

# The Challenges and Opportunities of Ghana's Offshore Oil Discovery

March, 2011

## Introduction

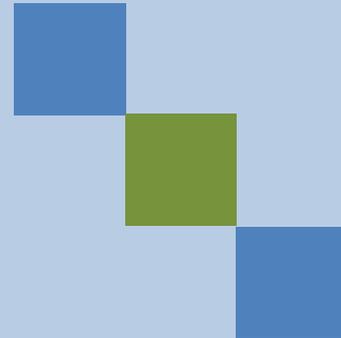
The discovery in the last several years of oil off the coast of Ghana was greeted with significant optimism and immediately began a debate over how the oil revenue should be spent. The Jubilee field's estimated reserves, as of October 2009, amount to 490 million barrels of high-quality oil and justify commercial exploitation should barrel prices exceed US\$30. Such a level of proven reserves puts Ghana on par with neighboring Cameroon (400 million barrels) and above Cote d'Ivoire (100 million barrels), but below Nigeria (36.2 billion barrels). Based on a long run price assumption of US\$75 per barrel, the World Bank estimates potential government revenue at US\$1.0 billion on average per year between 2011 and 2029. Therefore, oil discovery will primarily impact the economy through the budget, and it must be analyzed in this context.

Oil discovery bring promises and raises expectations for the future, especially given the country's development needs. In the short term, oil revenue could help Ghana address its large fiscal imbalances. But oil



## Africa Trade Policy Notes

### Note #14



revenue also brings well-known challenges, particularly in terms of institutional and macroeconomic absorptive capacities. The first set of challenges concern the capture of oil resources by groups or individuals to satisfy their personal interests rather than the public good. The second set of challenges relates to the management and use of a volatile, uncertain, and exhaustible source of revenue. Rather than financing immediate consumption, policy makers would ideally act to convert oil revenue into high social return investment projects that would effectively raise the long term growth rate of the economy. Such challenges raise concerns about Ghana's ability to protect the strength of economic growth and poverty alleviation engendered since the 1990s. This policy note examines these challenges and explores possible options for how they can be overcome, as well as for how Ghana's oil wealth can be used for the maximum long term advantage of its people.

## **Institutional and public financial management challenges**

With the exception of a few developed countries, the governance record of most oil exporters is at best mixed. The recent example of Chad, which reneged on its initial commitments on the use of oil proceeds, illustrates how challenging it can be to design solid institutional mechanisms. Oil-related conflicts in Nigeria also point to the potential for social destabilization. Other common problems that confront countries with new oil discoveries include rent-seeking behavior and corruption, political patronage, lower entrepreneurship and capacity for investment, and increased authoritarianism and civil conflict.

An analysis of Ghana's institutional framework gives mixed results as to the risk of political capture of oil revenue in Ghana. On the one hand, Ghana's government can be considered "factional," meaning that there are political incentives for politicians to engage in patronage politics. Ghana also exhibits large and increasing social polarization (urban vs. rural, south vs. north) and the importance of ethnic identity in political decision making seems to be increasing. On the other hand, Ghana is a young democracy with several strengths: there is no dominant single party, parties are quite well institutionalized, traditional leaders provide some restraint on the capacity of the Executive to pursue its own self-interest, and extra-institutional interventions (for example by the military) are rare in comparison to neighboring countries (World Bank, 2007). For these reasons, risks of institutional failures are lower in comparison with other countries in the same income group, and the range of policy options that Ghana has to address the risk of governance failure is wider.

Still, the fundamental issue for Ghana will be the ability of ruling political forces to renounce the discretionary power provided to them by windfall revenue. The effective exploitation of the oil discovery for the long term benefit of Ghana is predicated on building consensus among political forces and on the recognition that letting other parties take advantage of a discretionary use of funds would be harmful to the country. Consensus-building efforts and improved economic transparency are sine qua non conditions and probably the best vehicles for initiating momentum for institutional reform. At the same time, while consensus building will be crucial, other challenges will have to be overcome.

## **Macroeconomic Challenges**

The oil discovery presents Ghana with two major macroeconomic challenges. The first one, specifically related to oil, is the management of oil price and output volatility and the associated unpredictability of revenue streams. The second one is the nature and recent evolution of the recurrent fiscal balance, which if left unaddressed will elevate pressure to use oil revenue to cover public consumption expenditures rather than to finance needed long term investments.

The key issue, then, is to prevent the direct transmission of oil revenue to the budget. A way to solve this problem is through a budget stabilization mechanism, of which there are two types that could be appropriate for Ghana. The first stabilization mechanism consists of setting up a reference price for oil (typically equal to the long-term price forecast) and transferring only the revenue from oil production evaluated at that reference price to the budget. The remainder would be saved in a Stabilization Fund (SF) if the actual price was higher, or tapping such a fund if the actual price was

lower. A second option for a stabilization mechanism consists of building a Permanent Income Fund (PIF), where oil revenue is held in trust and only the interest rate revenue from the accumulated assets is channeled to the budget. World price and real interest rate assumptions would determine the income that could be spent every year, even after oil reserves have been exhausted.

Stabilization and Permanent Income funds have some similarities. Both funds require solid institutional frameworks in order to be effective, and neither fund would be effective in protecting fiscal sustainability in the absence of control mechanisms on the general budget. But the funds also differ on two important grounds. The first difference regards the sensitivity of the spending rules attached to the two funds with respect to a sudden change in world prices or a new oil discovery. The second regards the amount of money to be channeled into the budget. With a SF, all oil revenue will have been spent at the end of the extraction period, assuming that the reference price is correctly set (i.e. that forecasts are fulfilled). In contrast, with a PIF only a share of oil revenue will have been spent by the end of the extraction period.

Under conservative assumptions, a Permanent Income Fund in Ghana could generate US\$458 million per year given the stream of expected oil revenue discussed above at US\$75 per barrel and a real interest rate of 3 percent.<sup>1</sup> However, it is worth emphasizing that a PIF would need to be invested abroad. Beyond the need to decouple PIF investments from the Ghanaian business cycle to manage

volatility, the permanency of incomes can only be ensured if financial returns on the PIF are guaranteed. For that reason, the PIF should be constituted of commercial investments abroad (such as in stock markets and sovereign bonds of non-oil high income countries). The permanent income (the annual interest income generated by the PIF) channeled to the budget could then be used to finance domestic investment projects with high social returns.

A Stabilization Fund would be more sensitive to changes in oil price and reserve assumptions, particularly during the peak period of extraction. Although changes in oil prices would affect both a PIF and a SF, changes in amounts channeled to the budget in absolute terms following a revision of world price assumptions would likely be larger with a SF. For example, an increase in oil prices to US\$100 per barrel would channel an additional US\$1 billion to the Ghanaian economy, whereas it would channel only US\$240 million with a PIF (with a similar sensitivity if the price decreased). In this way, the sensitivity of the SF to oil price changes would lead to volatile payments to the budget. This could lead to political pressures to revise frequently world price assumptions higher, as the immediate payout from a price increase would be greater.

Regardless of which stabilization mechanism is used, the recent drop in Ghana's fiscal recurrent balance undermines its ability to use oil revenue for financing investment. With a recurrent balance close to zero and concessional borrowing at 2-3 percent of GDP, Ghana can now (with development partners) only finance 2-3 percent worth of investment expenditure, far below the 5-6 percent needed to rapidly close its infrastructure gap. Similarly, oil revenue alone will not suffice to restore

---

<sup>1</sup> See van Winjbergen (2008) for a detailed discussion of permanent income funds.

sustainability. Although tempting in the face of current imbalances and smoothing needs to avoid disrupting or delaying public programs, borrowing on non-concessional terms against future oil revenue (that is, selling oil forward) to postpone fiscal consolidation would elevate risks of debt distress. Indeed, given the successful exploitation of the Jubilee field, failure to reduce the large primary deficit and sustain this consolidation over the coming years would result in a much less favorable debt sustainability outlook.<sup>2</sup>

### **“Dutch Disease” in Ghana—Productivity, Competitiveness, and Social Challenges**

Besides the macroeconomic difficulties discussed in the previous section, channeling windfall oil revenue into the economy poses a number of additional challenges related to productivity, competitiveness, and social issues.

The first issue that poses a threat to Ghana’s economy is the likely appreciation of the real exchange rate. As windfall revenue from the oil discovery spills over into the economy, demand will increase in the face of a limited supply response. This will lead to an increase in the prices of goods and services, and will harm Ghana’s export competitiveness. The second issue is a likely drop in productivity as more factors become concentrated in non-tradable sectors where potential productivity gains are much scarcer. The final issues are the re-allocation of investment within the economy, the migration of workers from rural areas to the cities, and the loss of markets and know-how as firms move into

---

<sup>2</sup> Debt Sustainability Analysis, IMF and World Bank (2009). Ghana is currently classified among countries at moderate risk of debt distress.

the expanding oil sector. Collectively these challenges are often known as the “Dutch disease,” in reference to the impact of gas discovery in 1959 in the Netherlands that led to deep de-industrialization and economic stagnation when the gas was exhausted.

Unfortunately, Ghana already has many of the symptoms of Dutch disease even before the onset of transfers of oil revenue to the budget. Structural transformation has been slow and productivity levels are low. This affects export competitiveness since factor prices remain high in comparison to their marginal productivity. From 2007-2009, the spending of Eurobond proceeds (US\$750 million or 5 percent of GDP) coincided with an acceleration of domestic price inflation, even when the spending was on infrastructure investment projects (mostly to expand electricity generation capacity). This suggests a risk of real exchange rate appreciation and inflationary pressures with the transfer of oil revenue to the treasury (either directly as demand rises, or indirectly through anticipation spending and related speculative bubbles). Time series analyses of the impact of additional capital inflows on relative prices point to the same conclusion.<sup>3</sup>

Agriculture is one sector that could be particularly exposed to the consequences of the Dutch disease. As one of Ghana’s major tradable sectors, agriculture would be seriously exposed to the risk of losing external competitiveness through a real exchange rate appreciation. In addition, given the high degree of mobility of the labor force (between agricultural and informal labor markets), a greater demand

---

<sup>3</sup> Opoku-Afari et al. (2004) suggest that permanent capital inflows can have a strong and significant impact on the real exchange rate.

for labor in cities could exert upward pressure on agricultural wages and reduce external competitiveness for both import-competing and export-oriented agricultural sectors. Experience suggests that once lost, market share can be extremely difficult to regain due to the loss of commodity-specific capital, both physical (e.g. processing plants) and human (scientific knowledge and technical skills). This is particularly true in export markets, where supply chains are often complex and difficult to establish. For example, Ghana is still trying to recover market share in the European pineapple market after having lost ground as European supermarkets demanded new varieties of the fruit.

### **Policy Tradeoffs and a Way Forward**

Once oil begins to flow, Ghana will be confronted with a number of policy choices. Ghana first needs to decide how much of its oil revenue it wants to spend now, and how much it is willing to set aside for the future. This intertemporal choice should be dictated by considerations of absorptive capacity and the social return of spending oil revenue. Inter-generational considerations could also be considered, as choices made today would have irreversible consequences on the amount of oil revenue available for future generations, since they will not be able to choose themselves how to use the revenue once oil reserves are depleted. It will also be important to consider the distribution of oil revenue among social groups. Some groups might be more affected than others at the margin by the direct impact of oil extraction (e.g. on the environment) and spending (symptoms of the Dutch disease). But other groups might deserve greater support given their disfavored initial situation. For instance, although households from the Western region are likely to lose more from untargeted spending of oil

revenue, they would still remain less poor in absolute terms than households in the Northern regions.

Regardless of the choices made, a number of actions should be undertaken to raise the potential development impact of the oil discovery. Most importantly, Ghana would strongly benefit from elevating its institutional and macroeconomic absorptive capacities before channeling oil revenue into the economy. The problem is that raising such capacity will take time, while oil revenue will increase rapidly in the first years of extraction. The risk of misuse is therefore particularly high in these years. Given this context, Ghana should consider the following actions, most which would be justified even in the absence of oil but which could go a long way towards mitigating the negative consequences of the oil discovery.

- *Increase transparency in how oil revenue is allocated.* In order to minimize the risks of political capture, greater social accountability and economic transparency are necessary. First, Ghana should improve transparency by adopting and implementing a Freedom of Information Act, and should enforce accountability measures regarding (i) the publication of reports and revenue and their use, and (ii) the disclosure of bidders' identities and the bidding documents. Second, Ghana should design a home-grown institutional response to the risk of political capture. Various examples from around the world can inspire Ghana, but none of them will be effective if Ghana does not take ownership of the idea and its implementation.

- *Restore fiscal sustainability and responsibility.* Although high fiscal deficits threaten macroeconomic stability, using oil revenue to finance them would only postpone the adjustment while bypassing an important development opportunity. Instead, Ghana must solve its fiscal problem in order for oil revenue to be used as efficiently as possible. The necessary adjustment will call in particular for a review of the public payroll and energy subsidies in light of service delivery and poverty alleviation as well as fiscal affordability. The public management reforms discussed above could help to consolidate the fiscal adjustment effort.
- *Remove bottlenecks in non-tradable sectors.* The effects of the Dutch disease could be mitigated by removing constraints to competition and domestic supply response in non-tradable sectors, including high barriers to entry in formal sectors (starting a business, access to finance, urban land tenure), and poor infrastructure (water, electricity) for urban SMEs. SMEs would also benefit from higher consideration to PPP options, leaving greater financial capacity for the government to finance projects with high social returns.
- *Introduce stabilization mechanisms for managing oil price volatility.* The first mechanism should help to restore the pass-through of international prices into gasoline prices and utilities tariffs, along with establishing targeted mechanisms to protect the poor. A second mechanism to shield the budget from

oil price volatility would consist of establishing a fund (either a stabilization fund or a permanent income fund, as discussed previously), from which predictable transfers would be made to the budget.

- *Increase the provision of agricultural public goods.* The reform would consist of raising agricultural spending up to 10 percent of the government budget (from 6-8 percent currently) to support the provision of various public goods including feeder roads, research, extension services, water and power supplies, storage capacities, irrigation for smallholders, and safety standards.

If implemented, these policy actions together could significantly magnify the positive impact on economic development of the oil discovery. Quantitative simulations suggest that the average real per capita disposable income over the period 2010-2029 could be 9-13 percent higher with these reforms than without. The simulations show, however, that the effect of these reforms would take time to materialize. Delayed implementation of the reform program therefore entails high opportunity costs as a large share of oil revenue would have been sub-optimally spent.

Although important for raising the quality of oil revenue spending, these reforms will not address all challenges; there are several more issues that should be considered. First is the intergenerational equality issue, where future generations would be deprived of the opportunity to decide how to manage the oil if its revenue is fully spent during the extraction period. The second issue is the

distribution issue, as these reforms would only marginally contain a widening rural/urban gap during the oil revenue boom period. The third issue relates to the downside risks associate with these reforms. For example, implementation delays, political feasibility, or a large exposure to changing price and reserve assumptions during the first years of extraction could reduce the impact or effectiveness of these reforms.

***About this note:***

*This note is a summary of the World Bank report 47321-GH titled “Economy-wide Impact of Oil Discovery in Ghana” dated November 30, 2009 and funded by the Multi-Donor Trust Fund for Trade and Development supported by the governments of the Finland, Norway, Sweden and United Kingdom. The views expressed in this paper do not necessarily reflect the views of the funders. Questions and inquiries about this summary and report can be addressed to:*

Sébastien C. Dessus, Lead Economist  
Phone 233 (0) 302 214122 / Fax 233 (0) 302  
227887 / Email: [sdessus@worldbank.org](mailto:sdessus@worldbank.org)  
The World Bank, P.O. Box M27, 69 Dr Isert  
Road, North Ridge, Accra, Ghana