*
The fiscal regime in Indonesia allows for direct transfer from the national budget to the subnational governments. This has resulted in nearly one third of public expenditure being spent by the subnational governments. The average annual public expenditure is around 18% of annual GDP, of which approximately 12% is spent by the central government, leaving the remaining 6% for transfer to the subnational governments.

The central government has been heavily spending on recurrent costs other than wages. Personnel costs incurred by the central government represent only 18% of the total expenditure with 21% going to finance development projects. The remaining 61% is left to cover non-wage recurrent spending, which includes subsidies and interest payments.

**Figure 4.9: Fiscal revenue generation (% of GDP)**

![Fiscal revenue generation graph](chart.png)

*Source: IMF Article IV (2004-2012)*

Indonesia’s fiscal space is also limited by low tax revenue. The total revenue from taxes is currently 16% of GDP - down from 20% in 2008. Although this drop can be explained by the decline of oil revenue due to decreasing production, the revenue generation from tax instruments remains at 11% of GDP, a slight increase from 10% over a decade ago.

### 4.6 Issues and Challenges

Amid this decline in oil production, the economy remains highly subsidized, particularly in the case of energy. In 2011, total subsidy expenditure was USD 34 billion, accounting for 4% of the GDP. Due to high oil prices, the total energy subsidy in 2011 was 3.4% of GDP (or USD 29 billion which was 20% of the total expenditure), an increase from 2.2% in 2010. Nevertheless, there is no clear indication of reduction as energy subsidy has averaged around 3% of annual
GDP since 2004. Moreover, ambiguous production of oil and gas together with the continual depletion of reserves may threaten fiscal stability over the medium- and long-term. Nevertheless, the government has undertaken measures to wean its economy off the energy subsidy by restricting access to subsidized fuels, for instance, from the rich who drive luxurious vehicles.

Dependency on oil revenues has made Indonesia more relaxed about strengthening the revenue collection through tax system. While tax revenue is still quite low (about 11% of GDP in 2011) it has not made a significant improvement in the last decade. Moreover, the current fiscal revenue is partly dependent on oil revenue that constitutes about 4% of GDP (a decline from 6% in 2008.) Therefore, the fiscal space will be squeezed by the expectation of a smaller contribution from oil over time and the burden of sizeable energy subsidy expenditure.

High interregional inequality is still a challenge in Indonesia. According to the World Bank (2007), the DAU has contributed to equalizing the distribution of own-source revenues and resource revenues among subnational governments. However, the report also found that the current formula, of the resource revenue distribution, still explains the high inequality among regions. The elimination of the Wage Bill from the DAU formula would significantly improve the equalization effect. Due to disparity among regions, some parts of the country look like mid-to-high income economies, while other regions are not very different from most African low-income countries. For instance, the poverty headcount is below 3% in cities like Denpasar, Bali, and Bekasi of West Java, but more than 50% of the population in Manokwari, West Irian Jaya, and Puncak Jaya of Papua are living in poverty (WB, 2007).

4.7 Lessons

Indonesia is endowed with a wealth of tin, coal and other mineral resources, in addition to an abundance of petroleum. These rich oil resources have made Indonesia one of the largest oil exporting countries and accordingly it became a member of OPEC. However, the country has used up all of its oil treasure because it employed the Big-push spending model, treating all resource revenue as an integral part of the fiscal revenue. As a result all the resource revenues have been transferred into the national account and used to finance public expenditure on an annual basis. No oil account has ever been established to save the country's petroleum revenue and as such the petroleum-dependent fiscal regime has undermined the tax system. Tax revenue currently accounts for a mere 11% of GDP. It is even less if measured against non-oil GDP.

Nevertheless, Indonesia is appreciated for its efforts to safeguard the economy from the so-called Dutch disease. It has managed to maintain competitiveness in agriculture through sound investment in agricultural technology, inputs, and extension services. Also, it has succeeded in diversifying the industrial sector, thus improving the performance of manufacturing through expanded the share of manufacturing exports, and fueling e domestic consumption.
The collection and spending of resource revenue has been subject to abuse under the past dictatorship regime, which has undermined the country’s transparency and accountability within the public institutions. However, progress has been made since the decentralization reform in 1999 through transfer of a share of the resource revenues to the producing districts and provinces. On top of this, Indonesia approved a freedom of information law, thereby freeing the media and key public institutions such as Supreme Audit, Anti-Corruption Commission, and Anti-Money Laundering Commission.
Chapter 5
Federation of Nigeria Republic

Quick Fact
Area: 923,800 sq. km
Population: 162 million
GDP: USD 236 billion
GDP per capita: USD 1,452
Ethnics: Over 250 groups
Religion: Almost equal share of Muslims and Christians
Oil production: 2.5 million barrel per day (2011)

5.1 Introduction

Nigeria, officially the Federal Republic of Nigeria, is a federal state comprising 36 states and its Federal Capital Territory, Abuja, and 774 local governments. Located in West Africa, Nigeria shares the land borders with the Republic of Benin in the west, Chad and Cameroon in the east, and Niger in the north. The country is home to 162 million people, making it the most populous country on the continent. Nigeria's population is extremely diverse comprising over 250 ethnic groups. The 10 largest ethnic groups\(^\text{18}\) account for nearly 80% of the total population; Hausa, Ibo, and Yoruba being the largest and most influential. Despite its diversity and possibly because of it, English is the official language of Nigeria.

Since its independence from Britain in 1960, Nigeria has experienced a civil war, six coups d'état and has gone through series of regimes that can be described as follows:

- **First Republic (1960-66):** Post-independence the country experienced its first elections in 1964. Under civilian rule the newly formed government was comprised of three (later four) large, but unequal, regions. Each political party controlled one of the regions basing their constituency on the ethnic group that dominated the region.
- **Military Rule (1966-79):** During this period, the country’s four regions were broken into 12 and later 19 states. The country was governed by the military. A military coup occurred in 1966 and followed by a counter-coup in the same year throwing the country into civil war from 1967 to 1970.
- **Second Republic (1979-83):** Civilian rule was reintroduced through a general election in 1979, the first after the civil war. The number of states then grew from 19 to 36.
- **Military Rule (1984-1999):** Another coup led to the re-installment of military rule until 1999.
- **Third Republic (1999-present):** Following the suspicious death of General Sani Abacha, then President of Nigeria, civilian rule was restored through a general election in 1999 and the

\(^{18}\) Hausa, Fulani, Ibo, Yoruba, Kanuri, Tiv, Edo, Nupe, Ibibio and Ijaw.
adoption of the 1999 Constitution. Since then, the country has enjoyed the longest period of uninterrupted civilian rule in its history, the power resting with the People’s Democratic Party (PDP). Olusegun Obasanjo, the President, from PDP, won the election in 1999 and was re-elected in 2003. Umaru Yar’Adua, from PDP, won the election in 2007, but he died of illness in 2010. Umaru Yar’Adua's death paved the way for Goodluck Jonathan, then Vice-President, who became the President and was re-elected in the 2011 general election.

**5.2 Extractive Industries**

The prospect of oil in Nigeria began as early as 1908, but its discovery was not possible until 1956 when Shell D’Arcy\(^\text{19}\) confirmed its success of exploration in the Niger Delta. Two years later, Nigeria started its first oil exports.

The extractive industry in Nigeria has been almost entirely dominated by oil and gas. According to International Energy Statistics of the Energy Information Administration, Nigeria had approximately 37 billion barrels of proved reserve of crude oil in 2012 and holds 185 trillion cubic feet of natural gas deposits, ranking it the 10th largest petroleum reserve in the world (2nd largest in Africa after Libya) and the 7th largest in natural gas deposits. Nigeria is now the largest oil producing country in Africa with a production volume of 2.5 million barrels per day in 2011. Given its low domestic consumption of petroleum (272 thousand barrels per day), net export of oil represents 90% of total production.

**Figure 5.1: Oil production and net exports (000 barrel per day)**

![Bar chart showing oil production and net exports from 1980 to 2011.](chart)

*Source: International Energy Statistics, EIA*

\(^{19}\) Later changed the name to Shell-BP Petroleum Development Company of Nigeria Limited and now is Royal Dutch Shell
Out of 36 states in Nigeria, nine are considered as oil and gas producing states. The oil and gas production highly concentrates in the Niger Delta region where six states, with only 15% of the total population, account for nearly 92% of the total oil and production in Nigeria. The other 3 states are responsible for only 8% of production. Rivers state the largest oil and gas producer is alone responsible for 37%, of production, followed by AkwaIbom state, which accounts for 21% of the total production. (Iledare and Suberu, 2010)

Not surprisingly, Nigeria’s economy is heavily dependent on oil and gas. Oil GDP represents nearly 40% of the whole economy. The country’s exports share almost entirely dependent on oil and gas. Fuel exports represented 95% of total export earnings in 1985 and further increased up to 100% in 2000 before decreasing to 87% in 2010. As a proportion of Nigeria’s total revenue, hydrocarbon revenue on average accounted for 77% between 2000 and 2011.

**Figure 5.2: Role of hydrocarbon in the economy**

The absolute power of the federal government over the petroleum industry is primarily exercised by the President. The power is reinforced by the role of two major institutions – the Ministry of Petroleum Resources (MPR) and the Nigerian National Petroleum Corporation (NNPC). MPR takes formal responsibility for policy-making of the petroleum sector and the President has often served as Minister by himself, usually supported by a junior Minister of State for Petroleum. NNPC, on the other hand, is the commercial and business agency of the federal government in the petroleum sector.
Among six major joint venture companies, NNPC shares are 55% in Royal Dutch Shell (British/Dutch) and 60% in ChevronTexaco (American), ExxonMobil (American), Agip (Italian), and Total (French). With the emergence of offshore oil and gas, the government adopted the Production Sharing Contracts (PSC) with oil companies due to its implication for management of the operations and regulations. Nevertheless, over 90% of total oil and gas production in Nigeria is under JOA regime.

**Petroleum Revenues**

Nigeria’s revenue from oil and gas industry is quite large. Approximately N44 trillion was collected between 2002 and 2011, which was equivalent to USD 324 billion, averaging around USD 32 billion per annum. This level of revenue is substantially higher, both in absolute and relative terms. Oil revenue represents 22% and 77% respectively of the GDP and total revenue over the period. Given the volatility of international prices, oil and gas revenue experienced a dramatic drop in 2009 when the world encountered an economic downturn. The revenue declined from USD 55 billion in 2008 to just USD 18 billion in 2009 before it started to rise again in the following year, reaching USD 51 billion by 2011.

**Figure 5.3:** Revenue from oil and gas

![Revenue from oil and gas](chart)


Most of the Nigeria’s oil and gas revenue is collected from petroleum exports and through petroleum profit tax. According to Iledare and Suberu (2010), of N25 trillion earned between 1998 and 2007, 44% came from petroleum exports, 36% from petroleum profit tax, 19% from domestic crude oil sales and petroleum products taxes, and 1% was generated through bonuses.

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20 Out of 24 companies while the largest four (Shell, ExxonMobil, Chevron and Total) accounted for 83% of Nigeria’s total petroleum production in 2008 (Iledare, W. and Suberu, R., 2010).

21 Formerly “Elf”

22 82% of gross revenue collected by the federal government between 1998 and 2007
rentals and others. Quite a significant share of the revenue from petroleum profit tax is due to the 85% tax rate paid by the petroleum companies.

5.3 Economic Structure and Performance

Nigeria is one of the largest economies in Africa. The economy reached USD 236 billion in 2011, up from USD 13 billion in 1970, and seeks to become one of the top 20 economies in the world by 2020. Of note, Nigeria's economy only started to yield significant expansion since 2000, following the general election in 1999. The GDP increased fivefold from USD 46 billion in 2000. Slower expansion prior to 2000 might have been explained by the fact that the economy was only progressing at the expense of growth in sectors of the economy other than oil, reflecting the so-called Dutch Disease.

**Figure 5.4**: Economic growth and unemployment rates

Since 2005 Nigeria’s economy has been averaging around 6.5% growth per annum. Even amid the global economic downturn in 2008-09, as well as unstable growth of oil GDP, Nigeria's economy was expanded. The overall growth was also accompanied by constant growth of the non-oil GDP over the same period, averaging around 8.7% per annum. Such a steady growth phenomenon was not simply luck, but can be attributed to the government’s effective macroeconomic intervention. According to IMF (2012), it was because the government had a strong countercyclical policy stance, that Nigeria was prepared to accumulate substantial fiscal savings and international reserves from oil surplus through the creation of Excess Crude Account and later use them to smooth the economy in difficult time.
Despite strong growth over the past decade, Nigeria's economy is still nonetheless suffers from by high, and even rising, unemployment rates. Between 2001 and 2008, the unemployment rate was averaging around 13% and increased even further to 20% in 2009 and 24% in 2011. The incidence of unemployment is significantly higher in rural areas (25.6%) compared to 17% in the cities.

On top of high unemployment rates, the economy has been under threat of high and fluctuating inflation. The overall price increases have averaged 20% per annum since 1970. Notably, inflation reached 55% in 1987 and 70% in 1995. Nevertheless, the government has managed to keep both the inflation and real effective exchange rate more stable since 2000. Inflation has been averaging 13% per annum. The current high inflation can to some extent be explained by rising prices of food items (FSDH 2012) and oil prices but is projected to stay within the 5-8% range over the medium term (IMF, 2012).

Dutch disease was obvious in Nigeria through extremely high appreciation of the real effective exchange rate (REER). The local currency excessively appreciated before 1987 and the index of the real effective exchange rate peaked 640%.

Figure 5.5: Economic and trade performance

Source: World Development Indicators (World Bank)

The decline in the agriculture sector was cited as a prime symptom of the Dutch disease in Nigeria’s economy, which was driven by the petroleum windfall (Sala-i-Martin and Subramanian 2003). The share of agriculture in GDP dramatically dropped from 68% in 1965 to just 35% in 1981. The Dutch disease is also evidenced by the downfall of non-oil exports. The share of non-

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23 www.nigerianstat.gov.ng/ (22 Nov 2012)
oil exports accounted for 90% of the total in 1962, but had plummeted to just 7% by 1975. It fell even further to 4% in 1980 and even 0% in 2000 before it started to rebound afterward toward 13% in 2010.

The Dutch disease also severely hurt Nigeria’s manufacturing industry. The oil industry has crowded out manufacturing by making the industry less competitive and thus deteriorated the growth rate over time. The industry performed very well from 1961-70, when the petroleum industry was new and relatively insignificant to the economy. According to Ross (2003), the annual growth rate of manufacturing value added was almost 15% during that period. Gradually, however, the manufacturing sector has weakened and from 1971-80 dropped to 11.5% per annum and further slowed to 3.5% of GDP from by 1990, and just 1.7% by the year 2000.

Unlike manufacturing, agriculture has continued to play an important role. Although declining over time, in relation to the industry and services sectors, the value added from the agriculture sector constituted nearly half (49%) of the GDP in 2002 and still represented one third (33%) in 2007. At the same time, the industry and services sectors have both kept expanding, increased from 31% to 41% respectively and from 21% to 27% between 2002 and 2007.

**Figure 5.6: Economic structure (% of GDP)**

![Economic structure chart]

*Source: World Development Indicators (World Bank)*

The industry sector in Nigeria is dominated by the petroleum. Although oil represents the largest share of the economy, accounting for 41% of the 2011 GDP, a more detailed decomposition reveals that crude oil and natural gas constitutes 38% of the GDP. This means manufacturing and other non-oil industries are responsible for only the remaining 3%.

Per capita income among Nigerians has only seen an increase over the last decade, although the country has enjoyed a significant petroleum windfall since 1970. According to Sala-i-Martí and
Subramanian (2003), the oil revenue per capita has increased nearly tenfold from USD 33 in 1965 to USD 325 in 2000, but such increase does not necessarily translate into a better standard of living among the Nigerian people since the level of per capita GDP remained almost unchanged during this period.

**Figure 5.7: Poverty (%) and inequality (Gini index)**

Remarkable oil wealth has not decreased the incidence of poverty and inequality in Nigeria’s history. Despite huge oil revenues, the poverty rate increased from 36% in 1970 to 70% in 1995. Although it saw some reduction to 55% in 2004, the data from the National Bureau of Statistics shows that the poverty rate bounced back to 61% in 2010 (NBS, 2012). The income gap between the rich and the poor is also widening. The Gini coefficient increased from 39.7 in 1985 to 48.8 in 2010.

**Table 5.1: Human development**

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<td>Life expectancy at birth (years)</td>
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<td>48</td>
<td>50</td>
<td>51</td>
<td>51</td>
<td>52</td>
</tr>
<tr>
<td>Literacy rate, adult*</td>
<td>...</td>
<td>55</td>
<td>...</td>
<td>55</td>
<td>...</td>
<td>61</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Net enrolment rate, primary</td>
<td>...</td>
<td>...</td>
<td>61</td>
<td>66</td>
<td>65</td>
<td>57</td>
<td>58</td>
<td>...</td>
</tr>
<tr>
<td>Primary completion rate**</td>
<td>...</td>
<td>...</td>
<td>77</td>
<td>81</td>
<td>71</td>
<td>74</td>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>

* % of people ages 15 and above; ** % of relevant age group

Source: Sala-i-Martin, X. and Subramanian A., (2003); World Development Indicators (World Bank); and NBS (2012)

Progress in human development has also not been so noteworthy. Life expectancy was 52 years in 2011, a mere 10 year increase in over 40 years’ time. As of 2009, only 61% of adult Nigerians
were literate, while the other 39% didn't have the ability to read and write. This reflects that fact that many children are out of school. In 2010, the net enrolment rate for primary school was only 58%, while the remaining 42% of the primary-school-age children could not access education services.

5.4 Management of Resource Revenues

According to Nigeria’s Petroleum Act 1969, the petroleum resources are centrally owned and managed by the federal government, not individual states. As such, the authority to manage the industry, as well as to collect the revenue from the industry, is the jurisdiction of the Federal Government.

The federal agencies responsible for collecting oil and gas revenues include the Federal Inland Revenue Service, which collects corporate income taxes, Nigeria Customs Service, which is responsible for collecting excise and import duties, the NNPC, charged with managing the government’s participation interests in oil exploration and production, the Department of Petroleum Resources, which collects signature bonuses and royalties, and the Central Bank of Nigeria, into which the collected revenues are deposited.
**Figure 5.8** summarizes how the petroleum revenues from oil and gas are managed and distributed.

**Figure 5.8**: Distribution of hydrocarbon revenue


**Excess Crude Account**
Nigeria started to introduce a *budget oil price-based rule* in 2004, which was intended to protect the fiscal regime from being vulnerable to high volatility of international oil price and insulate the Nigerian economy from external shocks. The rule purposely disconnects government expenditure from the oil revenue. The budget oil price-based rule requires that the annual budget be based on a pre-determined oil price (benchmark price), which is usually reached through negotiation between the executive and the legislative, although it has to be finally approved by the National Assembly.
At the same time, Nigeria established an Excess Crude Account (ECA), a savings account, to keep the oil revenues in excess of the benchmark revenue. ECA was meant to serve as a stabilization fund to cushion the fiscal regime against volatility of international oil prices. If international oil prices surge above the benchmark oil price, the excess oil revenue will flow into the ECA. Conversely if the international oil price falls below the benchmark oil price, the fund can be withdrawn or outflowed from the ECA to finance to budget shortfalls. Nigeria indeed benefited from budget oil price-based rule and the ECA when it was faced with a deficit in 2009 and 2010.

Excess oil revenue had continued to flow into the ECA and the accumulated ECA savings reached USD 20.5 billion in 2008, accounting for 10% of GDP. Nonetheless, these savings were withdrawn to cushion fiscal shortfalls in 2009 when oil revenue declined due to a drop of international oil prices.

**Distribution of Petroleum Revenues**

Nigeria has implemented a policy of the redistribution of petroleum revenue since 1960. Despite this, any revenue-sharing has historically been in favor of the federal government rather than the oil producing states. During the early stage, the producing states were allocated with 50% of the derivation funds from hydrocarbon revenue. However, such provisions only lasted from 1960 to 1963. After that, the share of derivation dropped to just 1.5% and later doubled to 3% in 1992. (Osuoka 2007; Iledare and Suberu, 2010)

Since 1999, a new revenue-sharing system entitles each oil-producing state up to 13% of the revenue derived from oil and gas production in their respective territory. The 1999 Constitution designated that all revenues collected by the federal government be paid into a special account.
called the “Federation Account.” The principle of the derivation fund for the producing states must be constantly reflected, in any approved formula, as being not less than 13% of the revenue accruing to the Federation Account directly from any natural resources.

After the subtraction of the 13% of derivation funds from the hydrocarbon revenue for direct transfer to each oil-producing state, the remaining 87% is combined with the non-hydrocarbon revenue and distributed among three tiers of governments. Since 1999, the distribution formula has been as follow:

- 52.7% to the federal government, which include 4.2% for special funds;
- 26.7% to the state governments; and
- 20.6% to the local governments.

The distribution of funds among states and local governments is subject to the approval of the National Assembly. In determining the allocation formula, the Constitution advises that the National Assembly shall take into account the equality among states, population size, land mass and terrain, internal revenue generation effort, and social development needs. The practice has so far respected the following weighted indexes:

- 40% as equal shares
- 30% based on population size
- 10% based on landmass & terrain
- 10% based on internal revenue generation effort
- 10% based on social development needs

**Figure 5.10:** Final distribution share of oil revenue

*Source: 1999 Constitution and Iledare, W. and Saberu, R. (2010)*
Figure 5.10 further illustrates how the oil revenue is shared among different governments. Based on the distribution formula and taking into the account the fact that oil revenue represented 82% of the total revenue into the Federation Account between 1998 and 2007, each tier of governments is entitled to their respective shares of 46% for the federal government, 18% for all states, 13% for oil states only, and other 23% for the local governments. Additionally, 4% in the share for the federal government is meant to be a special funds or extra-budgetary funds, which, according to Morgandi (2008), includes a stabilization fund, an ecological fund to mitigate environmental damages, a fund for the development of the natural resource sector, and an extra allocation to the Federal Capital.

Sovereign Wealth Fund
Recently, Nigeria made further improvements to the management of oil revenue by establishing the sovereign wealth fund, called Nigeria Sovereign Investment Authority (NSIA), to replace the ECA. This new fund is to ensure sustainable use of hydrocarbon revenues, as well as to prepare the country for the eventual exhaustion of oil and gas reserves. The start-up capital for the NSIA was a transfer of USD 1 billion from the ECA while the subsequent funding will be the monthly transfer from the Residual Funds\textsuperscript{24}.

\textsuperscript{24} The revenue received into the Federation Account other than the Projected Federation Hydrocarbon Revenue for the relevant period.
Ownership and mandate: The NSIA is owned by all three tiers of governments, on behalf of the people of Nigeria. The share of each government’s ownership in the NSIA is equal to their respective percentage share in the revenue allocation formula of the Federation Account. The NSIA is mandated to undertake the following: i) build a savings base for the Nigerian people; ii) enhance the development of Nigerian infrastructure; iii) provide stabilization support in times of economic stress; and iv) carry out such other matters as may be related to the above three objects. Working toward these ends, the NSIA established the following three funds:

- **Future Generation Fund (FGF):** is a diversified portfolio of investment for the benefit of future generations of Nigerian citizens.
- **Nigerian Infrastructure Fund (NIF):** is a portfolio of investments specifically dedicated to assisting the development of critical infrastructure in Nigeria that will attract and support foreign investment, economic diversification and growth.
• **Stabilization Fund (SF):** is a portfolio of investments that can provide supplemental funding, on top of the Budgetary Smoothing Amount, to the Federation to stabilize the fiscal regime.

**Protection of the Funds:** These various funds are bound to be ring-fenced, which mean the assets and liabilities of each of the funds are maintained under a separate structure. The assets from these funds will be managed by external managers appointed by the Board. Moreover, the funds are well protected by prohibiting the shareholders of the funds from borrowing against their interest and thus against the assets of the fund. According to IMF (2012), the stabilization fund will be better protected against ad hoc withdrawals with stricter withdrawal rules than under the ECA.

Nigeria established a Budgetary Smoothing Amount (BSA) in the Federation Account to serve as a buffer fund to smooth any budget deficit before an intervention from the Stabilization Fund can be called. The NSIA Act requires 10% of Residual Funds that keep the oil excess revenue be held in BSA on a monthly basis before the rest can be transferred into the NSIA for further distribution among the 3 Funds – FGF, NIF, and SF. Each of these entities is entitled to 20% of the transfer and the allocation of the remaining 40% is subject to the discretion of the Board. Nevertheless, the cumulative amount of the BSA must not, at any one time, exceed 2.5% of the Projected Federation Hydrocarbon Revenue for the year of such funding.

**Governing Council:** The Council, which should serve an oversight role, is provided with merely an overall task to generally provide advice and counsel to the Board of Directors and to observe the independence of the Board and officers of the Authority. The Council consists of the President, who serves as Chairman, and other 54 members from various important institutions.

**Board of Directors:** The Board of Directors is a custodian of the NSIA and bears the primary responsibility for the attainment of objects of the Authority, the making of the policy and general supervision of the management and affairs of the NSIA.

**Transparency:** In addition to the requirement for an annual internal auditing and an external audit by credible institutions, and in accordance with the International Financial Reporting Standards, the Act seeks to foster transparency by obliging the NSIA to make its annual report, together with quarterly financial reports and all key policy documents prepared by the Authority, accessible to the public. Particularly, the Act orders that the annual report will be summarized and printed at the Authority’s expense in the two most widely circulated newspapers in Nigeria. In so doing the government is providing civil society with the necessary information it requires to respond to financial decisions being made on its behalf.
5.5 How Has Nigeria Spent Its Resource Revenue?

In general, Nigeria did not start saving its petroleum revenue until 2004, when it introduced the ECA. This means Nigeria fully adopted the big-push spending model or balanced budget rule, through which the petroleum revenue was regarded as part of the fiscal revenue and thus was used to finance the annual public expenditure. As a result, hundreds of billions of dollars generated from oil and gas, over the past half a century, have been used up. Moreover, the spending of oil and gas revenue was discretionary and not subject to any earmark or special rule. The spending just followed the normal budgetary process.

Such a fiscal regime made Nigeria very vulnerable to shocks, given its high dependency on petroleum revenue and the volatility of international oil prices through its oil exports. As a result, Nigeria has actually experienced hard times of revenue fluctuation in its history. For instance, revenue from oil exports grew from USD 718 million in 1970 to USD 9.5 billion in 1978, and soared to USD 25 billion 2 years later, but then dramatically dropped to just below USD 5 billion in 1986 due to the collapse of international oil prices (Iledare and Suberu, 2010). Moreover, as illustrated in the figure, fiscal revenue is strongly associated with oil revenue and did suffer a dramatic decline of revenue in 2009 when international oil price plunged.

In 2004, Nigeria abandoned the big-push spending model and started to implement the revenue-benchmarking model. The new model allowed Nigeria to accumulate its ECA savings from the excess revenue (up to USD 20 billion as of 2008), which was approximately 10% of GDP. According to the IMF (2011), Nigeria did benefit from ECA by using the accumulated savings to smooth out fiscal expenditure when its revenue dropped by more than half, from USD 68 billion in 2008 to just USD 30 billion in 2009. As a result, the government managed to ensure fiscal stability by maintaining its spending at around 29% of the GDP in 2009.

Figure 5.12: Fiscal revenue and expenditure (USD billion)

![Fiscal revenue and expenditure (USD billion)](source: IMF Article IV (2005, 2009, 2012))
Between 2004 and 2011, USD 324 billion was generated from oil and gas through the benchmark revenue. This amount represents 77% of the total revenue or 22% of GDP. Overall, the government managed to enjoy the fiscal surplus between 2004 and 2008, but ran a deep deficit in the following 2 years.

**Fiscal Performance**

Nigeria has run very high public expenditure, which may have undermined the role of the private sector in the economy. Since 2004, the size of the public expenditure has been around 29% of GDP and shows no indication of declining. Such a high degree of government involvement in the economy may not only have crowded out the participation of private investment, but may have also unnecessarily wasted public resources.

The central government is responsible for more than half of the public expenditure and has overwhelmingly concentrated on consumption over the last decade. The Nigerian federal government spent USD 41 billion (58% of the total expenditure) in 2011, and has used USD 216 billion or about 16% of GDP since 2004. The proportion of that money spent on capital investment has been very minimal, which represented only 2% of GDP between 2004-2011. At the same time, non-wage recurrent expenditure, including fuel subsidy, took up to 10% of GDP, which must have driven up inflation. Energy subsidy alone accounted for 4% of GDP (IMF, 2012).

**Figure 5.13:** Pattern of federal expenditure (USD billion)

![Pattern of federal expenditure](image-url)

Nigeria has suffered from poor quality investment, although it managed to accumulate physical capital in the past. According to Sala-i-Martin and Subramanian (2003), Nigeria was able to amass a physical capital stock rapidly, (ninefold, between 1965 and 2000). Public capital expenditure, which as financed by the surging oil revenue, was responsible for a substantial part of the increase in capital formation. Nevertheless, the economy has been characterized by a negative growth of total factor productivity over the same period, averaging around -1.2% per annum. Moreover, the poor quality of investment is evidenced by the fact that the capacity utilization in manufacturing, a significant share of which is government-owned, has deteriorated from about 77% in 1975 to 50% in 1983. Since then it has averaged around 35%. This means nearly two thirds of the government’s investment in manufacturing was wasted.

**Figure 5.15: Oil and non-oil revenue (USD billion)**

*Source: IMF Article IV (2001-2012)*
Sizable revenue from petroleum sector has undermined the role of taxes and Nigeria has a long way to go before it can wean its economy from its oil dependency, which leaves the fiscal spending susceptible to the volatile oil sector. The non-oil revenue is insignificant and has no effect at all on total revenue performance. Tax revenue from the non-oil sector has only increased from 8% of non-oil GDP in 2004 to 9% in 2011. More interestingly, the non-oil primary deficit presents no indication of reducing at all. Instead this deficit, it has increased from 24% of non-oil GDP in 2004 to 33% in 2011.

### 5.6 Issues and Challenges

Despite recent improvements in oil revenue management and spending of the revenue, Nigeria still faces several challenges. First, regarding the mechanism for excess revenue management, ECA was not well shielded and was therefore vulnerable to abuses. From its original design, the ECA could only be drawn up from if actual receipts of oil revenue fall short of budgeted amounts. However, as the ECA accumulated larger amounts, more and more political pressures were put on the spending of the ECA. For instance, with pressures from governors, a spending rule of 80-20 was adopted in 2007, by which “80% of oil savings in a particular year would be [automatically made] available for additional spending in the following year” (IMF 2009). This, together with a variety of withdrawals through discretionary means, has resulted in the fund nearly drying up by the end of 2010 (IMF, 2012).

Second, the economy is highly distortionary. Currently it is running at a substantial cost on fuel subsidy, which accounts for about 4% of GDP in 2011. Such reliance on subsidy distorts the market and makes the economy at large uncompetitive and unsustainable. Moreover, a bigger
role of the government in the economy may undermine the role and contribution of the private sector. In addition, the current arrangement still places the economy in an unhealthy position, as it leaves the fiscal regime highly dependent on hydrocarbon sector while the role of the non-oil revenue, particularly tax, remains insignificant.

Third, the Council governing NSIA comprises a large membership and should represent the ownership of the NSIA, but it is not granted the power to check and hold the Board accountable. Its only role is to provide advice and counsel to the Board and to observe the independence of the Board and officers of NSIA. Moreover, the annual meeting of the Council will only be convened by the Secretary or the Chairman of the Board and the Act provides no space for the Council to hold extra-ordinary meetings to accommodate urgency or irregularity. The recruitment and appointment, as well as removal of the Board members, is none of the Council’s business, but is fully at the discretion of the President on the recommendation of the Minister, in consultation with the National Economic Council. It should be noted that the Economic and Financial Crimes Commission (EFCC) of Nigeria estimated that the country lost as much as USD 380 billion to corruption and waste between 1960 and 1999 (Osuoka, 2007).

5.7 Lessons

The discovery and exploitation of large oil reserves in Nigeria was accompanied by civil wars and numerous regime changes between military and civilian rule. Mechanism to manage the windfall revenue were not set up until 2004, and as such the country simply implemented the big-push spending model, where huge amount of petrodollars were simple moved directly into the national budget to finance public expenditure. Bulky and unhealthy spending of resource revenues brought along the Dutch Disease, worsening the economy through hyperinflation and the crowding out the domestic industries particularly agriculture and manufacturing. Consequently, over 40 years, hundred of billions of dollars simply disappeared leaving society as a whole unhealthy and living in poverty. In fact over this time of oil boom in Nigeria, while many became wealthy, the national poverty rate increased from 36% in 1970 to 61% in 2010 and the income gap between the rich and poor continue to widen.

The implementation of the revenue-benchmark model disconnected the public expenditure from the oil revenue. This has allowed Nigeria to save the excess revenue and it did benefit from that saving. The adoption of this model served to smooth out the public expenditure regime when it faced a fiscal cliff in 2009, due to a plunge of oil price. Nevertheless, the predominant share of the oil revenue in the national budget leaves the fiscal regime not very different from the big-push spending model and as such makes the macroeconomic stability prone to risks. In other words although the growth performance has been remarkable, it has been persistently accompanied by a dual phenomenon of high inflation and unemployment rates. The economy is highly subsidized by oil while non-oil revenue, particularly the limited role of taxes, carries
insignificant weight in the fiscal space. More importantly, the country currently remains fragile to civil strife and political instability.

It is important to note that centrally managed oil revenues have seen the federal government behaving as an almost unitary government which has undermine the independence of the state and local governments. Almost 90% of the subnational governments’ finances come directly from the federal government, in the form of financial transfers from the federal revenue. Such easy access to finances has reduced the incentive for the subnational governments to strengthen their collection of revenue from alternative income sources and has reinforced the poor quality of public financial management at the subnational level. This situation poses a huge macroeconomic challenge for the future.
Chapter 6
Timor Leste: Growing Amid Weak Institutions

Quick Fact
Area: 15,410 sq. km
Population: 1.1 million
GDP: USD 3.2 billion
GDP per capita: USD 2,980
Oil production: 100,000 barrels per day (2011)

6.1 Introduction

Located in Southeast Asia, Timor Leste achieved its independence on May 20, 2002 after a traumatic 24-year long struggle. At the time of independence, most of the infrastructure was destroyed after years of fighting, and poverty was pervasive— with per capita income of about USD 300. Over ten years later, the country is still in the process of building its administration and governmental institutions. Similar to Cambodia, Timor Leste uses US currency, given this currency's role in macroeconomic stability and the country's limited institutional capacity.

In the first decade after independence, Timor Leste made significant progress in national income and improvements have been made in human development indicators because of petroleum income and sound policies. Nonetheless, the infrastructure bottleneck remains a major constraint to the country’s development and Timor Leste is still facing extreme poverty. One third of the population has no access to clean drinking water and two thirds are living without electricity. In terms of its governance indicator, Timor Leste is ranked one of the lowest in the region, with the government effectiveness at 9.6 out of 100 percentile ranks.

Table 6.1: Social indicators

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-oil GDP per capita (USD)</td>
<td>378</td>
<td>821</td>
</tr>
<tr>
<td>Life expectancy (years)</td>
<td>57</td>
<td>61</td>
</tr>
<tr>
<td>Literacy rate</td>
<td>50%</td>
<td>47%</td>
</tr>
<tr>
<td>Population below the poverty line</td>
<td>50% (2001)</td>
<td>41%</td>
</tr>
<tr>
<td>Household with access to electricity</td>
<td>26%</td>
<td>36%</td>
</tr>
<tr>
<td>Voice and Accountability (Percentile rank, 0-100)</td>
<td>52.9</td>
<td>54</td>
</tr>
<tr>
<td>Government effectiveness (Percentile rank, 0-100)</td>
<td>14.6</td>
<td>9.6</td>
</tr>
</tbody>
</table>
However, Timor Leste has plentiful oil and gas reserves. Petroleum income accounted for about 270% of non-oil GDP in 2011. In 2011, the government launched the Strategic Development Plan (SDP) with the goal to transform Timor-Leste from a low-income to an upper-middle income country by 2030. The SDP aims for rapid, inclusive growth by improving infrastructure, education, training, worker skills and health systems, and by combating malnutrition. The majority of the country’s infrastructure (including the electric grid, irrigation and water supply, housing and schools) was destroyed in the 1999 conflict.

Future growth, and thus poverty alleviation in Timor Leste, is promising as this country stands to benefit enormously from its petroleum wealth. With such a solid financial resource, the country could scale up its infrastructure development, education, health care, and other social protection programmes. Nonetheless, Timor Leste will have to overcome the risks posed by high inflation, possible fall of oil prices, and its lack of public institutions, especially its public financial management capacity.

### 6.2 Extractive Industries

Timor Leste has many oil/gas deposits both on and offshore. One promising long-term project is the joint Timor Leste-Australia development of petroleum and natural gas resources in the waters southeast of Timor. An agreement was made after the independence on The Joint Petroleum Development Area (JPDA) and revenue sharing between the two countries. Under the agreement, 90% of revenues from existing projects in that area accrue to Timor Leste and 10% to Australia. The government revenue from this field was estimated to be USD 3.2 billion over a 20-year period (IMF 2004). Moreover, the first significant new development in the JPDA, since Timorese independence, is the largest petroleum resource in the Timor Sea: the Greater Sunrise gas field. In this project, Timor Leste would receive 50% of the revenues, which is estimated at to be USD 20 billion over the lifetime of the project.

<table>
<thead>
<tr>
<th>Table 6.2: Major oil/gas fields</th>
<th>Estimated Reserves</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elang-Kakatua-Kakatua-North (EKKN)</td>
<td>Oil reserves about 30 million barrels</td>
<td>Depletion in 2005</td>
</tr>
<tr>
<td>Bayu-Undan</td>
<td>370 million barrels of liquids, and 2.7 trillion cubic feet of gas</td>
<td>USD 3.2 billion over a 20 years horizon (at USD20/barrel), or USD 15 billion at USD100/barrel</td>
</tr>
<tr>
<td>Great Sunrise Fields</td>
<td>7.6 trillion cubic feet of gas</td>
<td>About USD 10 billion. Commencing in 2013</td>
</tr>
</tbody>
</table>

*Source: IMF Article IV (2004).*
The oil production has almost doubled from 52,000 barrels per day in 2004 to 94,400 barrels per days in 2009. As Timor Leste consumes only a small amount of energy due to access and small population, most of the oil production is exported. Oil export in 2009, for instance, was 97% of total oil production.

**Figure 6.1:** Oil production and export (000 barrels per day)

![Bar chart showing oil production and export from 2004 to 2009](chart.png)


**Oil revenues**

Revenue from oil export had increased significantly from USD 141 million in 2004 to USD 2.4 billion in 2008, and USD 3.3 billion in 2011. Given the small population and size of Timor Leste, this is a very significant economy. On average, the petroleum revenue is 32 times higher than the domestic revenue collected by the government.
Figure 6.2: Petroleum revenue (USD million)


6.3 Economic Structure and Performance

The oil and gas sector dominates the Timor Leste’s economy. Oil GDP contributes a large share of total GDP. During the high oil price in 2008, the petroleum revenue contributed 79% of total GDP or 380% of non-oil GDP. Since independence till 2006, the non-oil GDP has been stagnant, experiencing almost no growth. Since 2007, however, the non-oil GDP has been growing at 12%. This rapid growth was driven by rising government spending and agricultural output, especially coffee.

Figure 6.3: Oil and non-oil GDP (USD million)

Timor Leste has had a large current account surplus owing to high oil revenue. On the other hand, non-oil exports, excluding coffee, are minimal. Timor Leste, however, is highly dependent on imports as it has no domestic production base, except subsistent farming and coffee. Poverty has also declined from 50% in 2007 to 41% in 2009 – as a result of high economic growth, public spending, and increased social protection programmes.

6.4 Oil and Gas Revenue Management

The mechanism used by the Timor Leste Government to manage petroleum revenue is based on two objectives: 1) ensuring that the petroleum revenue cannot be illegally used and 2) promoting the wise use of the petroleum revenue. Oil and Gas revenue management in Timor Leste is implemented by the Petroleum Fund Law (2005), the Ministry of Finance (MOF), the Central Bank, Parliament and a number of authorities. The Petroleum Fund Law of Timor Leste determines, in detail the definition and receipt of petroleum revenue, deposit into the PF, how the revenue should be invested, and the expenditure of the revenue.\(^{25}\)

In principle, the MOF is responsible for the overall management of the oil revenue, with operational management handled by the Banking and Payment Authority (Central Bank). An

\(^{25}\) The definition of what constitute revenue must be known and commonly understood, and the definition should be as comprehensive as possible; otherwise rent-seekers will find loopholes. In Chad, for instance, much of the oil revenue falls outside the Law because Chad’s Revenue Management Law (1999) applies to only three fields. Moreover, only direct revenue (dividend and royalties) must be deposited into Chad’s Petroleum Fund, while the indirect revenue (taxes and custom duties on oil production) goes into state’s account (See, Gary and Reisch 2005).
investment advisory board and Parliament monitor operation and internationally recognized accounting firms carry out annual external audits. Informational disclosure, through quarterly and annual reports, is guided by EITI standards.

It should be noted that the Petroleum Fund Law does not define how petroleum revenue is spent. The government, represented by the Ministry of Finance, prepares the budget proposal that needs to be approved by Parliament. In this regard, other important institutions also play an important role in managing Timor-Leste’s petroleum revenue, particularly in terms of expenditure (outflow), transparency and accountability.

Table 6.3: Legal and institutional framework

<table>
<thead>
<tr>
<th>Institution</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Finance</td>
<td>Propose and manage the budget</td>
</tr>
<tr>
<td>Parliament</td>
<td>Approve the budget proposal</td>
</tr>
<tr>
<td>Investment Advisory Board</td>
<td>Recommends options for the investment strategy</td>
</tr>
<tr>
<td>Banking and Payment Authority (Central Bank)</td>
<td>Implement the investment strategy</td>
</tr>
<tr>
<td>Petroleum Fund Consultative Council</td>
<td>Advise Parliament on matters relating to the performance and operation of the PF.</td>
</tr>
<tr>
<td>Transparency</td>
<td>Quarterly and annual detailed data are published along with the results of independent external audits of the monies received and the estimated sustainable income.</td>
</tr>
</tbody>
</table>


The following diagram presents the flows of funds and relevant institutions in petroleum revenue management in Timor Leste. Oil and Gas revenue is paid into the Petroleum Fund and any transfer from the Fund account is subject to a spending ceiling. The PF is integrated into the central government budget and its resource can only be spent through the budget following Parliamentary approval.

The ‘sustainable’ spending ceiling is set to preserve the real value of the petroleum wealth for future generations and to cushion the impact of volatile petroleum revenue. The annual sustainable ceiling is equal to the sum of domestic non-oil revenue and the estimated ‘sustainable’ income (ESI) from the estimated long-term oil wealth (including the reserves in the ground). The ESI, as defined in the Petroleum Fund Law, is 3% of total petroleum wealth. The total petroleum wealth is the sum of the current PF balance plus the net present value of future petroleum receipts\(^{26}\). The ESI is calculated every year based on a set of assumptions on oil output and prices. The estimation of ESI is required by PF Law to use prudent assumptions reflecting international best practice and international standards. With the assumption that the oil price is USD 74 per barrels, the ESI for 2012 is estimated at USD 665 million (IMF 2012).

\(^{26}\) See Appendix for the formula and calculation of the ESI in Timor Leste.
Practically, the ESI is a benchmark to guide withdrawals from the PF and to inform policy discussion. In principle, transfers from the PF will only be made to finance the non-oil fiscal deficit. Moreover, the sum of all transfers in a fiscal year may not exceed a ceiling set by Parliament on the basis of the fiscal sustainability policy. In practice, however, the withdrawals can exceed the ESI, but only with the approval from the parliament based on the justification that such a withdrawal is in the long-term interest of the country.

**The Petroleum Fund**
The Petroleum Fund (PF), which follows the Norwegians-style Petroleum Fund, is the cornerstone for managing Timor Leste’s oil revenue. The Petroleum Fund can be described as a savings fund, which has risen to about USD 9 billion, as of December 2011 (IMF Article IV). The PF was established with the PF Law in 2005 and became operational in July of the same year. According the PF Law, all income from oil and gas production must go the PF while withdrawals can only be made to state budget. In other words, it is a government account with the Central Bank to which the petroleum receipts are credit and from which debits can be made to finance the state budget. PF is managed by the Ministry of Finance but operated by the Central Bank, i.e. Banking and Payment Authority.

Another important aspect of petroleum revenue management is how the revenue is invested. In the case of Timor Leste, the petroleum revenue will be entirely invested offshore (Article 14 & 15, PF Law 2005). Such investment strategies could have three benefits. First, it avoids concerns of bias in domestic investment (i.e. political elites investing in family businesses). Second, offshore investment can help avoid corruption (for example, business competing for contracts). Third, there are currently few opportunities to invest revenue domestically, which is often known as limited absorption capacity.
Moreover, all petroleum fund assets are invested abroad to minimize the real exchange rate appreciation and to protect the primacy of the budget. Most of the PF is invested in US government bonds. At the same time, the PF law, amended in 2011, allows higher investment of equity up to 50% of the PF and for the PF to be secured for government borrowing up to 10% of the PF. As of 2012, therefore, 88% of the Fund was invested in US government bonds.

**Figure 6.6:** Petroleum fund reserves (USD million)

![Bar chart showing petroleum fund reserves from 2005 to 2012](source)


**Figure 6.7:** Petroleum fund asset allocation

![Pie chart showing petroleum fund asset allocation](source)

*Source: Central Bank of Timor Leste and Petroleum Fund Quarterly Report (2011)*
6.5 How has Timor Leste Spent Its Resource Revenue?

The government has adopted a long-term fiscal expenditure and saving policy, which promotes fiscal sustainability for intergenerational equity. In other words, only interest income will be used to finance the non-oil fiscal deficit. In principle, such policy should help minimize the potential for pro-cyclical spending (increase spending in good times and reduce spending in bad times).

Since 2006, large oil-and-gas revenue inflows have led to sizeable external and fiscal surpluses, despite a sharp increase in the government spending. Given the high rate of unemployment, low productivity and sluggish activity, well-targeted public investment with a high import content could support higher growth. Against this background, the government has scaled up its infrastructural development using the Petroleum Fund. Indeed, large infrastructure spending in Timor Leste is mainly financed by withdrawals from the Petroleum Fund. Capital expenditure has been growing fast, particularly in 2008 and 2011.

**Figure 6.8: Revenue and Government expenditure (USD million)**

To manage large public investment programmes, the Government has established several institutions. For instance, the Infrastructure Fund was created in 2011 to manage large multi-year projects. Projects proposed by line ministries are reviewed by the Secretariat of Major Projects at the Ministry of Finance before approval by the board of Infrastructure Fund for projects less than USD 5 million or by the Council of Ministry for bigger projects. The government also established the National Development Agency to supervise project implementation, and the Procurement Commission to assist in the procurement of large projects undertaken by the Infrastructure Fund.
To avoid the risk of rapid fiscal expansion, the government has introduced the Sectoral Investment Programme (SIP) for investment in infrastructure and human capital, which has supported growth, absorbed employment, and raised factor productivity in the wider economy. Through SIPs, most expenditure has also been on traded goods, such as imported capital equipment, or on unskilled labor and other services not in limited supply in the domestic market. These types of expenditures are less likely to trigger rapid increases in prices and wages.

**6.6 Issues and Challenges**

Although Timor Leste has one of the best mechanisms to manage its petroleum revenue, it is still subject to many challenges. First, institution building remains a major challenge to Timor Leste’s governance. For example, the lack of skilled personnel is one of the key constraints to public financial management reform, which is essential for effective oil revenue management.

Second, the transfer from the PF to the state budget is based on ESI, which is subject to large uncertainty due to volatile oil prices and imprecise oil reserves. If the withdrawal is above the ESI level, the government spending can suffer from fluctuation and hurt the very objective of saving for future generations. Indeed, if the withdrawal is above ESI, the value of the PF will decline until no revenue is left. It should be noted that the PF law does not have a mechanism to regulate expenditure above ESI. Parliament can approve a withdrawal of the entire Fund. In this regard, the sustainable revenue management depends on the strength of institutions and good governance.
Third, the PF is based on the Norwegian Petroleum Fund of Norway, which was a rich country with long-established integrity and professionalism in government before receiving its oil revenues. However, there has been a criticism that Timor Leste saved too much of its oil revenues rather than spending them on social projects. Such a saving approach (recommended by the World Bank) while the country is badly in need of infrastructure development was criticized for its contribution to a high level of poverty in the country. Poverty started to decline only after 2007, when the government, (against the World Bank’s advice) increased its spending using petroleum resources\textsuperscript{27}. It should be noted that the revenue management based on ESI assumes that other variables such as government spending and the size of population are constant, which is not the case in Timor Leste. This country has the highest population growth in the world (4.7%), which significantly affects government spending on health and education every year.

### 6.7 Lessons

The oil revenue management in Timor Leste provides at least three lessons for other young resource-rich countries. First, the integration of the Petroleum Fund with the state budget means that the mechanism is clear, and hence simple for public and civil society to understand and monitor. Other resource-rich countries have adopted much more complex models, that hamper wise petroleum revenue management, due to their complexity. Second, the spending of oil revenue in Timor Leste suggests that good institutions need to be in place to ensure the proper utilization of the financial resource. However, as the return from infrastructural development and education is high, a country should not save too much for future generations. Third, in order to avoid rent seeking, the definition of what constitutes petroleum revenue must be clear and comprehensive.

\textsuperscript{27} See the New York Times (2011). The review by the auditors, the Independent Evaluation Group, which reports directly to World Bank directors, and which covers the period from 2000 to 2010, points out this saving approach as one of the major issues.
Appendix
Calculation of ESI

\[ ESI_t = 0.03 \times \left[ PF_t + \sum_{t=0}^{I} \frac{T_{t+n}}{(1 + r)^n} \right] \]

where \( Pt \) is the value of the accumulated revenue in the oil fund at the end of the previous year, in constant prices; \( Ti \) is the oil revenue the government expects (net of production costs) in period \( i \), in constant prices; \( r \) is the discount rate using government securities’ yields; and \( n \) is the number of years until oil production ends.
Chapter 7
Vietnam: At the Cross-Road

Quick Fact
Area: 331,210 sq. km
Population: 90 million
GDP: USD 123 billion
GDP per capita: USD 1,374
Oil production: 318,000 barrels per day (2011)

7.1 Introduction

Over the last two decades, Vietnam has boosted exploration and exploitation activities in the oil and gas sector, and has emerged as an important oil/gas producer in South East Asia. Nonetheless, the country’s rapid economic expansion and industrialization has also increased domestic energy consumption. Over the last 10 years, Vietnam’s economy has grown at an average rate of 7.2% (World Bank Database).

Vietnam can provide insightful lessons for Cambodia for several reasons. First, Vietnam is a developing country whose GDP per capita is not much higher than that of Cambodia. Second, Vietnam is a neighbouring country with limited institutional capacity. Third, the oil/gas revenue is not a big part of the economy, which would be similar to Cambodia when it starts to generate its oil revenue.

7.2 Extractive Industries

Vietnam is an important supplier of crude oil, natural gas, and coal to regional and domestic markets. The exploration activities have taken place mostly since its reunification. In 1987, the Law on Foreign Investment also opened the door for foreign investors in the mining industries. Vietnam’s oil and natural gas production has risen rapidly since the late 1990s and is used entirely to supply the rapidly expanding domestic market. Crude oil production, for instance, has increased from around 50 thousand barrel per day in 1990 to a peak of 400 thousand barrels per day in 2004 before sliding to around 300 thousand barrels in 2011. At the same time, around one third of the production was exported. Since 2010, however, it has become a net importer.

It is now ranked third in terms of proven oil reserves in the Asia-Pacific region, after China and India. As of January 2012, Vietnam held 4.4 billion barrels of proven oil reserves, as compared
to 0.6 billion barrels in 2011\textsuperscript{28}. Vietnam also held 24.7 trillion cubic feet of proven natural gas reserves. The natural gas reserves have increased significantly since 2007 as a result of aggressive policy to attract investment and exploration. As the exploration is still going on and Vietnam’s water remains unexplored, the figure could increase even further in the future. According to EITI (2011), oil and gas reserves of Vietnam could only be available for the next 30 years. In this regard, Vietnam should enhance its exploration activities to increase the reserves for its long-term development.

Figure 7.1: Oil production (000 barrels per day)

![Oil production chart]

Source: EIA International Energy Statistics

The extractive industry in Vietnam has played an important role in the economy, contributing a significant share to the state budget and socio-economic development. On average, it accounts for about 25\% of the state budget from 2000 to 2008. It is also an important source for substantial foreign currency that helps to stabilize the economy. Specifically, the value of oil exports has increased from less than USD 1 billion in 1991 to USD 10 billion in 2012.

Large-scale gas development based on offshore resources began in 1995 with the production of associated gas from the Bach Ho oil field. Natural gas production has increased rapidly since 2000, and reached 290 billion cubic feet in 2011. Vietnam is currently self-sufficient in natural gas. Most of the gas production in Vietnam is processed and then sent to power and industrial sector end users.

\textsuperscript{28} According to Oil and Gas Journal (2012).
The revenue from crude oil accounts for more than 20% of the total state budget in the past 10 years, from 2000 to 2010. It reached as high as 30% in 2006, but has then decreased to as low as 10% of the state budget in 2010. As a percentage of GDP, the oil revenue contributed to less than 10% between 2000-2006, and less than 5% since then. Over all, the extractive industry in
Vietnam continues to grow along with its ‘industrialization and modernization’ strategy. However, this industry is predicted to face many challenges due to the rapid exhaustion of oil and coal reserves.

**Figure 7.4:** State budget receipt from crude oil.

![Graph showing state budget receipt from crude oil](image)

*Source: IMF Article IV (2000-2010)*

**Figure 7.5:** Oil revenue (% of GDP)

![Graph showing oil revenue as a percentage of GDP](image)

*Source: World Economic Outlook (2012), EITI (2011).*
7.3 Economic structure and performance

Vietnam aims to become an industrialized market economy by 2020. Its economy centres on exports of crude oil, marine products, rice and coffee and exports mainly to the US, Japan, Australia and China. The share of industry in GDP has increased over time, from 24% in 1991 to 40% in 2011. In contrast, the share of agriculture has decreased from 40% in 1991 to 20% of GDP in 2011. At the same time, the share of service sector has remained the same, contributing around 40% of GDP.

**Figure 7.6: Main economic sectors**

![Graph showing the percentage of GDP contributed by agriculture, industry, and services from 1991 to 2011](image)

*Source: World Development Indicators (World Bank)*

Vietnam has been carrying out economic reforms since 1986 under the ‘Doi Moi’ policy, focusing on market-oriented economic management. As a result, Vietnam has experienced significant economic growth over the last two decades. The economy has been growing at around 7.5% between 2000-2007 before slowing down to around 6% over the last four years following the global financial crisis in 2008. Reforms and improvement in business climates have made Vietnam an increasingly attractive destination for foreign direct investment.

Against this backdrop, life expectancy has increased from 68 years in 1993 to 74 years in 2008. Over the same time period, poverty has been reduced from 58% to 14.5%. Although the inequality (Gini Index) has remained constant, reflecting the equal of growth sharing during this period.
Table 7.1: Key socioeconomic indicators

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Life expectancy at birth</td>
<td>68.09</td>
<td>71.00</td>
<td>72.78</td>
<td>73.43</td>
<td>73.94</td>
<td>74.39</td>
</tr>
<tr>
<td>Poverty (% of population)</td>
<td>58.10</td>
<td>37.40</td>
<td>28.90</td>
<td>19.50</td>
<td>16.00</td>
<td>14.50</td>
</tr>
<tr>
<td>GINI index</td>
<td>35.68</td>
<td>35.52</td>
<td>37.55</td>
<td>36.81</td>
<td>35.75</td>
<td>35.57</td>
</tr>
<tr>
<td>Natural resources rents (% of GDP)</td>
<td>10.11</td>
<td>5.49</td>
<td>9.28</td>
<td>13.90</td>
<td>16.17</td>
<td>14.99</td>
</tr>
</tbody>
</table>

Source: World Development Indicators (World Bank)

Nonetheless, Vietnam is facing major difficulties in achieving further rapid growth. These challenges include macroeconomic instability, which has significantly weakened the country’s economic competitiveness and performance. Vietnam’s macroeconomic instability is not only a result of short-term turbulence but rather a significant system-wide problem caused by the country’s deficiency in fundamental development concepts and a lack of strategic effort to build good governance29. It should be noted that the Vietnamese economy is dominated by state-owned enterprise. Despite two decades of reforms, the very large state-owned enterprises still constitute a quarter share of Vietnamese industry and command over half of the country’s investible funds. The move by these SOEs into real estate and finance in 2007/8 provided another channel of funding to these corporations while destabilizing the economy as a whole.

7.4 Oil and Gas Revenue management

The oil sector in Vietnam is dominated by the state-owned Vietnam Oil and Gas Corporation (PetroVietnam). PetroVietnam is under the authority of the Ministry of Industry and Trade. Nonetheless, the oil and gas industries involve a number of institutions in Vietnam, as can be seen in Table 7.2.

Table 7.2: Institutions for extractive industries

<table>
<thead>
<tr>
<th>Ministries</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Natural Resource and Environment</td>
<td>Advice government on natural resource management and environmental protection. Propose mechanism and policies related to revenue generation from EI to government and line ministries</td>
</tr>
<tr>
<td>Ministry of Industry and Trade</td>
<td>Manage state functions related to EI, i.e. energy policies, trade, and competition.</td>
</tr>
<tr>
<td>Ministry of Planning and Investment</td>
<td>Advice government on strategy and development plan for EI, as well as domestic and foreign investment in the EI.</td>
</tr>
<tr>
<td>Ministry of Finance</td>
<td>Collect all taxes, fees, and charges from EI. Manage state budget in EI and expenditure.</td>
</tr>
<tr>
<td>The Provincial People’s Committee</td>
<td>Manage on behalf of state in mineral extraction activities as well as revenues in the local communities.</td>
</tr>
<tr>
<td>PetroVietnam Group</td>
<td>State-owned company which implement petroleum activities and sign the</td>
</tr>
</tbody>
</table>

29 Vietnam: Macroeconomic Challenges and Road to Prosperity, 2010. 
In Vietnam, as petroleum is treated as a typical industry, almost all taxes, fees, and charges are paid to the central budget and PVN Group, including an environmental protection fee and a natural resource tax. Oil firms are required to pay direct taxes such as VAT, personal income tax, export-import tax, corporate income tax, and natural resource tax to the central budget. In this regard, it is more important to see the management of revenue inflows, rather than spending in the case of Vietnam.

Figure 7.7 illustrates the types and flows of revenue to the central and local budget. All charges and fees and some taxes, like taxes on lease of agricultural land or non-agricultural land for mining exploration are paid to local budget for local development. Other taxes such as VAT, corporate income tax, personal income tax, and import-export tax are sent to the central budget, which are then allocated nationwide with the approval from the National Assembly.

Source: EITI (2011)
Regarding the fee for information purchase, a proportion of the fee is handled by the PVN group while the remainder goes to the central budget. Similarly, the after-tax profit is distributed partly to the PVN, with the rest going to the central budget. The EITI (2011) provides details on how these distributions are made among the stakeholders.

7.5 How Has Vietnam Spent Its Revenue?

As the oil industry is treated as just one of Vietnam's industries and its revenue flows into the central budget as with other industries, it is difficult to link the spending patterns of the government to the oil revenues. Nonetheless, it is still important to review the patterns of public investment and economic performance.

Overall, recurrent expenditure constitutes around two thirds of total government expenditure. Nonetheless, capital expenditure has increased by 5% in 2009 and 2010, as a part of a stimulus package to reduce the impact of the global financial crisis. This widened the fiscal deficit after 2008, which affected macroeconomic stability. At the same time, the gross investment in Vietnam has been dominated by the private sector, which contributes more than 66% of total investment.

**Figure 7.8:** Government expenditure and revenue (% of GDP)

Source: *IMF Article IV (2000-2010)*
Relative to its Asian peers, Vietnam has performed poorly on the key macroeconomic indicators in recent years, especially over the past three years, and during the global financial crisis in 2008. The Vietnamese inflation rate was as high as 23% in 2008 before dropping to 7.5% in 2009-2010. However, inflation rose again in 2011. At the same time, the value of Vietnamese dong has eroded over time, with the nominal exchange rate increasing from 14,100 dong/USD in 2000 to 16,300 dong/USD in 2008, and 20,509 dong/USD in 2011. Such depreciation has indeed hurt the public confidence on the Vietnamese Dong and encouraged dollarization in Vietnam. In short, the macroeconomic instability in Vietnam, over the last four years, is characterized by high inflation, large budget and trade deficits, and unreliable local currency.

Source: IMF Article IV (2000-2010)
7.6 Issues and Challenges

According to the EITI (2011), the collection and payment to state budget from oil and gas is fairly transparent due to the tight supervision mechanism in the oil sector. However, there remain some unclear points about some revenues in the oil and gas industry. For example, there are fees for purchase and use of petroleum information, environmental protection fees, bonuses, and petroleum clearance fund. According to the EITI (2011), many petroleum lots are not put out for auction, causing the collection of the bonuses to be unclear.

In the case of the petroleum clearance fund, oil and gas companies are required to deposit an amount of money for the clearance of petroleum after exploitation. However, according to the EITI report in 2011, the use and the management of this fund lacks transparency. Moreover, in addition to problems related to formal and informal payments, there are also problems related to received resources in mining activities. For instance, when an entity is granted an exploitation license, rather than engage in mining activities, it instead resells the mine to another entity for exploitation.

7.7 Lessons

As the oil revenue is not the only dominant source of state revenue in Vietnam, it is treated as a typical industry where revenue flows into the central budget. However, there is some ambiguity about the types and management of certain kinds of fees and charges, as well as the petroleum clearance fund.

The oil sector in Vietnam is dominated by State-owned enterprise (SOE). Nonetheless, the government’s large and unjustified subsidies to the state-owned sector, to build this sector to become the foundation and a driving force of the economy, has not only caused resource misallocation, but it has also damaged the vibrancy and competitiveness of the private sector. At the same time, macroeconomic instability, characterized by high inflation, large budget and trade deficits, and unreliable local currency, is in fact, an unavoidable consequence of the problems related to resources misallocation, weak competitiveness, heavy dependence on external and natural resources, pervasive corruption, and government ineffectiveness.
Chapter 8
Synthesis: Lessons Learned

Any country that drives its fiscal revenues from extractive resources faces two major challenges. The first challenge is related to how much to spend in the present and how much to save for future generations. The second challenge is how to adjust government spending and cushion the domestic economy from volatile oil prices and revenues. Resource-rich countries have attempted to address these issues through variety of models of oil revenue management for establishing either savings or stabilizing funds or both.

This study has reviewed oil revenue management in six countries. The review suggests that natural resource revenue can be managed and can be useful for economic development. However, a good policy mix of macroeconomic, fiscal, and exchange rate policy needs to be in place to minimize the Dutch Disease and to ensure macroeconomic stability. The experience in the six countries also illustrates differences among the countries, reflecting the variety of objectives in managing and spending the natural resource revenues, challenges in adhering to established rules, the institutional arrangement, and the fiscal soundness and sustainability in each country. Still, there are some important lessons to be learned from each country.

Build Institutional Capacity
The quality of institutions, indeed, is linked directly to the utilization of the EI revenues and the national development strategies. The good news is that institutions can be built and measures can be taken to prevent and address the problems associated with resource revenue. For instance, Azerbaijan and Ghana over the last seven years have been building and strengthening their institutions and thus had done fairly well in managing their resource revenues. At the same time, experience in many countries shows that transparency and accountability matter. For instance, countries such as Botswana (diamond production), Chile (copper production) and Malaysia (oil) have set precedents of how transparency and accountability contributes to the effective management of resource revenues (Stevens 2006).

In the case of single fiscal regimes such as Vietnam, Indonesia, and Nigeria, types of revenue need to be clearly defined. In Nigeria, for instance, there are many oil fields, with many oil companies with different contracts, which make different payments to multiple government institutions. This complex and non-standard fiscal arrangement is difficult for a state to manage, let alone for parliamentarians, journalists or civil society groups to monitor. In addition to this complexity, revenues streams in countries like Nigeria and Azerbaijan are often paid to different institutions or may pass through more than one institution before reaching government’s account. This would increase the potential for diversion of resource revenues and make it more difficult to reconcile accounts.
Embrace Medium and Long-term Development Strategies

The review of the six countries suggests that the best practices largely depend on the quality of fiscal spending and sustainability of fiscal policies across political regimes over time. Overall, as also pointed by the IMF (2011), a successful development strategy often has three key components: (i) a time path of public investments suited to the national conditions, (ii) economic policy frameworks to promote the private sector, and (iii) a political framework to ensure the rule of law and macroeconomic stability.

Within this context, resource revenue should be turned into public investments rather than private consumption. For low-income countries, the goal is to take advantage of the resource revenue to meet basic needs (e.g. infrastructure, basic essential health services, and education). For middle-income countries, the goal is to make the best use of the revenue to transit from a resource-based rural economy to a human-capital and knowledge-based urban economy. Overall, the following strategies are widely recommended:

- Minimize the risk of Dutch Disease. Policies should be designed to ensure that resource revenues are invested in ways that promote the productive capacity of the domestic economy, which helps raise the production in the non-resource traded good sectors.
- Seek to enhance growth in the short to medium term. The resource revenue should be invested in infrastructure, health, and education.
- Promote good governance that ensures transparency and accountability on the sources and uses of resource revenue, and the expected resource revenue in the future.
- Prepare an exit strategy. As the resource can be depleted, the host country needs to plan a substitute for its own revenue base in the future.
- Regularly re-assess the appropriate economic policies. Resource revenues are highly volatile. In this regard, the appropriate combination of fiscal, monetary, and exchange rate policies will need to change in order to counter the fluctuation of resource prices and revenues, as well as productivity in the non-resource sectors.

Choose Spending Models based on levels of Economic Development and Institutional capacity

Each of the four models presented in Chapter one and reviewed in the six countries has its own advantages and disadvantages, depending on the country’s stage of economic development, quality of institutions, size and nature of the resource revenues. Successful experiences in resource-rich countries suggest that natural resource revenue management in each country must match its development process, balancing the different models of resource revenue saving-spending. For rich countries like Norway, which already has extensive physical and human capital in place, the best choice will be to accumulate financial assets to cover the long-term costs of the public pension. For low-income countries, it might be best to turn oil earnings into physical and human capital through public investment in health, education, and infrastructure. As
Heuty and Aristi (2009) argue, “Bird-in-Hand is an unrealistic proposition of developing countries’. They also pointed out that it is more valuable for developing countries to view the steps taken by Norway during its first two decades of oil production after discovering oil in 1969. Norway did not create the oil fund until 1990 and before that Norway was much more expansionary in its fiscal policy, focusing on education and domestic industries with greatest comparative advantage. It is only after these precondition steps were taken that Norway’s fund management became fiscal discipline.

Establish the Natural Resource Fund
The review of the six countries also suggests that stabilization funds have contributed to enhancing the effectiveness of fiscal policy by making budget expenditure less driven by revenue influx. The presence of an oil fund may have also helped to reduce spending pressure by diverting a proportion of natural resource revenue away from the budget, especially during high resource prices. Also, with weak absorption capacity and institutions, as in the case of Timor Leste, investing a proportion of the funds’ resource abroad might have contributed to reducing real exchange rate appreciation in periods of high oil prices. In Azerbaijan, however, the experience of the funds has been less successful due to the increased fund withdrawal, which deviates from its intended saving purpose.

Nonetheless, the experience in Azerbaijan, Nigeria, Ghana, and Timor Leste suggests that the NRF cannot be a substitute for sound fiscal management. The success or failure of a NRF can be attributed as much to fiscal discipline and fund management. Therefore, it is often the case that a NRF has been more successful in countries with a strong commitment to fiscal discipline and prudent macroeconomic management.

Cambodia and Further Study
How to manage and use resource revenue productively across generations is a crucial question that any resource-rich country needs to answer before the influx of the resulting revenue. Such questions need to be considered and responded to if Cambodia wants to avert the natural resource curse. In this regard, learning and searching for best practices in resource management is timely and important.

To provide policy recommendations for a particular saving-spending model, the characteristics of Cambodia’s economic structure, its budgeting structure, and its social and infrastructure need to be examined. In other words, an in-depth analysis of Cambodia is needed in order to formulate specific recommendations on spending: how much and on what? Nonetheless, based on the theoretical and empirical reviews in this study, the authors recommend that Cambodia should consider the following:

- **Strike a right balance of saving-spending through creating an oil fund.** Indeed, there are incentives for Cambodia to spend the resource revenues, given its need for social and
infrastructure development. However, there are also good reasons for Cambodia to save some portion of the revenue, at least for stabilization purposes, given its weak institutions and limited role of taxes. Our research suggests that, Cambodia should consider a revenue benchmarking model, in which the government would decide a fixed share or variable share of average resource revenues and returns, and save the excess revenue in the stabilization fund.

- **Standardize oil contract types and minimize the complexity of revenue flows.** Cambodia should have a standard contract term, which may make it easier for government to monitor. As the chart of revenues in Nigeria shows, the more steps that are involved between revenue generation and their final receipt by government, the more opportunities there are for linkages.

- **Develop production-monitoring capacity.** Relevant authorities have to be well-trained to monitor EI production and export. Otherwise, government would have to believe all the figures provided by oil companies.

- **Develop clear roles among government agencies.** All relevant agencies, not only petroleum authority or advisor, should build their capacity and have their clear roles in revenue flows and spending. At the same time, Cambodian fiscal institutions should be further strengthened in order to manage the resource revenues effectively.

- **Enhance budget transparency and accountability.** As reviewed in the six countries, budget transparency and accountability is extremely important in the management of resource revenues. Thus, a review board with representatives from government, donors, and civil society can help promote transparency and accountability in resource revenue management in Cambodia.

The next step of the research, that would help Cambodia to effectively spend its resource revenue, is to diagnose the country’s national budget, priority sectors, and institutional arrangements. Then, a simulation exercise based on each model and with different scenarios of oil revenues should be made to assess the economic implications of future petroleum revenues in Cambodia. Such an exercise would highlight the possible scenarios of economic outcomes inherent in in each model and hopefully provide realistic options to policymakers for consideration.
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Absorption Capacity refers to the capacity of an economy to produce or supply to meet an increase in investment or demand (absorb the demand).

Allocation Efficiency (Budget) refers to the efficiency in allocating public budget to strategic and prioritized sectors.

Boom-bust Cycle describes a time period characterized by sustained increases in several economic indicators (e.g. investment and consumption) followed by a sharp and rapid contraction.

Capital Expenditure refers to the expenditure creating future benefits (e.g. building bridge and school buildings). A capital expenditure is incurred when a country spends money either to buy fixed assets or to add to the value of an existing fixed asset with a useful life extending beyond one year.

Consumption Smoothing is the economic concept used to express the desire of people to have a stable path of consumption. It refers to the ways in which people try to optimize their lifetime standard of living by ensuring a proper balance of spending and saving during the different phases of their life.

Dutch Disease refers to the negative consequences arising from large increases in a country's income, usually from a natural resource discovery.

Fiscal Stimulus is an increase in public spending or a reduction in the level of taxation that might be performed by a government in order to encourage and support economic growth.

Inflation is a rise in the general level of prices of goods and services in an economy over a period of time.

Macroeconomic Stability refers to absence of excessive fluctuations in the macroeconomic performance, which in turn increases its prospects for sustained growth. It is associated with low and stable inflation and steady output.

Operational Efficiency (Budget) refers to the efficiency in channeling public budget to target, i.e. the transfer of budget to frontline service providers in timely manner and without leakage.

Price Volatility describes how quickly or widely prices can change. In the energy industry this refers to electricity and/or natural gas supply prices, relative to consumer demand.

Real Exchange Rate as the ratio of the domestic price level and the price level abroad. To simplify, it describes how many of a good or how much of a service in one country can be traded for one of that good or service in another country. In contrast, the nominal exchange rate simply states how much of one currency can be traded for a unit of another currency.

Recurrent Expenditure refers mainly to expenditure on operations, wages and salaries, purchases of goods and services, and subsidies.

Resource Curse is a paradoxical situation in which countries with an abundance of non-renewable resources experience stagnant growth or even economic contraction. The resource curse occurs as a country begins to focus all of its energies on a single industry, such as mining, and neglects other major sectors.

Sovereign Wealth Fund refers to a state-owned investment fund.
The study is funded by

[Logos of USAID, Oxfam, Norwegian People’s Aid, Revenue Watch Institute, ICCO, and MISEREOR]

Through

[Logo of CAMBODIANS FOR RESOURCE REVENUE TRANSPARENCY]