Economy-Wide Impact of Oil Discovery in Ghana

November 30, 2009

PREM 4
Africa Region

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GHANA - GOVERNMENT FISCAL YEAR
January, 1 – December 31

CURRENCY EQUIVALENTS
(Exchange Rate Effective as of November 30, 2009)

Currency Unit = Ghana Cedi
GH¢1 = US$0.70
US$1 = GH¢1.43

Weights and Measures
Metric System

ABBREVIATION AND ACRONYMS

BPEMS - Budget and Public Expenditure Management System
CGE - Computable General Equilibrium
CPIA - Country Policy and Institutional Assessment
DACF - District Common Assembly Fund
EITI - Extractive Industries Transparency Initiative
GDP - Gross Domestic Product
GET - Ghana Education Trust Fund
GIFMIS - Ghana Integrated Financial Management Information System
GLSS - Ghana Living Standards Survey
GNP - Gross National Product
GNPC - Ghana National Petroleum Corporation
GPRS - Growth and Poverty Reduction Strategy
HIPC - Highly Indebted Poor Country
IDA - International Development Association
IMF - International Monetary Fund
MDAs - Ministries, Departments, and Agencies
MDGs - Millennium Development Goals
MDRI - Multilateral Debt Relief Initiative
MOFA - Ministry of Agriculture
MoFEP - Ministry of Finance and Economic Planning
MTEF - Medium Term Expenditure Framework
NEPAD - New Partnership for Africa’s Development
NGL - Natural Gas Liquids
NOC - National Oil Company
NYEP - National Youth Employment Program
ODA - Official Development Assistance
PFM - Public Financial Management
PIF - Permanent Income Fund
PPB - Public Procurement Board
PPP - Public Private Partnership
PREM - Poverty Reduction Economic Management
RER - Real Exchange Rate
SF - Stabilization Fund
SMEs - Small and Medium Enterprises
WAGP - West Africa Gas Pipeline
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The report was prepared by a team led by Sébastien Dessus (Chapter 1), and comprising Denis Medvedev (Chapter 1), Bryan Land (Chapter 2), Katherine Bain and Smile Kwawukume (Chapter 3), Marcello Andrade, Carlos Calvacanti and Michael Stevens (Chapter 4), Vivien Foster and Maria Vagliasindi (Chapter 5), Christopher Costain (Chapter 6), Chris Jackson and Derek Byerlee (Chapter 7). Glaucia Ferreira, Faye Hartbottle and Ayisha Terewina helped prepare this document. Overall guidance was provided by Ishac Diwan and Antonella Bassani. Brian Pinto, Kapil Kapoor and Alexander Kyei peer reviewed this report. Comments, inputs and suggestions were also received from Sunil Mathrani, David Santley, Ventura Bengoechea, Arto Kovanen, Ross Worthington, Tuan Minh Le, Phillip Keefer, Stepehen Ndewga, Andrew Norton and Catherine Gamper. Comments and suggestions from the Ministry of Finance and Economic Planning were coordinated by Amoako Tuffour.
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EXECUTIVE SUMMARY

Ghana’s oil will start to flow in 2011, maybe even before, and most of its known reserves will be extracted in the immediate years after. The promise of oil generates expectations of all sorts, the more so as Ghana currently grapples with a macroeconomic crisis of significant proportions.

Ghana’s reserves are relatively modest by international standards, and will thus not radically transform Ghana’s economy into one where oil becomes the major sector. Nonetheless, they are already large enough to deeply affect the future of the non-oil economy, positively or negatively. As liquidity constrained, Ghana’s economy could expect high development returns from oil. But without sufficient preparation, risks of misuse of oil revenue are considerable, to the extent that it could even lead to a decline in per capita incomes in absolute terms after the initial boom years. The political capture of oil rents could also revert some of the important progress made in Ghana in terms of governance and executive accountability. Hence the huge premium and responsibilities put on Ghana’s successive authorities to wisely manage the oil wealth.

In Ghana, like in any country facing a similar challenge, the fundamental issue is the acceptance and ability of ruling political forces to renounce the discretionary power provided by windfall revenues. Indeed, political calendars might not align themselves well to the sequence of reforms required to ensure that the spending of the oil rent is of sufficient quality. Various options are technically possible to limit discretionary use, but their effective implementation is all predicated on consensus building among political forces, and on the recognition that the threat of letting other parties take advantage of a discretionary use of funds (and its consequences on institutional stability) could be potentially more harmful than the benefit it could derive from such funds. Given the now high likelihood of democratic power transition in Ghana, the current administration could find interest in limiting future governments’ discretionary use of oil revenue.

Building the right environment for ensuring a pro-development use of oil revenue comprises many dimensions. First and foremost is transparency in oil revenue and its allocation, through disclosure of contracts and its full inclusion in the budget process. In turn, increased transparency should open the door to design a home-grown institutional response to the risk of political capture. Various experiences from the rest of the world can inspire Ghana, but none of them will become effective if not fully and broadly owned locally. Second is the need to raise Government’s ability to manage such additional oil revenue and channel it towards projects with high social returns, through restored fiscal sustainability and improved capacity in public financial management, macro-economic and debt management and cost-benefit analysis. Third is the need to remove bottlenecks in the real economy which could generate rents and induce suboptimal investment decisions. The report identifies the following set of actions as critical preparatory steps for an effective pro-poor use of oil revenue:

- **Increase transparency on oil revenue.** Transparency could be improved as Ghana adopts and implements a Freedom of Information Act; and stipulates/enforces accountability mechanisms regarding: (i) the publication of reports on revenue and their use, and (ii) the disclosure of bidders’ identity and bidding documents. The Extractive Industries Transparency Initiative would support such actions.
- **Restore fiscal sustainability.** High fiscal deficits threaten macro-economic stability, and using oil revenue to finance them would only postpone the adjustment while missing an important development opportunity. The needed adjustment will call in particular for tackling long standing issues in public sector and energy, while strengthening public financial management capacities.\(^1\) Restoring fiscal sustainability would also go against borrowing externally on non concessional terms beyond reasonable limits, given associated risks for debt sustainability.

- **Remove bottlenecks in non-tradable sectors.** Dutch disease effects would be mitigated by removing constraint to competition and domestic supply response in non-tradable sectors, including: high barriers to entry into formal sectors (starting a business, labor regulation and minimum wages, access to finance, urban land tenure), and lacking infrastructure (water, electricity) for urban SMEs. The latter would benefit from higher consideration to Public Private Partnership 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 would consist in restoring the pass through of international prices into gasoline and utilities tariff, along with establishing targeted mechanisms to protect the poor. A second mechanism to shield the budget from oil price volatility and reserves uncertainty would consist in establishing an Oil Fund, from which predictable transfers would be made to the budget.

- **Increase the provision of agricultural public goods.** The agricultural sector might be the most affected by an oil-related boom and bust cycle. Given the high social return and pro-poor impact of investing in agriculture, greater than ever attention should be paid to support the provision of various public goods for agriculture, including feeder roads, research, extension services, water and power supplies, storage capacities, irrigation for smallholders, and safety standards.

Many of these actions are currently contemplated by the Government to raise the quality of spending the oil rent and some of them are already being implemented. But most of them will also take time to be completed, which calls for sequencing and the prioritization of measures aimed at raising transparency and restoring macro-economic stability, as oil extraction will peak in the very next years. In the face of it, adopting a mechanism to ensure the channeling of a stable and predictable amount to the budget in these years would minimize risks implied by possible delays in structural reforms.

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\(^1\) See World Bank (2009h) for a detailed discussion on the possible content of these reforms.
1. OVERVIEW

A. INTRODUCTION

1.1 Ghana recently found crude oil off the shores of its Western Atlantic Coast. Jubilee field’s estimated reserves\(^2\), as of October 2009, amount to 490 million barrels of high-quality oil and justify commercial exploitation should barrel oil prices exceed US$30. At its peak (mid 2011- mid 2016), some 120,000 barrels of oil per day could be extracted – making Ghana a net oil exporter for a short while,\(^3\) and the overall period of activity could span over two decades. Based on the fiscal regime in place,\(^4\) and a price assumption of US$75 per barrel,\(^5\) the World Bank’s central estimate puts potential government revenue at US$1.0 billion on average per year between 2011 and 2029. By way of comparison, government revenue in 2008 reached US$3.7 billion (excluding grants) and GDP US$16.1 billion. Such level of proven reserves puts Ghana at par with neighboring Cameroon (400 million barrels) and above Côte d’Ivoire (100 million barrels), but much below Nigeria (36,200 million barrels).

Figure 1.1: Peaking in 2011-16, Oil Extraction Could Add US$1 Billion to Ghana’s Budget

1.2 The oil revenue estimate is subject to a large sensitivity. A number of parameters could modify this central estimate. Given fixed costs of extraction, higher/lower oil prices would

\(2\) Certified proven reserves were still amounting to 278 million barrels by October 2009. However, GNPC’s central estimate (P50) was also at 490 million barrels, and most observers were considering the level of certified proven reserves for Jubilee Phase 1 as severely underestimated. As this report tries to assess the economy wide impact of oil discovery, the use GNPC’s central estimate - rather than certified level - is preferred, acknowledging the uncertainty attached to this number. A sensitivity analysis on reserves is presented in Chapter 2.

\(3\) IMF(2009) projects that Ghana’s oil supply (from Jubilee Phase I) will enjoy an exportable surplus between 2011 and 2016, before domestic demand re-exceeds supply.

\(4\) The regime in place applies to the consortium in charge of the Jubilee field exploitation. The consortium comprises Tullow Oil, Kosmos Energy, Anadarko Petroleum, Sabre Oil and Gas, and the EO group, all of which are small-scale operators. The fiscal regime comprises the following elements: a 5 percent royalty for oil revenue; a 10 percent tax on petroleum revenue net of royalty and operational expenses (i.e., the oil rent); a share of the oil rent growing with the rent amounts; and 35 percent income tax.

\(5\) Source: World Bank (2009a). The price is expressed in real terms and is assumed to span over the 20-year period of extraction (that is, between 2011 and 2029).
disproportionally affect revenue. At US$50 per barrel, government revenue would go down to an average of US$0.4 billion per year; at US$100 per barrel, government revenue would conversely go up to an average of US$1.6 billion per year. Besides, higher cost of extraction could also significantly impact revenue. A 25 percent overrun in cumulated capital costs (estimated at US$3.4 billion over the period 2009-12) would reduce government revenue by 14 percent. A two-year production peak (instead of a five-year peak) could also reduce government revenue to US$0.4 billion per year. On the other hand, additional reserves could be discovered in 2009 as drilling goes on in the Jubilee Field, with the potential to double oil production (and increase even more revenue if facilities already in place could be used to exploit these new reserves).

1.3 **Changes in the equity structure could also affect the stream of Government revenue.** Following the initial exploration phase and the confirmation of commercial reserves, the Government of Ghana, through its national company, the Ghana National Petroleum Corporation (GNPC), could find interest in acquiring supplementary shares in the consortium. This could give additional voice to the Government to promote national interests (e.g. local content, environment preservation, greater control over investment and operation decisions), and, should stakes be underpriced, be financially rewarding over the medium term. At the same time, borrowing for it would reduce net public oil revenue in the initial years (given the need to service the related debt and contribute to capital expenditures), and have important implications for overall public debt sustainability. It would increase Ghana’s exposure to oil risk, while also reducing opportunities to use borrowed capital in other venture.

1.4 **Gas comes along with oil.** Gas would be produced in association with oil at a rate of one thousand cubic feet of gas per barrel of oil. Thus, at peak Phase 1 Jubilee production, Ghana could produce 120 million cubic feet of gas per day. Given Ghana’s non-flaring policy, Jubilee production facilities include capacity to re-inject gas. However, plans underway to build pipelines and processing facilities would result in streams of dry processed gas for use in power generation and natural gas liquids (NGL) for export and domestic use. At current world market NGL prices and a dry gas price of US$2 per thousand cubic feet, gross revenues would be roughly US$260 million per year, that is, less than a tenth of oil gross revenue. In turn, the combination of corporate taxation and an assumed 50 percent equity ownership for GNPC in the gas infrastructure would generate US$120 million per year for the Government. To this figure could be added an implicit rent of US$140 million originating from the difference between a dry gas market value of US$6 per thousand cubic feet (as measured by the delivered price of gas from the West Africa Gas Pipeline, WAGP) and that of US$2 reflecting the cost of extracting, transporting and processing the gas.

1.5 **In the medium term, gas exploitation could encourage the development of several downstream activities.** Unlike oil and NGL, dry gas cannot be easily stored and exported. But with the availability of a gas pipeline, several downstream activities could be undertaken, the most immediate being electricity generation through the conversion of existing and planned power stations from oil to gas, which would generate significant cost reduction. At this stage, derived job creation should remain modest. Further value added could be generated by supplying gas to industries needing a direct heating source, such as cement, food processing, smelting, etc. LNG, methanol or other large-scale gas conversion and export projects would require much larger gas reserves than currently assessed – at least double, given the large fixed

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6 As reported by the press in November 2009, the value of Kosmos’s shares would broadly correspond to Ghana’s total external public debt by end-2008, US$4 billion.
capital costs needed to develop these activities over a long period of time in highly competitive global markets. At that stage, the impact of job creation could be more substantial, depending on the nature of industrial choices retained.\(^7\) In all events, the intended use of the gas rent would require transparent decision making, as for any other public resource. While the rent could be passed to electricity consumers\(^8\) - Ghanaian households and/or firms and foreign clients if electricity is exported, other choices could be made. This could for instance include transferring the rent to the consolidated fund, or leaving it to GNPC which could charge for gas supply at market values.

1.6 **Unlike gas, oil discovery will primarily impact the economy through the budget.** As located off-shore and demanding equipments and expertise not yet available in Ghana, the extraction of oil will not generate significant backward linkages (in terms of demand for domestic inputs and upstream activities) in the short to medium term. And unlike gas, forward linkages and related downstream activities are also expected to be minimal, but through their impact on the budget. Oil revenue will be shared among the Government and the foreign companies in the consortium, with the assumption that the latter will repatriate all their revenue abroad. From an analytical perspective, this report thus chooses to retain the Gross National Product (GNP) as the measure of national welfare in its quantitative analyses, rather than a GDP that is inflated with oil exports but whose proceeds would not stay in Ghana.

1.7 **Oil discovery brings promises and raises expectations, given Ghana’s high development needs, and aspiration to quickly join the group of middle income countries.** The combined manifestos of the two major parties running for presidential elections in late 2008 expressed intentions to apply oil revenue to priority areas of infrastructure, agriculture and food processing, ICT, education, health, rural development, housing, water and sanitation, among others. In the shorter term, oil revenue as it comes on board in 2011 could also help Ghana address its large fiscal and external imbalances, and cushion the negative impact of the current global economic crisis. By end-2008, Ghana’s fiscal and external deficits represented respectively 14.5 and 18.7 percent of GDP.

1.8 **But oil revenue also brings the so-well known challenges associated with it, in terms of institutional and macro-economic absorptive capacities.** These challenges are of various natures, but reinforce each other. A 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. From a narrow economic perspective, these challenges can all be seen as that of converting oil revenue into high social return investment projects which will effectively raise the long-term growth rate of the economy, rather than financing immediate consumption. Such challenges potentially raise concerns about Ghana’s ability to protect the strong growth and poverty alleviation momentum engendered since the early 1990s.

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\(^7\) Preliminary calculations suggest that the arrival of gas in 2012 (from Jubilee Phase 1) could roughly generate 20-30 thousand jobs (against a labor force of 9 million by that time) in the years after through derived demand for labor in various sectors. A doubling of available gas resources from 2015 onwards could generate another 25-35 thousand new jobs afterwards, depending on the pace of reforms needed to improve Ghana’s economic environment, see Section 1.E.

\(^8\) From an equity perspective, a case could be made for instance to subsidize electricity connections (through rural electrification projects for instance) rather than subsidize the price of electricity, which only benefit to those already connected.
1.9 This overview discusses the Ghana-specific nature of these challenges and explores possible options to address them. In doing so, it builds on seven thematic chapters which look at different aspects of the question: (1) oil facts, (2) political economy, (3) public financial management, (4) infrastructure, (5) private sector development, (6) agriculture, and (7) poverty. While the overview tries to bring together the findings of these different chapters, further details and discussions on each of these topics can be found in of the chapters themselves. It concludes that while oil revenue will not be large enough to radically transform Ghana, it could, if improperly managed, impose enough stress on non-oil sectors to severely undermine Ghana’s medium term development prospects. Hence the huge premium and responsibilities put on Ghana’s successive authorities to wisely manage the oil wealth to promote the development of the non-oil sectors.

B. INSTITUTIONAL AND PUBLIC FINANCIAL MANAGEMENT CHALLENGES

1.10 With the exception of a few industrialized countries, the governance record of most oil exporters is at best mixed – and thus possibly worrisome for Ghana. The recent example of Chad, who denied its initial commitments on the use of oil proceeds, illustrates how challenging it can be to design solid institutional mechanisms in this regard. Oil-related civil conflicts in Nigeria also point to possible risks of social destabilization. Rent-seeking and corruption, political patronage, lower entrepreneurship and capacity for investment, and increased authoritarianism and civil conflict are common problems that confront countries that have discovered oil.

1.11 Nonetheless, Ghana benefits from a strong institutional basis. Ghana can be considered as a young democracy with several strengths: there is no dominant single party in Ghana, 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 instance from the military) are rare in comparison to other neighboring countries (World Bank, 2007). These, and other quantifiable governance indicators, explain why Ghana does so well on the World Bank’s Country Performance Indicator Assessment (CPIA), where it ranked 5th among the 75 low-income countries in 2007. The successful democratic transition from December 2008 is another important expression of the maturity of Ghanaian institutions at their highest level. Risks of institutional failures are thus reduced in comparison with other countries endowed with poorer institutions, and the range of policy options to address the risk of governance failure is probably wider.

1.12 At the same time, the review of Ghana's institutional framework points to serious risks of political capture of oil revenue. Ghana’s young democracy can also be considered “factional.” World Bank (2007) shows how the political incentives in Ghana produce a high level of clientele and patronage politics. Ghana spends more, on average, on targeted expenditures, such as the public sector wage bill, energy subsidies, and earmarks – the very reason of widening public deficits in the recent years (see Table 1.2 below), and less for the provision of public goods, such as the rule of law, quality of education or the lengths it goes to

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9 The overview and report focus only on the use of oil revenue, leaving aside contracting/revenue sharing and environmental issues

10 Worldwide Governance indicators (World Bank, 2009b) also rank Ghana among the very first African countries in terms of voice and accountability, regulatory quality, control of corruption, rule of law and government effectiveness. For all these indicators, Ghana recorded significant progress between 1998 and 2007.
fight corruption. Besides, Ghana exhibits large and increasing social polarization (urban vs. rural, south vs. north) and the role of ethnic identity seems to be increasing with ethnic grievances rising. Finally, Ghana displays low levels of civic counterweight, for which a number of studies show that information is the most binding constraint to more executive accountability through vertical means.\textsuperscript{11}

1.13 In the face of such challenges, the fundamental issue is the acceptance and ability of ruling political forces to renounce the discretionary power provided by windfall revenues. Indeed, political calendars might not align themselves well to the sequence of reforms required to ensure sufficient quality of spending the oil rent. Various options are technically possible to limit discretionary use (e.g. fiscal responsibility rules, oil funds, efficient public financial management systems). But their effective implementation are all predicated on consensus building among political forces and on the recognition that the threat of letting other parties take advantage of a discretionary use of funds (and its consequences on institutional stability) could be potentially more harmful than the benefit it could derive from such funds (Bourguignon and Dessus, 2009). In the face of it, improved economic transparency is a sine qua non condition, and probably the best vehicle for initiating momentum for reform, especially in vertical political structures where programmatic parties are absent, as in Ghana. The fact that the current macro-economic situation came as a surprise to the new government\textsuperscript{12} reflects the extent of progress which can still be made in terms of economic transparency and commitment to sound budget execution and public financial management principles.\textsuperscript{13}

1.14 Given the now high likelihood of democratic transition in Ghana, the current administration could find interest in limiting future governments’ discretionary use of oil revenue through improved transparency. Minimizing risks of political capture calls for the establishment of an early consensus among all stakeholders (including agricultural producers) on the management of oil, and a clear institutional framework with embedded accountability and transparency mechanisms to deal with oil companies and oversee the channeling of these funds to the budget. In contrast, technical solutions – such as the creation of special institutions for the management of oil resources – are deemed to fail to deliver their intended objectives, unless emanating from a civil society which can be mobilized against misuse and for better quality of spending through greater transparency. The latter could be achieved as: (i) Ghana adopts a Freedom of Information Act; and (ii) stipulates/enforces accountability mechanisms regarding the publication of reports on revenue and their use, and the disclosure of bidders’ identity and bidding documents. Improved transparency could then pave the way for strengthening social accountability mechanisms, at a juncture where the absence of absolute majority at the Parliament also gives the authorities greater incentives to seek consensus. From an operational perspective, social accountability could be reinforced by: (i) expanding the national dialogue on oil initiated in 2008, focusing on the design of the institutional framework for transparently

\textsuperscript{11} Confused intergovernmental arrangements that limit potential entry points, weak enforcement capacity of the state which leads citizens to put little value in participating since there is no ultimate recourse, a plethora of uncoordinated instruments that do not add up to much impact at the national level and, finally, a weak and poorly organized civil society that has little influence on policy debates or their oversight also contribute to the weakness of Ghana’s civic counterweights and executive accountability.

\textsuperscript{12} On January 19, 2009, soon after Presidential elections, the Economic Subcommittee of the Government Transition Team declared the Government of Ghana “broke,” when discovering the extent of macro-economic deficits. This statement came in contrast to the promises made during the election campaign.

\textsuperscript{13} The decision to relax commitment controls for the Energy Ministry in late 2007 significantly contributed to the build-up of arrears and outstanding commitments discovered by mid-2009.
managing oil revenue; and (ii) capacity building for effective Parliamentarian oversight of oil issues and technical management within the Government.

1.15 **At the extreme, a citizen fund could be envisaged, but this would imply renouncing the ambition of Government to uses oil revenues for the collective good, rather than simply transferring a portion of the rents to individual citizens.** Although challenging from a logistical perspective, the direct distribution of the oil rent to citizens in the form of cash handouts could be envisaged in Ghana, would possibly receive popular support and could provide the needed constituency for good governance of this new resource (Moss and Young, 2009). This solution, however, is only optimal if one considers the risks of misuse and poor governance as high in Ghana, and if one is convinced that a direct transfer will solidify the social contract between the Government and its citizens, as it is argued has been the case in Alaska. For, in order to adopt a direct transfer model, there must be a strong case that the Government is not capable of managing the resources, on behalf of its citizens, and cannot provide Ghana with some of the collective goods it needs so badly to meet its common, development goals, notably in the infrastructure and basic services sectors. Clearly, as this report points out, there is much that needs to be done – both immediately and in the long-term - to ensure that Government does indeed have the capacity and the incentives for managing well these rents. If this can be accomplished, the rents could then be put towards collective goods that will likely have a greater development impact than enhancing individual welfare through a direct transfer.

1.16 **Another related risk is the inability of the administration and budget processes to simply control the amounts and effective allocation of funds to their designated use.** Large and growing budget execution deviations illustrate Ghana’s difficulties to enforce its budget law. Unless addressed rapidly, risks of oil revenue being diverted from its designated use will remain high, and Ghana could even enter in a cycle where mismanaged oil revenue could undermine progress achieved in broad public financial management in the last years. However, earmarking oil revenue to specific projects would not solve the problem, but would rather increase budget rigidity and reduce people and Parliament oversight on public resource allocation. It would also lessen the possibility to encourage program performance through an effective medium-term expenditure framework (MTEF).

1.17 **Prime attention should be given to payroll management.** In the recent years, the greatest source of budget deviation has originated from un-budgeted increases in public employees’ individual remunerations. As already argued above, these practices are driven by political motivations, and thus need to be addressed politically, with a view to avoid the risk that civil service capture the oil rent for itself. From a practical perspective, ongoing negotiations on the payroll reform provide the opportunity to review the payroll in light of related service delivery and fiscal affordability, and explore ways to improve public sector productivity (capacity building, wage levels and structure, etc.). Once done, technical solutions envisaged to improving payroll management (aligning budget and wage negotiation processes, strengthening oversight of records regarding the entrance, exit and the transfers of employees, upgrading the payroll management and control software - IPPD-2, as part of an upgraded GFMIS) would then become much more effective.

1.18 **Public investment effectiveness is another important dimension to act on.** Beyond will, converting oil revenue into public investments requires a number of supportive elements. The first one is budget revenue predictability, as in its absence public spending typically shifts from investment to consumption activities (Celasun and Walliser, 2008). As oil revenue starts to
flow, budget predictability would be strengthened by (i) the development of tools to manage oil price volatility and uncertainties related to extraction (reserves, costs), and (ii) reduced upward expenditures deviations (which need financing). The second one is an effective MTEF, which makes investment decisions consistent (and thus more realistic) with those related to other spending categories, personal emoluments in particular. The complementarity between capital and current expenditures is also central to effective service delivery. Finally, investment effectiveness would be strengthened through greater screening capacities, requiring that investment project selection be guided by clearly defined priorities, competitive bidding when required, and the preparation of pre-feasibility studies (including the calculation of net present social value using either cost-benefit or minimal-cost analysis). Should private participation be sought, frameworks for soliciting, selecting and managing private investment in sectors of interest (energy and telecommunications notably) should be developed.

C. MACRO-ECONOMIC CHALLENGES

1.19 With oil forthcoming, Ghana is confronted with two major macro-economic challenges. The first one, specifically related to oil, is the management of oil price and output volatility and the unpredictability associated with it. 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 investments.

1.20 Budget stabilization requirements prevent the direct transmission of oil revenue to the budget. Ample variations in international oil prices (and hence oil revenue) are incompatible with sound budget execution, and in turn negative for investment planning and the development of medium-term frameworks. In practice, addressing volatile issues boils down to fixing the share of oil revenue to be transferred to the budget, and investing the remainder abroad (given the need to decouple these investments from Ghana’s economic cycles). A first stabilization mechanism consists of setting up a reference price (typically equal to the long-term price forecast), and transferring only the revenue from oil production evaluated at that reference price to the budget, and saving the remainder in a Stabilization Fund (SF) if the actual price is higher, or tapping such a fund if the actual price is lower. A second mechanism consists of building a Permanent Income Fund (PIF) – or “heritage” fund, where only the interest rate revenue from the accumulated assets is channeled to the budget. World price and real interest rates assumptions would determine the income which can be spent every year, even after oil reserves have been

14 In this endeavor, an effective MTEF would benefit from the re-classification of current vs. capital expenditures. For instance, the development funds (the District Common Assembly Fund (DACF), the Road Fund, and the Ghana Education Trust Fund (GET) – which represented 3.2 percent of GDP in 2008), which are classified as capital expenditures, actually finance the National Youth Employment Program (NYEP) which employs above 100,000 people.

15 Since 2005, the Public Procurement Board (PPB) focuses on enforcing the use of open competition (national and international competitive tender) above the minimum threshold, and on reviewing / authorizing requests from MDAs that wish to use less competitive procurement methods. Nevertheless, the degree of adherence and compliance with public procurement rules remains uncertain in the absence of a monitoring system of procurement by value.

16 For the sake of budget transparency though, all oil revenue would be accounted for in the budget, with some portion being saved in oil fund(s) and the remainder treated just as the same as any other government income.

17 In contrast, the proposal tabled for discussion by MoFEP’s fiscal regime technical team under Ghana’s previous administration to channel two-thirds of oil revenue to the budget would have failed to insulate the budget from volatility in crude oil prices. The proposal was envisaging using the remainder to set up the Petroleum Regulatory Authority and the National Oil Company (NOC) in a first phase (the first 3 years of extraction). In a second phase, the remainder would have been used to set up a heritage fund (40 percent) and a stabilization fund (60 percent).
exhausted. Ongoing discussion related to the preparation of an oil revenue management bill provides the opportunity to address these concerns in a transparent manner.

1.21 **Stabilization and Permanent Income funds differ on several grounds.** Beyond sharing similar stabilization objectives, both funds also require solid institutional frameworks to be effective, regarding in particular investment strategies. And none of these funds is effective to protect fiscal sustainability in the absence of control mechanisms on the general budget. But these funds also differ on two important grounds. The first one regards amounts to be channeled to the budget and their exhaustive nature. 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 (by definition, as “permanent”) been spent by the end of the extraction period. In the example set below, amounts spent under a PIF over the extraction period would only represent 45 percent of Ghana’s total oil revenue over the same period. The second one regards the sensitivity of the spending rules attached to the two funds with respect to a sudden change in world prices or new discovery.

1.22 **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 at 3 percent. This amount (expressed in real terms using 2008 prices) is broadly equivalent to the amount of official transfers (Official Development Assistance, ODA) received annually in the last 5 years (2004-8), and represents 45 percent of the US$1,021 million expected annually from oil revenue (and to be spent with a SF under perfect price forecasting). The table below gives a sense of the sensitivity of the permanent income to various assumptions regarding oil prices and real interest rates. All amounts are expressed in real terms (US$ 2008).

<table>
<thead>
<tr>
<th>Table 1.1: Real Annual Permanent Income, Various Assumptions (US$ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Interest rate</td>
</tr>
<tr>
<td>Oil Price (US$ per barrel)</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>75</td>
</tr>
<tr>
<td>100</td>
</tr>
</tbody>
</table>

*Source: World Bank staff calculations*

1.23 **It is worth emphasizing that a Permanent Income Fund would need to be invested abroad.** Beyond the need to decouple PIF investments from Ghana’s cycles to manage volatility, the permanency of incomes can only be insured if financial returns on the PIF are guaranteed. For that reason, it is not advisable to invest in projects which can be justified for their high social returns (and would thus be in almost all cases domestic), but with low commercial returns (van Wijnbergen, 2008). This is the case of a number of public investment

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18 The fiscal responsibility law currently in preparation with IMF technical assistance could help enforcing a hard budget constraint along with PFM reforms addressing the issues discussed in the paper, and an effective MTEF (see World Bank, 2009c, for greater discussion of these issues).

19 See van Winjbergen (2008) for a detailed discussion on permanent income funds.

20 An alternative way is to compute the permanent income in per capita terms, which is obtained by subtracting from the real interest rate the population growth rate. With a 1.6 percent annual population growth rate projected for the period 2010-2030 (Source: World Development Indicators), the real permanent income would be US$214 million for a real interest rate of 3 percent and a barrel price at US$75.
projects, which are public to begin with because their low commercial returns make their implementation uninteresting to the private sector. PIF should thus be constituted of commercial investments abroad (e.g. stock markets and sovereign bonds of non-oil high income countries). However, the permanent income (the annual interest income generated by the PIF) channeled to the budget could certainly be used to finance domestic investment projects with high social returns.

1.24 A Stabilization Fund would be more sensitive to changing price and oil reserve assumptions, particularly during the peak period of extraction. Revisions in world oil price assumptions (or similarly, oil price forecast errors) would affect similarly (in relative terms) the amounts channeled to the budget from a Stabilization Fund or a Permanent Income Fund. Nonetheless, changes in amounts channeled to the budget in absolute terms following a revision in world price assumptions or reserves could differ much more widely. For instance, with a Stabilization Fund a revision upwards of long-term world oil prices to US$100 per barrel in 2015 would channel an additional US$1.1 billion to the Ghanaian economy, whereas with a Permanent Income Fund, it would channel US$240 million. In turn, political pressures to frequently revise world price assumptions might be more pronounced with a Stabilization Fund, as immediate stakes are higher. Similarly, a sudden change in reserves assumptions would affect amounts channeled to the budget much more immediately under a SF than under a PIF.

1.25 While a PIF can be considered as an extreme solution, there is probably still a need to decouple transfers to the budget from the extraction profile. By equating transfers over an infinite number of years, a PIF might be considered extremist as placing stabilization needs before development needs, even if at the same time preserving inter-generational equity. But aiming at neutralizing price volatility only would induce great budget volatility in the next decade given the known extraction profile as of today (see Figure 1.1). In turn, the revenue management framework could also consider including a mechanism to decouple transfers from the yearly extraction profile.

1.26 Budget stabilization requirements also call for better management of energy-related subsidies. Even more pressing in terms of budget execution is the management of subsidies to energy related state-owned enterprises. Although benefiting from a favorable electricity generation mix (hydro vs. thermal), public transfers to the energy sector still absorbed 1.2 percent of GDP in 2008. Transfers paid mostly for below-cost recovery tariffs and are therefore largely absorbing oil prices fluctuations, transmitting them directly to the expenditure side of the budget. In the face of it, the authorities could consider raising the pass through of world prices to domestic consumer prices (i.e. aligning tariffs to production costs). This could be done while protecting the most vulnerable consumers through a progressive tariff structure and/or targeted transfers. The use of domestic gas in the near future could also be an element of greater predictability in electricity costs.

1.27 More generally, the recent drop in the Ghana’s fiscal recurrent balance undermines its ability to use oil revenue for financing investment. In the last four years, Ghana’s recurrent

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21 Typically, the legal framework establishing such funds grants the Government with the possibility to amend amounts transferred to the budget’s consolidated fund based on the annual estimate of the permanent income (certified by independent auditors), or of the revenue benchmark in case of a stabilization fund. In case where the Government wants to exceed the legal appropriation, detailed explanation is generally to be provided to the Parliament, such as in Timor-Leste’s Petroleum Fund.
balance declined by more than 6 percentage points of GDP (from 8.3 to 2.1 percent of GDP), mostly as a consequence of increased public sector wages and energy subsidies.\textsuperscript{22} The promised “single spine” payroll reform, pending issues related to payroll management, and the absence of cost-recovery mechanism in the energy sector are all threatening to bring this balance further down. With a recurrent balance at 2 percent and concessional borrowing historically at 5 percent of GDP, Ghana with Development Partners can now finance 7 percent worth of investment expenditure, far below the 10-11 percent needed to rapidly close its infrastructure gap.\textsuperscript{23}

Table 1.2: Widening Recurrent Deficits Contributed to a Deteriorated Fiscal Balance
Ghana recurrent and overall fiscal balance, 2005-8 (as a percentage of GDP)

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total revenue</td>
<td>27.1</td>
<td>27.3</td>
<td>28.8</td>
<td>27.5</td>
</tr>
<tr>
<td>Recurrent expenditure</td>
<td>18.8</td>
<td>22.0</td>
<td>22.9</td>
<td>25.4</td>
</tr>
<tr>
<td>Wages</td>
<td>8.5</td>
<td>9.7</td>
<td>10.1</td>
<td>11.3</td>
</tr>
<tr>
<td>Good and services</td>
<td>3.2</td>
<td>3.7</td>
<td>4.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Social transfers</td>
<td>2.7</td>
<td>2.9</td>
<td>4.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Energy subsidies</td>
<td>0.7</td>
<td>1.5</td>
<td>0.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Contingency fund</td>
<td>0.0</td>
<td>0.8</td>
<td>1.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Domestic debt interest costs</td>
<td>2.8</td>
<td>2.6</td>
<td>2.3</td>
<td>2.7</td>
</tr>
<tr>
<td>External debt interest costs</td>
<td>0.9</td>
<td>0.8</td>
<td>0.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Recurrent balance</td>
<td>8.3</td>
<td>5.3</td>
<td>5.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Domestic-financed capital expenditures</td>
<td>5.9</td>
<td>7.9</td>
<td>9.2</td>
<td>10.5</td>
</tr>
<tr>
<td>ODA-financed capital expenditures</td>
<td>6.1</td>
<td>4.5</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Arrears repayments</td>
<td>1.3</td>
<td>0.5</td>
<td>0.7</td>
<td>1.0</td>
</tr>
<tr>
<td>Overall fiscal balance</td>
<td>-4.9</td>
<td>-7.5</td>
<td>-9.2</td>
<td>-14.5</td>
</tr>
</tbody>
</table>

\textit{Source: IMF.}

1.28 **Oil revenue will not suffice to restore fiscal 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, forward selling oil) to postpone fiscal consolidation would elevate risks of debt distress. Indeed, as pointed by the recent joint Debt Sustainability Analysis (IMF and World Bank, 2009), even with oil production, 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.\textsuperscript{24}

\textsuperscript{22} These figures do not include arrears and contingent liabilities accumulated throughout 2008 and disclosed in August 2009 at the mid-year budget review. The consideration of these arrears and contingent liabilities further reinforces the trend of widening recurrent deficits observed since 2005.

\textsuperscript{23} Meeting Ghana’s infrastructure needs could cost US$1.6 billion per year for the next decade, out of which US$0.6 billion for maintenance and US$1.0 billion in the form of capital expenditure, see Chapter 5.

\textsuperscript{24} With fiscal consolidation and oil, public debt to GDP, projected to reach 63 percent of GDP in 2009, could fall to less than 40 percent by 2029. Under this baseline, Ghana is classified among countries at moderate risk of debt distress.
D. PRODUCTIVITY, COMPETITIVENESS, AND SOCIAL CHALLENGES

1.29 Channeling windfall oil revenue into the economy poses a number of additional challenges. The first one is the likely appreciation of the Real Exchange Rate (RER) - the increase in the price of non-tradable goods and services, as demand for them increases with windfall revenue in the face of a limited supply response, and its corollary in terms of lost export competitiveness. The second one is the likely drop in productivity, as more factors get concentrated in non-tradable sectors where potential productivity gains are much scarcer.25 The third one is the existence of re-allocation (investments, migrations) and transition costs (lost markets and know-how), which can make temporary specialization very costly overall if the society has to return to its previous specialization patterns. This risk exists with oil, given its exhaustible nature and the possibility that it conducts to an untenable pattern of specialization. These challenges are often known as “Dutch disease” in reference to the impact of gas discovery in 1959 in the Netherlands which led to deep de-industrialization and economic stagnation when gas was exhausted.

1.30 Ghana has already many of the symptoms of the Dutch disease. Ghana has a large and growing non tradable (non-agricultural)26 sector, comprising many parts of the public sector and a wide range of private activities (construction, finance, trade) servicing large resource-based extractive industries (gold), and remittances and ODA.27 Structural transformation has been slow in the face of low productivity levels, the latter also affecting export competitiveness as factor prices (land, labor) remain high in comparison to their marginal productivity. In the last two decades, “non-traditional exports” have only grown modestly and not enough to shake the position of traditional exports, gold, cocoa and timber, whose respective positions have only varied in time with international prices. In 2007-9, the spending of Eurobonds proceeds (US$750 million, or 5 percent of GDP), even if entirely used for investment projects (mostly to expand electricity generation capacity) coincided with an acceleration of domestic price inflation. Although impossible to establish a strict causal relationship between the two events, this nevertheless suggests a risk of real exchange rate appreciation with oil revenue (directly as demand pressures rise, or indirectly through anticipations and related speculative bubbles). And time series analyses of the impact of additional capital inflows28 on relative prices point to the same conclusion.

1.31 Several structural factors may be at the origin of these symptoms. A low supply response to increased demand in the non-tradable sector is theoretically at the origin of RER appreciations. In Ghana, several factors could suggest that the potential supply response in non-

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25 Larger potential productivity gains in tradable sectors are theoretically justified by the possibility to exploit greater gains of specialization and larger economies of scale, greater access to knowledge and know-how and higher competitive pressures. There is consistent empirical evidence to suggest that productivity gains are higher in tradable sectors than in non-tradable sectors (Ito et al., 1997, De Gregorio et al., 1994, Baldi et al., 2004, Egert et al., 2003). The distinction between tradable and non-tradable sectors is nevertheless tenuous, and evolving over time. One way to think about it is to look at the cost required to transport some products and services from one economy to another.

26 Ghana also has a subsistence agriculture sector which is mostly non-tradable, although for reasons of a very different nature.

27 The sum of gold exports, remittances and ODA represented a third of GDP in 2008.

28 Opoku-Afari et al. (2004) suggest that permanent capital inflows have had a strong and significant impact on the real exchange rate.
tradable (non-agricultural) sectors is indeed low. These include rigid land and formal labor markets, a large duality between formal and informal markets, and a poor infrastructure (energy and water in particular). Besides, the likely existence of speculative bubbles (for instance in real estate) is not to be ignored, as fuelled with remittances in particular.

**Figure 1.2: Without Reforms, Oil Could Lower Per Capita Incomes in the Long Run**

Real per capita disposable income (index 1: 2008)

1.32 **Quantitative simulations point to serious risks of Dutch disease and boom and bust cycles.** Simulations run over the period 2009-29 with a Computable General Equilibrium (CGE) model specifically designed for this purpose illustrate this point. The model used here is calibrated on 2008 data, comprises 26 economic sectors (including 6 for agriculture), and depicts a number of important features of today’s Ghanaian economy: a dual labor market (formal vs. informal), rigid urban and rural land supplies, and fixed electricity tariffs. The model also distinguishes new capital from that already installed - the latter being less mobile than the former – to capture the existence of reallocation costs. We measure the impact of oil revenue on economic activity by comparing a baseline scenario (without oil) with a first alternative scenario where three-fourths of the entirety of oil revenue (i.e., no savings of oil revenue, as with a

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29 Notwithstanding the reforms now under way with regards to land tenure, access to land continues to be an important consideration for enterprises, particularly in the metropolitan areas. Delays in land registration and titling create bottlenecks in access to land and in site development.

30 Ghana ranks particularly poorly in terms of Labor Market flexibility, ranking 145th in Doing Business. Half formal sector employees are in the public sector where wage setting is grossly de-linked from performance.

31 The high prevalence of informality in Ghana remains an important obstacle to improvements in productivity. Some 87 percent of the Ghanaian workforce is employed informally as farmers (52 percent) or in self employment (35 percent). The informal sector is less able to invest in business, gain access to credit, establish standards or participate in industry bodies. Ghana ranks 137th in the Doing Business survey for ease of starting a business.

32 See Annex 1 for a more detailed presentation of the model.
stabilization fund) would go to finance additional public consumption, the remainder financing investments (public and private, through the equalization of marginal returns); a second scenario where one-half of total oil revenue would go to finance additional public consumption, the remainder financing investments. Comparing the baseline scenario (where real disposable per capita incomes would grow by 3.4 percent per year) with the first alternative scenario suggests that, after the initial demand boom (which would peak in 2015 and get exhausted by 2020), Ghana’s long-term growth trajectory would actually shift down in comparison to a non-oil scenario. The long term per capita income growth rate would decelerate to 2.4 percent and, by 2029 real per capita incomes would be 14 percent lower. Investing a greater share (half) of the oil revenue could narrow this gap – as real exchange rate appreciation would be partially offset by greater productivity gains – but not close it. Indeed, irreversible private investment decisions (and related specialization choices) made in the earlier years of extraction could prove to be sub-optimal when the oil gets exhausted a few years after. By that time, lost external markets would become extremely difficult to regain. Furthermore, Ghana’s ability to effectively invest most of its oil revenue – in the first years of extraction in particular given the amounts expected – is also questionable in the face of the institutional and public financial management challenges evoked above.

1.33 **Agriculture could be particularly exposed to Dutch disease consequences during the boom period.** As one of the major tradable sector, Ghanaian agriculture would be particularly exposed to the risk of losing external competitiveness through real exchange rate appreciation. Given the large mobility of the labor force (between agricultural and informal labor markets), a greater demand for labor in cities could exert upward pressure on agricultural wages and reduce external competitiveness of both import competing and export oriented agricultural sectors. Non-tradable agricultural goods could also suffer, if close substitutes to tradable goods. One reason often advanced to explain the limited impact of recent food price spikes on food consumption was the ability of Ghanaian households to replace imported food with domestic staples (e.g. rice with cassava) in their consumption baskets. The symmetric effect could thus also happen, if the price of imported food was to decline with respect to that of domestically produced food. On the other hand, a RER appreciation could make imported inputs less costly, and oil revenue could be invested in agriculture to raise its productivity. The Nigerian precedent (but also that of Ecuador, Mexico, Algeria, Iran), where the oil boom of the 1970s severely affected agriculture, is a case in point. And experience suggests that once market share is lost it can be extremely hard 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 the case in export markets, when supply chains are often complex and difficult to establish. Ghana is still trying to recover market share in the European pineapple market having lost ground with the slow conversion to new varieties demanded by European supermarkets.

1.34 **An oil boom could exacerbate rural-urban spatial disparities.** We use the same simulations to illustrate this point, comparing a non-oil scenario to two alternative scenarios,

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33 In net present value terms, given the initial boom, the difference would nonetheless become marginal. Using a social discount rate of 7.5 percent would basically equate the discounted incomes in the two scenarios.

34 Nigeria experienced an oil boom in the 1970s that severely affected its agriculture. The real value of the Naira more than doubled during the decade, leading to a sharp decline in the price of tradable agricultural commodities. Per capita agricultural production fell by 40 percent from 1970 to 1982 and Nigeria rapidly became a large food importer. Public investments financed by oil revenues and intended to boost productivity were largely wasted in expensive and ultimately unproductive schemes, such as large scale irrigation.
where oil revenue is more or less consumed by the Government. The comparison is here made for the year 2015, at the peak of extraction. Results indicate first that the real exchange rate would significantly appreciate (by 11 to 12 percent), whatever the use of oil revenue (consumption or investment), suggesting similar tradable/non tradable contents of public consumption and investment expenditures patterns. But investment matters otherwise, as it would increase productivity overall, and thus contain export losses at the economy-wide level. Nonetheless, agriculture would not necessarily benefit from increased investment, as the latter would rather go to other sectors - such as non-tradable sectors, and mining, if attracted by high private rates of return. In the event, agricultural exports would decline by 5-6 percent (mostly cocoa), while agricultural output would decline by 1 percent with respect to a baseline non-oil scenario. These figures sharply contrast with the overall positive effect of oil revenue on per capita incomes in the short run, and emphasize the risk of a widening urban-rural divide during the boom period.

### Table 1.3: Spending Oil Revenue Would Hurt Agricultural Output and Exports
Deviations with Respect to a Non-oil Baseline Scenario in 2015

<table>
<thead>
<tr>
<th></th>
<th>Alternative 1: oil revenue mostly consumed</th>
<th>Alternative 2: oil revenue half invested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real exchange rate</td>
<td>13.0%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Real disposable per capita income</td>
<td>12.5%</td>
<td>10.1%</td>
</tr>
<tr>
<td>Exports volumes</td>
<td>-19.1%</td>
<td>-14.0%</td>
</tr>
<tr>
<td>Agricultural exports volumes</td>
<td>-6.5%</td>
<td>-5.5%</td>
</tr>
<tr>
<td>Agricultural output volumes</td>
<td>-1.0%</td>
<td>-1.2%</td>
</tr>
</tbody>
</table>

*Source: World Bank staff calculations*

### Table 1.4: An Oil Boom Could Induce Significant Redistribution Effects

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>10% RER</th>
<th>25% RER appreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poverty Headcount</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National</td>
<td>28.6%</td>
<td>28.7%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Urban</td>
<td>10.7%</td>
<td>10.7%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Rural</td>
<td>39.3%</td>
<td>39.7%</td>
<td>39.8%</td>
</tr>
<tr>
<td>Western</td>
<td>18.6%</td>
<td>19.3%</td>
<td>21.0%</td>
</tr>
<tr>
<td>Central</td>
<td>19.9%</td>
<td>20.1%</td>
<td>18.4%</td>
</tr>
<tr>
<td>Greater Accra</td>
<td>11.8%</td>
<td>11.8%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Volta</td>
<td>31.7%</td>
<td>32.5%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Eastern</td>
<td>14.7%</td>
<td>14.8%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Ashanti</td>
<td>20.5%</td>
<td>21.0%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Brong Ahafo</td>
<td>29.7%</td>
<td>29.3%</td>
<td>29.4%</td>
</tr>
<tr>
<td>Northern</td>
<td>52.2%</td>
<td>52.3%</td>
<td>52.5%</td>
</tr>
<tr>
<td>Upper East</td>
<td>70.5%</td>
<td>70.3%</td>
<td>70.3%</td>
</tr>
<tr>
<td>Upper West</td>
<td>87.9%</td>
<td>87.8%</td>
<td>88.0%</td>
</tr>
</tbody>
</table>

| **Income change**           |         |         |                      |
| Public sector employees     | 0.6%    | 1.6%    |                      |
| Private formal employees    | -0.1%   | -0.2%   |                      |
| Private informal employees  | 0.4%    | 1.1%    |                      |
| Export Farmers              | -3.0%   | -7.4%   |                      |
| Food Crop Farmers           | 0.3%    | 0.7%    |                      |
| Non-Farm Self-Employed      | 0.1%    | 0.3%    |                      |
| Non-working                 | 0.5%    | 1.2%    |                      |

*Source: World Bank staff calculations*

1.35 Micro analysis confirms that export farmers would be the main direct losers from a real exchange rate appreciation. A micro-accounting analysis of the most recent household survey (GLSS5, for the years 2005/6) allows assessing the extent to which Ghanaian households’ welfare would be impacted by a change in the price of tradable over non-tradable goods, on both
their revenue and consumption sides. Given households’ initial position vis-à-vis the national poverty line (broadly at $PPP1.25 a day), the same analysis also allows to measure the impact of a RER appreciation on poverty. The analysis, however, ignores the primary income/spending effect from oil revenue that is the cause of RER appreciation, and which could compensate groups for lost welfare if redistributed. Results suggest small aggregate changes (in national welfare or poverty), but a fair amount of distributional change for an assumed RER appreciation of 10 percent (and more with 25 percent). The poorest segments and regions of the Ghanaian society—food crop farmers in the Northern, Upper East, and Upper West regions—are likely to benefit from an increase in the relative price of non-tradable goods, although often times not enough to raise their incomes above the poverty line. On the other hand, export farmers (from the Western region in particular) are likely to experience substantial welfare losses, with a number of these households slipping below the poverty threshold.

1.36 Threats of Dutch disease contrast with agriculture’s large potential for growth and poverty reduction. Macro and micro analyses discussed in the preceding paragraphs suggest that markets immediate reaction to the injection of oil revenue in Ghana’s economy would tend to affect negatively commercial agriculture, in spite of great agro-ecological potential. Subsistence farming would not be affected, as isolated from markets, but the deterioration of commercial agriculture would weaken rural households’ ability to grow out of poverty. In 2005/6, more than 85 percent of Ghana’s poor were living in rural areas, and even if an oil boom could induce accelerated rural-urban migration (as well as the development of off-farm activities), agricultural development will continue to remain central to the growth and poverty reduction agenda (World Bank, 2008) in Ghana for many years. There are indeed many reasons to believe that agricultural productivity growth could be a key engine of industrialization and economic take off in Ghana. First because agricultural goods are important inputs for the industry, directly for some sectors (e.g., food processing, textile), and indirectly through their impact on real wages (as households’ consumption basket is skewed towards food and textile items). Second because agricultural productivity growth creates surpluses, breaking the vicious circle of subsistence farming, where nearly everything produced is consumed within the same harvest cycle. In effect, enhanced productivity releases workers or time for other activities, increases savings and investments, reduces farmers’ vulnerability, and thus raises their ability to take productive risks. It also creates demand for industrial products, which is crucial in the presence of fixed costs in industry. And third because even when potential productivity growth is weak, public support to agricultural development might still be considered as an efficient transfer mechanism to target the poor (Bourguignon, 2006). These elements could justify greater public

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35 The analysis considers households’ individual patterns of consumption and sources of income, attaching to each of them a degree of tradability. A net consumer (respectively producer) of tradable goods will record welfare gains (resp. losses). See Medvedev (2009) for detailed discussion.

36 Northern Ghana, where most of the rural poor reside, is vastly unexploited for a number of reasons—diseases, poor soils, climatic risk, and very low population and road density. However, the potential of this region is huge, as demonstrated by the experience of the ‘Cerrado’ in North Brazil and Northeast Thailand, which share similar ecologies. Both regions were turned into highly competitive poles of commercial agriculture for cassava, soybeans, sugar, rice, maize, cotton and beef. Factors that contributed to this success included: (i) improved agricultural technology, both varieties and soil management; (ii) publicly financed infrastructure, rural credit, and business development services; (iii) a dynamic private sector and a conducive investment climate; and (iv) a policy environment that sets prices in line with world prices.
intervention in agriculture (in the North in particular)\textsuperscript{37} to mobilize this potential and reduce the transitional costs which would result from an oil-driven boom and bust cycle. Such an intervention could in part be financed with oil revenue, and take various forms, from the provision of agricultural public goods (research, extension, infrastructure, investment climate) to targeted interventions to raise people’s economic mobility.\textsuperscript{38}

E. TRADE-OFFS AND A WAY FORWARD

1.37 With oil revenue flowing, Ghana will be confronted with a number of choices. Ghana needs first to decide what part of oil revenue it wants to spend now, versus later. This intertemporal choice should be dictated by absorptive capacities considerations (the social return of oil revenue spending). Inter-generational considerations, however, could also be considered, as choices made today (based on a given discount rate, or degree of preference for the present), would have irreversible consequences on future generations (the first of which the fact that next generations will not be able themselves to choose how to use oil, as reserves would have been depleted). The second choice relates to its distribution. 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 (Dutch disease). But other groups might deserve greater support given their disfavored initial situation. For instance, if households from the Western region are likely to lose more from an untargeted spending of oil revenue, they would still remain far less poor than those from the Northern regions (see Table 1.4).

1.38 Nonetheless, whatever choices made, a number of actions should be rapidly undertaken to raise the potential developmental impact of oil. In turn, raising the social rate of return of oil revenue spending will attenuate some of the trade-offs discussed above. Ghana would strongly benefit from elevating its institutional and macroeconomic absorptive capacities before channeling oil revenue into the economy. Raising such capacity will take time, while oil revenue will grow extremely rapidly in the first years of extraction. The risk of misuse is thus particularly high in these years. In the face of it, Ghana could consider the following actions, most of which would be justified even in the absence of oil:

- **Increase transparency on oil revenue.** Minimizing risks of political capture call for greater social accountability, which cannot expand without economic transparency. The latter could be improved as Ghana adopts and implements a Freedom of Information Act; and stipulates/enforces accountability mechanisms regarding: (i) the publication of reports on revenue and their use, and (ii) the disclosure of bidders’ identity and bidding documents. The EITI process could be used in this regard. In turn, increased transparency should open the door to design a home-grown institutional response to the risk of political capture. Various experiences from the rest of the World can inspire Ghana, but none of them will become effective if not fully and broadly owned locally.

- **Restore fiscal sustainability.** High fiscal deficits threaten macro-economic stability, and using oil revenue to finance them would only postpone the adjustment while missing an important development opportunity. The needed adjustment will call in particular for a

\textsuperscript{37} The Government of Ghana is envisaging in this regard to harness resources of the Savannah areas with value-added processing, improved technology coupled with strategic investments in people and service (Government of Ghana, 2009).

\textsuperscript{38} The relative merits of these approaches will be discussed in details in a forthcoming World Bank report on poverty and spatial inequalities.
review of the public payroll and energy subsidies in light of (i) related service delivery and poverty alleviation and (ii) fiscal affordability. Public financial management reforms discussed above would consolidate the fiscal adjustment effort.

- **Remove bottlenecks in non-tradable sectors.** Dutch disease effects would be mitigated by removing constraint to competition and domestic supply response in non-tradable sectors, including: high barriers to entry into formal sectors (starting a business, labor regulation and minimum wages, access to finance, urban land tenure), and poor infrastructure (water, electricity) for urban SMEs. The latter would 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 would consist in restoring the pass through of international prices into gasoline and utilities tariff, along with establishing targeted mechanisms to protect the poor. A second mechanism to shield the budget from oil price volatility would consist in establishing a fund (between a stabilization fund and a permanent income fund, see above), from which predictable transfers would be made to the budget.

- **Increase the provision of agricultural public goods.** The reform would consist in raising agricultural spending up to 10 percent of 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.

1.39 These policy actions would significantly magnify the potential developmental impact of oil. Quantitative simulations suggest that the early implementation of the reforms in energy, civil service, land regulation, PFM reform and agriculture evoked above could significantly improve the developmental impact of oil revenue. The average real per capita disposable income over the period 2010-29 could be 9-13 percent higher with these reforms than without, that is, higher than in the non-oil scenario discussed before (see Figure 1.2). Simulations also suggest that the effect of these reforms, which aim at raising public investment effectiveness, would take time to materialize. Indeed, the discounted income (which gives preference to the first years of the period) would be less enhanced than the undiscounted one. In particular, civil service, PFM and private sector reforms would take time to generate important gains. By the same token, delayed implementation of these reforms would entail high opportunity costs as a large share of oil revenue would have been sub-optimally spent.

1.40 Although key to raise the quality of oil revenue spending, the reforms above would not address all issues. The first one is the intergenerational equity issue, as next generations would be deprived of the opportunity to decide how to manage oil if its revenue is fully spent during the extraction period. The second one is the distribution issue, as these reforms would only marginally contain a widening rural/urban gap in the boom period. The third one relates to downside risks associated to these reforms: implementation delays, political feasibility, a large exposure to changing price and reserve assumptions during the first years of extraction could all

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39 We simulate the following reforms: energy reform: electricity tariffs match production costs; civil service reform: formal sector wages are determined by their marginal productivity; private sector reform: the urban land supply is made more responsive to its remuneration; and PFM reform: a larger share of oil revenue spent is allocated to investment (75 against 50 percent); agricultural reform: improved rural land productivity.

40 A 7.5 percent social discount rate is used in the computations.
reduce the impact or effectiveness of these reforms. In contrast, a more gradual approach, supported in its extreme form by a permanent income fund, would neutralize the equity issue, attenuate the amplitude of boom and bust cycles, and improve budget predictability. In the end, the decision on the pace at which oil revenue should be spent should ideally take into consideration (i) the time it would take to improve the quality of oil revenue spending and (ii) the degree of social preference for the present.

**Figure 1.3: Key Reforms Would Greatly Magnify the Developmental Impact of Oil Revenue Change in Real Per Capita Disposable Income During 2011-29, with Respect to a Non-Reform Scenario**

*Source: World Bank staff calculations*
2. REVENUE PROJECTIONS

A. INTRODUCTION

2.1 The exploitation of Ghana’s newfound petroleum resources will undoubtedly have an important impact on the economy of Ghana. This chapter assesses the likely scale, nature and timing of that impact based on parameters known to the World Bank at the time of writing and assumptions made about key economic factors such as the oil price, production costs and product markets.

2.2 The chapter provides projections of: (i) the value of production and (ii) direct government revenues. Broader economy impacts, such as job creation, imports, import substitution, economic linkages to suppliers and the downstream processing of gas are not measured but discussed qualitatively.

2.3 The ultimate scale of Ghana’s petroleum resources is not known but more information is becoming available as exploration progresses. In order of certainty, most to least certain, the current knowledge of Ghana’s petroleum resources can be summarized thus:

- The Jubilee oil field has proven recoverable oil reserves of 490 million barrels (mmbbl), which is already of sufficient size and quality to justify commercial exploitation. However, additional drilling and tests are being conducted to prove a higher reserve base estimated to be at least 1,200 mmbbl and possibly as much as 1,800 mmbbl. The oil consortium is therefore proceeding with development of the Jubilee field in phases, with Phase I based on the “core” area of the field where reserves have already been proven. Phase I will produce 120,000 barrels of oil per day (bpd) at peak with field life of the order of 15 to 20 years. Gas would be produced in association with oil at a rate of 120 million standard ft$^3$ per day (mmscfd) but would initially be re-injected pending availability of a gas pipeline and market.

- A further one or more phases of the Jubilee field development are under consideration, dependent on the level of additional reserves proven up during a campaign of drilling in 2009. To date Phase II has been described as possibly expanding production to 250,000 bpd of oil at peak with a field life of the order of 25 to 30 years, commencing some two to three years after completion of Phase I. Gas output would reach 250 mmscfd and by then a gas pipeline and market is more likely to be available.

- Less certain is the possibility that additional oil fields will be discovered by the same consortium, some of which may be sufficiently close to Jubilee to allow the sharing of

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41 Major levies on petroleum operations based on negotiated petroleum contracts (see Box 2). This does not include dividend withholding, taxes on inputs, employee taxes and a variety of minor taxes.


43 The oil consortium comprises Tullow Oil plc, Kosmos Energy, Anadarko Petroleum, Sabre Oil and Gas and the EO Group.

44 The “core” area of the field holds only a portion of the proven reserves, which according to data from GNPC is 269 mmbbl and this serves as the basis on which project design and commercial assessment has proceeded, even though the field is considerably bigger than this. The IFC has itself, in relation to agreeing its loans to Kosmos and Tullow, relied upon an independently certified reserves assessment of just 221 mmbbl in the “core” area.

45 A small amount of gas will be used to generate power used by the oilfield facilities. The consortium plans to commence commercial negotiations for the supply of gas and access to pipeline capacity during 2009.
facilities. Exploration drilling in 2009-2010 will test potential additional resources based on prospects, some of which may contain up to 500 mmbbl. Other companies hold exploration rights over adjacent areas displaying the same or similar geology. Over the next few years several wells will be drilled to test whether similar sized resources extend out to these areas. The first such well was completed by Amerada Hess in December 2008 south of Jubilee but did not discover oil.

- Finally, the development of a gas pipeline and markets based on Jubilee would increase the likelihood of the existing Tano gas fields, which are located in shallow water nearer the coast, being feasible to exploit using shared infrastructure.

2.4 **The level and quality of data available to the World Bank on Phase I are judged as sufficient to allow a Base Case projection to be made** together with sensitivities to higher and lower oil price outlooks, a higher capital cost and shorter duration of peak production. The projections are based on the January 2009 World Bank long-term oil price forecast of $75 per barrel. Sensitivity has been tested at $30, $50 and at $100 per barrel.

2.5 A qualitative but not quantitative assessment of the impact of Phase II and other larger but less certain petroleum resource scenarios is also made.

**B. JUBILEE PHASE I BASE CASE**

2.6 For purposes of this analysis the base case is defined as a single offshore field with 500 million bbl of recoverable oil reserves; output capacity of 120,000 bpd of oil and 120 mmscfd of gas; output at peak capacity for 5 years followed by 14 years of declining output; first production in 2011; re-injection of all gas; capital cost of $4 billion (including purchase of FPSO).

**Key Results (in real US dollars)**

- Total field life value of petroleum of $37.5 billion, averaging $2 billion annually and peaking at $3.3 billion from 2012 to 2015.
- Total field life government revenues of $19.4 billion, averaging just over $1 billion annually and peaking at $1.8 billion in 2016;
- Government share of total value over field life of 52 percent; government share of net cash flow of 69 percent (undiscounted) over field life;

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46 In January 2009 the Mahogany-3 well discovered a discrete deeper reservoir of oil underneath the known Jubilee field. Additionally, a relatively small discovery called Odum was made in February 2008, which could possibly use the same production facilities as Jubilee.

47 A prospect is a geological feature detected by seismic and other surveying methods thought likely to contain petroleum but which has still to be tested by drilling. As such, present estimates of petroleum resources are highly speculative. Several prospects have been identified and will be drilled in the coming year, beginning in late January 2009 with the Tweneboa prospect.

48 Until now, the viability of exploiting the Tano gas fields had been affected by their modest size and limited market opportunity.

49 A Floating Production Storage and Offloading vessel (FPSO) will serve as the central surface facility receiving oil from sub-surface wells and processing it for storage and offloading onto oil tankers and any pipeline connection. An FPSO may be purchased or leased. The oil consortium plans to lease the FPSO but can exercise an option to purchase it after two years, an option that is assumed will be taken at a cost of some $725 million.

50 January 2009 prices.
- An oil price of $50 results in total government revenues of $8.6 billion (-56 percent) and government share of net cash flow of 55 percent; a price of $100 results in total government revenues of $29.3 billion (+51 percent) and government share of net cash flow of 72 percent;

- At an oil price of $30 the project is marginally economic (16 percent IRR pre-tax) and generates just $3 billion of government revenue;

- A 25 percent capital cost overrun on its own reduces total government revenues by 14 percent and, when combined with a $50 oil price, reduces total government revenues by over 60 percent;

- A two-year period of peak production, as against five years, on its own reduces total government revenues by some 60 percent and, when combined with a $50 oil price, reduces total government revenues by over 80 percent.

### Table 2.1: Jubilee Phase I Base Case - $75/bbl

<table>
<thead>
<tr>
<th>Year</th>
<th>Output ('000 bpd)</th>
<th>Gross Revenue ($ million)</th>
<th>Capital &amp; Operating Costs ($ million)</th>
<th>Government Revenue ($ million)</th>
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<tr>
<td>2008</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>0</td>
<td>1094.5</td>
<td>0</td>
</tr>
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<td>1108.9</td>
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<td>19389.8</td>
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</tr>
</tbody>
</table>

**Source:** World Bank staff calculations

2.7 Other sensitivities which have not been tested in this analysis would include alternative assumptions regarding the start date of production, the rate of output decline from peak levels, operating cost levels, sale of gas at some stage and types of financing.\(^{52}\)

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\(^{51}\) The Government share is the sum of all fiscal receipts divided by the cash flow of the project after meeting all capital and operating costs.

\(^{52}\) The project is assumed to be 100 percent equity financed. As a result, the project would not bear the cost of servicing loans. Debt service costs increase the cost base of a project and reduce government fiscal receipts.
2.8 **Other impacts of Jubilee Phase I on the economy are expected to include the following:**

*Direct job creation*: The oil consortium estimates a total workforce requirement of a little over 200 during routine operations. The local staffing content would be of the order of 40 to 60 per cent in the initial years. During construction higher numbers can be expected, comprising temporary contractors and their construction crews. The sources of employment would include management and administrative offices in Accra and personnel at supply bases, aviation and port facilities and on rigs, supply vessels and the FPSO.

*Local goods and services*: The local content of supplies to the oilfield will be low in the construction phase in terms of equipment and services needed for installation because of the high level of specialization; in the production phase there is likely to be improved scope for consumables to be procured locally and Ghana-based enterprises to supply a range of non-specialist services.

*Indirect taxes*: Petroleum operations enjoy exemption of all duties and other charges on imports of items which are not subject to rules requiring preference to be given to local sourcing. In practice, this will mean that a very high proportion of imports during construction and production operations will be brought into Ghana tax-free.

*Downstream processing*: Crude oil from Jubilee will be of high quality and readily find buyers in the international oil market ready to pay international prices; accordingly there is expected to be no price or marketing advantage to the oil consortium by selling the crude oil to a domestic refinery.\(^53\)

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**Box 2.1: Some Parameters Affecting Pre-tax Petroleum Economics**

Recent dramatic **oil price** movements highlight the difficulty of reliably forecasting oil prices. However, large and high quality oil deposits like Jubilee have a cost structure that should be able to withstand oil price fluctuations. Moreover, the quality of Jubilee crude oil (light and sweet) will ensure that it commands a price close to international marker crude oils like Brent.

**Field production rates** display a tendency to reach and then maintain peak output for only a few years before decline sets in. This is largely a function of the pressure drive in the oil reservoir. Output can be enhanced through the use of re-injection wells to artificially sustain pressure drive. In the Jubilee field, gas is dissolved in oil and is released at lower pressures once oil is brought to the surface. The rate of gas production is a direct function of oil production. Gas may be re-injected to enhance oil production rates or for sub-surface storage.

**Field costs** are a function of numerous engineering considerations. Water depths, drilling depths, reservoir size, shape and thickness, pressure drive, quality of oil-bearing sands, properties of the oil, to name a few, impact on costs. Fixed costs tend to be high as a proportion of total costs, so that significant economies of scale arise. However, some capital items are “lumpy.” For example, the sizing of a Floating Production, Storage and Offloading Vessel (through which all petroleum passes) must be optimized, since this is the single biggest item to be purchased (or leased).

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\(^53\) The Government may choose to exercise its option to take royalty, initial interest and AOE (but not income tax) in crude oil rather than cash. In such case, oil could be supplied to a domestic refinery. However, the value of so doing would depend, in part, on the compatibility of Jubilee crude oil and refinery feedstock requirements.
Box 2.2: The Fiscal Regime for the Jubilee Field

The fiscal regime under which the Jubilee field will be operated is defined by petroleum laws and detailed fiscal terms of contracts for each of the two petroleum licenses which Jubilee straddles. In most respects the fiscal terms of the two contracts are the same and comprise the following elements from which the Government obtains revenue:

- **Royalty**: 5 percent of gross oil revenue; 3 percent of gross gas revenue
- **Initial Interest**: 10 percent of petroleum revenue net of royalty and operating expenses
- **Additional Oil Entitlement (AOE)**: a share of petroleum revenue net of royalty and initial interest that is linked to the project rate of return (ROR) on a sliding scale; the terms of each contract are understood to differ so, for this analysis, a four-point sliding scale has been assumed as follows:
  - @ ROR >18% AOE = 10%; @ ROR >23% AOE = 15%; @ ROR >28% AOE = 20%; @ ROR >33% AOE = 25% (World Bank assumptions)
- **Income Tax**: 35 percent of taxable income after deduction of expenses and depreciation of capital expenditures over five years

An additional option exists for the Government to purchase a share of the Jubilee project on terms specified in the petroleum contract. This option has not been included in the analysis. The new Government has announced that it will exercise this option under which it will acquire a 3.75 percent interest in the Jubilee field, through GNPC, for US$161 million.

The fiscal regime yields various revenue streams, some tied to turnover (royalty) and others tied to profitability (initial interest, AOE and income tax). AOE ensures that the tax take rises progressively as a function of profitability, with minimum Government take (pre-AOE) around 50 percent rising, once all ROR thresholds have been crossed, to over 70 percent.

The fiscal regime only applies to upstream oil and gas operations – all revenues and costs up to the point of disposal (oil tanker or inlet into oil or gas pipelines). There is scope for specific and different terms to be negotiated for gas. For this analysis, except for the lower gas royalty rate, all other terms are assumed to apply equally to oil and gas.

C. IMPACTS OF A LARGER RESOURCE BASE

2.9 Phase II of the Jubilee field development would be based on a higher proven reserve base than Phase I and could be launched some two to three years after completion of Phase I. The production rate could be double that of Phase I resulting in a peak level of gross revenues of the order of $7 billion over some five years from as early as 2015. No cost estimates have been provided by the oil consortium but economies of scale and sunk appraisal costs would imply higher pre-tax returns than for Phase I. Because of the progressive structure of the fiscal regime for any price level, the Government share of net cash flow would be higher under Phase II than Phase I.

2.10 By the time of Phase II the sale of gas (made possible with the likely availability of a pipeline), rather than its re-injection is much more likely. Accordingly, a value could be attributed to gas based on sale at the oilfield (into a pipeline under separate ownership).\(^\text{54}\) The

\(^{54}\) A value of gas at the wellhead could be derived based on the netback value of gas after considering the cost to transport and process gas downstream of the Jubilee field, as well as any gas handling facilities needed at the Jubilee field. The netback value of gas is highly uncertain and subject to a wide margin of error. There may also be additional value in the gas at the processing stage, where liquids would be stripped to generate, among other things, Liquid Petroleum Gas (LPG), which can be used as a cooking fuel or motor fuel.
incremental value of gas to the Jubilee field is likely to be relatively low in gross revenue terms, but it nonetheless can contribute directly to profitability and, hence, to government revenue.\textsuperscript{55}

2.11 \textbf{The sale of gas will have significant economic impact in addition to the incremental contribution to government revenues from the Jubilee field.} Without a defined gas development plan only general observations can be made about this impact. However, positive impacts are likely to include:

- Investment and jobs associated with the gas chain downstream from the oilfield, including a wet gas pipeline to shore, gas processing and storage facilities, dry gas trunk pipeline(s), gas distribution pipelines and facilities for handling and distribution of by-products of gas processing (e.g. LPG, propane, butane);\textsuperscript{56}

- Supply of gas feedstock for power-generation which would substitute for fuel oil at existing and planned dual fuel Combined Cycle Generating Turbines, thereby saving foreign exchange used to import fuel oil;

- Taxation of transportation, processing, distribution and sale of gas.

\textbf{Key conclusions are the following:}

- Phase I of the Jubilee oil field will proceed, with delay into 2011 increasingly likely;

- The economic performance of Jubilee, and hence Government revenues, is critically dependent on the oil price, with a Base Case revenue projection based on the World Bank’s current long-term price forecast of $19 billion ($75 oil price) and plausible alternative oil price scenarios yielding Government revenue in a range between $9 billion ($50 oil price) and $29 billion ($100 oil price) over field life;

- A number of other parameters are subject to uncertainty, in particular, how long peak production of 120,000 barrels per day can be sustained - if the smaller reserve base that has been used as a basis for evaluating Phase I by GNPC is used (implying a shorter period of peak production and reduced project life), Government revenue would only be $8 billion at $75 oil price and as little as $3.3 billion at $50 oil price;

- The Government’s share of net profits from Jubilee can be expected to respond strongly to changes in oil prices, because of the structure of the fiscal regime, in a range between approximately 50 percent and 70 percent.

- A larger scale operation is increasingly likely to be developed some years after completion of Phase I, and would yield more than double the expected economic benefits of Phase I (for any given oil price), however, it is too early to provide more detailed projections at this stage;

\textsuperscript{55} The incremental economics of gas sales in reality might depend on tradeoffs between re-injection and gas sale and associated capital and operating expenses. These cannot be assessed on the basis of the information available.

\textsuperscript{56} Plans to establish a gas processing plant with the capacity to handle 150 mmscfd of gas were announced by the Government in December 2008 to be sited on the coast in Western Province close to the Effasu barge-mounted power generating facilities. The barge presently has 125MW generating capacity, equivalent to 30 mmscfd of dry gas feed but expansion is planned. The Aboadze power plant at Takoradi has 530MW installed capacity, equivalent to 130 mmscfd of dry gas feed. The Volta River Authority has already contracted to take 123 mmscfd of gas supplied through the West African Gas Pipeline to meet feedstock requirements of Aboadze.
Government fiscal revenues are the principal mechanism through which economic benefits will accrue to Ghana since, until the use of gas becomes viable, the Jubilee operation is likely to generate limited economic linkages and input substitution opportunities; and

The supply of gas for processing and use downstream in Ghana would provide significantly greater opportunity for economic linkages and input substitution.
3. POLITICAL ECONOMY DIMENSIONS

A. INTRODUCTION

3.1 Africa’s development depends, in large part, on its ability to use its natural resources for sustainable and inclusive development. In principle, the fact that Africa is well endowed with rich natural resources seems like a positive thing since it should provide the opportunity for countries within the region to meet their considerable development needs. However, in practice, the literature is full of examples of misfortunes with countries rich in such resources performing poorly on the economic, social and political dimensions of development.57

3.2 Since the 1990s, there has been a growing body of literature that goes beyond the macroeconomic and Dutch Disease issues to look at why some countries with natural resources perform well, while others seem to miss the opportunity and perform worse than countries that are less well-endowed. This literature looks broadly at the relationship between social and political structures, institutions and policy choices. This chapter provides a brief review of this growing body of literature and look at the different attempts to classify types of countries and the political and institutional reasons that have led to policy decisions. It then looks at how Ghana ranks in terms of institutional quality and uses the typologies of political regime as well as Ghana’s performance in the mining sector to ascertain whether there is cause for concern as to whether Ghana has the right political incentives and sufficiently strong institutions to manage its new oil rents well. Finally, it looks at how different countries have developed a range of instruments to strengthen the institutional arrangements for effective management of oil and discusses how these might be tailored to the Ghanaian context.

B. THE ROLE OF POLITICS AND INSTITUTIONS IN DETERMINING THE IMPACT OF OIL ON A COUNTRY

3.3 The root of the institutional challenges for countries with concentrated natural resources is a “principal agent problem” (cited in Gelb and Turner, 2007). Oil resources are usually declared as belonging to the whole country but are managed on behalf of all citizens by their Government. However, lack of clarity about what “ownership” really means, along with weak institutions that neither constrain governments nor provide accountability has led to a whole host of problems. The literature cites collusion with large oil companies, rent seeking and corruption, increased political patronage, lower entrepreneurship and lower capacity for investment, increased authoritarianism and even civil conflict as common problems that many confront countries that have discovered oil.

3.4 There have been a number of attempts to establish the causality of the relationship between the political and institutional dimensions on the one hand, and the performance of the country on the other. While there is still much discussion on this issue, in general, the literature agrees on two things. First, political and institutional dimensions are the most important determinant of how a country with oil performs. As Eifert et al. (2002) note, “the variance of growth performance among resource rich countries is primarily due to how resource

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57 Of 48 countries for which oil comprised more than 30 percent of total exports between 1965-1995, nearly half scored in the bottom third of the UN Human Development Index. Closer to home, Nigeria is cited as an example of a country that earned US$340 billion but living standards worsened.
rents are distributed via the institutional arrangements” (2006).\footnote{This is based on a series of cross country regressions using the data set used by Sachs and Warner on Dutch Disease and controlling for education and social divisions.} Second, countries who do not recognize this importance and who have weak institutional contexts will find weaknesses exacerbated and oil is likely to result in a curse rather than a blessing (Eifert et al., 2002).

3.5 **There have been a number of attempts in the literature to classify the political and institutional reasons for policy failures and thus to establish some typologies.** Ross (1999) provides a good summary of three types of reasons for policy failure and offers the following typology: (i) cognitive reasons – resource rents are seen to induce a “get rich quickly” mentality, resulting in short-sighted policy decisions and excessive spending; (ii) societal reasons – countries often have existing interest groups with significant political leverage on the state who block growth enhancing policies; and (iii) statist reasons – states are freed from the need to levy domestic taxes and therefore become less accountable to citizens since they no longer need either their votes or their taxes and devote rents to guarding the status quo. Mehlum et al. (2006) take a different approach, focusing on institutional quality and construct an institutional quality index based on data from the political risk services.\footnote{For further discussion of the index see Knack and Keefer (1995).} The index runs from 1 to 0 with 1 suggesting that institutions are “producer friendly” and 0 being countries with institutions that are “grabber friendly.” The regressions show that, controlling for level of education and ethnic fractionalization, the resource curse only hits countries with a lower level of institutional quality. Finally, Eifert et al. (2002) expand on the societal and statist reasons offered by Ross (1999) above and provide a useful classification of political features of five types of regimes and the corresponding institutional implications (see Table 3.1). This provides us with the opportunity to confirm whether the concerns raised by Mehlum et al. (2006) work on institutional quality resonates with what we know about the political features of Ghana.

### C. APPLYING THE POLITICAL AND INSTITUTIONAL DETERMINANTS TO GHANA

3.6 **Ghana is a young democracy with four strengths** (World Bank, 2007): there is no dominant single party in Ghana, parties are quite well institutionalized, and traditional leaders provide some restraint on the capacity of the Executive to pursuing their own self-interest and extra-institutional interventions from the military, for example, seem to be rare particularly relative to other neighboring countries. These, and other quantifiable governance indicators, partially explain why Ghana does well on, for example, the Country Performance Indicator Assessment (CPIA). However, as numerous political economists point out, there is a slightly more complex governance picture beneath the surface that suggests that Ghana is more “grabber friendly” than “producer friendly.” World Bank (2007a), Booth et al. (2005), Nugent (1999) and others all show that Ghana does indeed exhibit the political characteristics of a “factional democracy” (Eifert et al., 2002) and perhaps even has some remnants of its recent past as an autocracy. World Bank (2007a) shows how the political incentives in Ghana produce a high level of clientelism and patronage politics with government responding to narrow interest groups. Ghana spends far more, on average, on targeted expenditures, such as the civil service wage bill and public investment, but is average or below average in terms of spending on the provision of public goods, such as the rule of law, quality of education or the lengths it goes to push back corruption. Within this context where some interest groups are particularly powerful, big
business interests seem to be particularly strong with their influence deriving from personal relationships and the funding of political campaigns (Booth, 2005).

3.7 **Ghana also exhibits large (and increasing) social disparities and social polarization is an increasing concern.** There is a marked rural-urban divide (Nugent, 1999), regional inequalities are increasing and the role of ethnic identity seems to be increasing with ethnic grievances rising (Afrobarometer, 2005). While the traditional authorities have, in the past played an important role in arbitrating and building social consensus, the modern state does not appear to have similar mechanisms and, when faced with conflict in Bawku, for example, it turns to the traditional authorities for help.

3.8 **One would expect a factional democracy with a recent heritage as an autocracy to also display low levels of civic counterweight.** This is true in Ghana. A number of studies show that information is the most important constraint to more accountability through vertical means, although World Bank (2007a) also suggests that the fact that Ghana has fewer graduates from secondary school also plays a role. A study (World Bank, 2007b) on the enabling environment for social accountability points to five types of constraints including few political incentives within the Executive to strengthen accountability mechanisms, centralized and confused intergovernmental arrangements that limit potential entry points, weak enforcement capacity of the state which leads citizens to put little value in participating since there is no ultimate recourse, a plethora of uncoordinated instruments that don’t add up to much impact at the national level and, finally, a weak and poorly organized civil society that has little influence on policy debates or their oversight. It is also worth noting that interest groups representing non-oil sectors such as agriculture in Ghana are particularly weak, particularly when compared to large business interests such as the Chamber of Commerce.

3.9 **Ghana does not yet have a Freedom of Information Act and access to information is weak.** The External Review of Public Financial Management (World Bank, 2006) notes that budget information is of poor quality, information on planned expenditures diverges from actuals and its presentation is not reader friendly to anyone other than budget experts. World Bank (2007a) also notes that, despite media liberalization, media regulation and self censorship remain significant. In addition, relatively few Ghanaians read the newspaper and radio talk shows are the most popular form of media, suggesting that there is little flow of information on policy issues.

3.10 **Formal checks and balances exist in Ghana but are generally thought to be quite weak.** The 1992 Constitution of the Republic of Ghana separates the three arms of government from each other and Parliament is expected to provide a check on the Executive. The Standing Orders of Parliament provide for the minority party in Parliament to appoint a chair of the Public Accounts Committee and this has been adhered to throughout the fourth republic (1993 to date). However, the role of Parliament as an independent institution to hold the Executive to account is weakened and contradicted by Article 78(1) which requires that the President appoint a majority of cabinet ministers from Parliament, making more than 50 percent of ministers responsible for implementing policy as well as providing the check and balance on this implementation. According to the African Peer Review Mechanism (2005), this potentially diminishes the independence of the legislature and its effectiveness in enforcing horizontal accountability. The Office of the Auditor General also exists in Ghana and prepares annual audit reports which are then presented to Parliament within the constitutional requirements (6 months after the end of the
financial year). Challenges however remain with the follow up of its recommendations on, for example, prosecution for abuse.

3.11 **There is some evidence that some elements of institutional quality have worsened since 2000,** although political incentives and institutional quality, of course, continue to evolve. Using the International Country Risk Guide, World Bank (2007a) shows that with the advent of a multi party system in 2000, Ghana moved from being a positive to a negative outlier in the measure of bureaucratic quality, suggesting that the political incentives changed and there was no longer a need to serve the public interest in the same way. However, the recent elections in Ghana are undoubtedly a sign of a maturing democracy and may also be a sign that the political incentives in the country are changing. Anecdotal evidence suggests that many people either voted for or accepted a change in part because it is good to keep political parties “on their toes.”

The outcome of the elections also translates into a much more evenly split Parliament, ending the huge majority of the ruling party and pointing to a potentially more meaningful role for Parliament as a true check and balance. The role of the new Parliament has, in the first month of the new Government, also become a subject of much public debate as many decisions approved by Parliament at over the last year have come under criticism, including the ex gratia package approved for former President Kufuor and the expenses approved for the Ghana at 50 celebrations. Finally, it should also be noted that the Ghanaian institutions that were tested during the election – namely the Electoral Commission, Judiciary Branch and the security agencies – withstood high levels of tension and came through a very tight and drawn out electoral process unscathed.

3.12 **Notwithstanding the evolving institutional and political landscape, the recent political economy literature confirms that Ghana exhibits the traditional political and institutional traits of a factional democracy and that this provides cause for concern on its ability to manage oil reserves effectively.** Based on countries with similar characteristics who have discovered oil, one would expect there to be a strong state role in production, strong interests around how expenditures are used with a preference for responding to big business, short horizons, marked social divisions, little consensus about what and how to use oil rents and low levels of transparency (Eifert et al. 2002). A recent review of political economy challenges in the mining sector (World Bank, 2009d) confirms that political incentives and institutional quality have indeed proved to be major constraints in better management of the minerals sector (forthcoming). The report points to an inadequate consensus around a clear legal and institutional framework leading to complex and conflicting legal regimes, poor implementation of policies and laws, disproportionate influence by big business interests, unclear and non-transparent transfer mechanisms of royalties, weak mechanisms of formal checks and balances, a powerful executive style of politics with the President appointing all the members of the Minerals Commission and potential conflicts of interest, with members of the Committee on Mines in Parliament also being members of the Boards of large mining companies, Executive interference in institutional processes of awarding contracts and cases of no competition and disclosure in the awarding of contracts. This has led to high levels of conflict in mining communities and a perception among many Ghanaians that the country’s mineral reserves have not resulted in a “good deal” for the country. Perhaps because of this, the mining sector has become one in which civil society is becoming more involved both in the monitoring of transfers from companies to the Government and how they are used as well as in advocacy around standards and abuses.
D. TAILORING INTERNATIONAL EXPERIENCE IN DESIGNING INSTRUMENTS FOR GOOD MANAGEMENT OF OIL RENTS TO GHANA

3.13 Given the political incentives and the weak institutional quality discussed above, what are the lessons from other countries as to how this might be addressed? Collier (2006) cautions against a “one size fits all” approach and points out developing countries should guard against adopting a Norway model since they are already resource scarce. With this qualifier in mind, however, the literature suggests that Ghana might consider a two-pronged approach, with a number of immediate, if short-term, measures aimed at minimizing governance risks and improving the level of consensus, transparency and accountability. However, these measures will ultimately not be sustainable if they are not accompanied by a second set of measures, starting with a new commitment to an ambitious and comprehensive public sector reform to deal with the institutional deficit in the medium-term. Without this second set of measures any attempt to broaden a social contract through consultations or increase the transparency and accountability during the management phase of revenues will ultimately fail as existing political incentives and broader institutional weaknesses will dominate. With this caveat, we discuss the possible immediate measures first that aim to broaden the consensus or the “social contract” around the use of a country’s resources, as well as increase the transparency and accountability with which the rents are managed.

3.14 It is clear that considerable effort should be invested in creating real consensus at the design stage around what the oil rents will be used for and how they will be managed, as well as creating a constituency that has a direct interest in their good management. This has been done in countries like São Tomé who designed inclusive processes which have created some consensus on the what and how questions. Since successful models seem to have “influential constituencies with an interest in responsible resource management and the means to hold government accountable” (Moss and Young, 2009), particular interest should be paid, at the outset, to including interest groups from non-oil sectors that are likely to be affected by a negative management of the resources, as well as those that stand to benefit directly from the new rents. In Indonesia, this required strengthening civil society groups, for example, the voice of agricultural producers, to express how new revenues will impact their sector vis-à-vis other better connected interest groups, such as those representing big business. Agricultural producers formed part of a broad coalition that supported the Indonesian regime and there was a broad agreement around equity concerns, particularly the need to stabilize rural economies, and a clear public priority to invest in local, rural communities. A large part of the funds were, thus, used to finance a community-driven development type operation in rural communities, and agriculture and labor-intensive industry more generally become the agent of restraint with a direct concern for public spending as well as the need to avoid appreciation of the real exchange rate. In Norway, policy makers responded to the demands of a broad-based coalition of non-oil exporters by implementing policies that focused on maintaining the competitiveness of the non-oil sectors during the 1970s and 1980s. In Alaska, such a constituency was artificially created through the Permanent Fund Dividend (Moss and Young, 2009). Nigeria provides an example of the perils of not listening to voices from non-oil sectors at the outset and proceeding without a social consensus. And while an inclusive design process will not in itself change a political culture based on narrow interests, it can help create consensus about what is to be financed and how.
3.15 In this regard, a commendable first attempt was initiated in 2008 in Ghana to involve shareholders in the design stage through a national dialogue and a series of regional consultations but more discussion of the details of fund management is needed, particularly with stakeholders who stand to benefit directly from the new rents or be negatively affected by their mismanagement and could, therefore, become a constituency for good governance of them. To date, there has been little space for more in-depth discussions with stakeholders on the details of what the rents will be used for and how they will be managed. In this discussion, it might be advisable to ensure that non-oil sector interests, particularly those of the agricultural sector, are heard and that these are not overshadowed by those of big oil companies. Other stakeholders that stand to lose from poor mismanagement of the resources and who are thus obvious advocates of a transparent and accountable management of the rents include private sector actors in non-oil sectors that could lose competitiveness through currency depreciation, as well as local communities who, at present, are faced with the possibility of increased devolution of power and resource management to the local level. Until the Government presents its revenue management plans it is not clear whether there are other constituents that stand to benefit from holding Government accountable for using the money for the purposes that it was intended. This is an important debate and will have to be carefully managed to balance the need for a social consensus with regional and ethnic considerations which are a potentially divisive force (and which have worsened as a result of oil revenues in neighboring Nigeria). There may also be the need to consider compensating (or providing some insurance to) the populations whose livelihoods would be negatively affected by an environmental mishap, such as the fishermen who earn their living from the same water.

3.16 Second, the cases of São Tome and Chad, as well as Ghana’s experience in the mining sector, all suggest that it is equally important to have, as a product of the design stage, a clear institutional framework. This framework must provide clarity on specifics. Issues such as which government institution(s) will run the concession auctions, how will concessionaires be monitored, how will it actually report all the information that it needs for transparency, how will the head(s) of this institution be appointed, on what basis will they be removed, will there be an independent inspector general to review their work and what reporting arrangements, and to whom, will all require definition. Ongoing discussion related to the preparation of the Ghana Petroleum Regulatory Authority (GPRA) bill provides the opportunity to do so.

3.17 Third, the literature describes how additional accountability and transparency mechanisms can be built into institutional frameworks, through oil funds to improve weak institutional contexts. Oil funds have been seen to be an important mechanisms for controlling Dutch Disease and, while they do not provide magic bullet type solutions to weak institutional environments, recent evidence suggests that they can provide an opportunity for better management, if only temporarily. Humphrey’s and Sandby (2007) note that for such funds to be effective three things are necessary: (i) withdrawal decisions should be regulated by clear rules rather than general guidelines; (ii) key decisions should be made by broad bodies representing the interests of diverse political constituencies; and (iii) there should be high levels of transparency governing their operation. Any earmarking through transfers to oil funds, of course, should also be part of a transparent budget process. São Tomé, which adopted a revenue law in 2004, provides perhaps the clearest example to-date of how this has been done.
Box 3.1: São Tomé’s Oil Fund

The framework makes provisions for a number of additional windows of opportunity to increase transparency and accountability by placing the responsibility on the company to disclose information in an accessible form to a public information office and, if they fail to do so, they risk losing their contract. It also mandates, and gives wide ranging power to, an inclusive oversight mechanism which includes a broad base of eleven stakeholders, only one of which is appointed by the President (ministers, auditor general, 3 civil society representatives etc). The National Assembly is also required to hold yearly public hearings on the performance of the fund.

3.18 Drawing on the experiences from other countries and the experience in the mining sector in Ghana, the new set of laws currently in Parliament for consideration may, therefore, consider the following: (i) create an independent regulatory body that does not depend on appointment by the President and on the Executive for funding; (ii) include a wide range of stakeholders in oversight mechanisms; (iii) be specific about conflicts of interest for members of any mechanism; (iv) have clear disclosure rules, with responsibilities and implementation arrangements defined; and (v) provide sufficient power to the mechanisms to investigate, probe and rule at least until formal judicial institutions are capable of doing this.

3.19 **Fourth, increasing transparency – both through additional mechanisms and beyond** - is perhaps the most powerful set of actions that a government can take to ensuring good management of oil revenues. Beyond a general commitment to the principle of transparency, it is important to ensure that commitments are specific enough to be monitored. Clarifying precisely how a specific percentage of the rents will be used to fund specific actions in specific sectors, with companies and government reporting both royalties received, and when, government revenues broken down by other sources and regularly published, the number and identity of bidders for concessions disclosed, publication of bidding documents, and auctions conducted are all lessons from a range of sites including Texas, Alaska, Peru and Brazil. For future contracts, Ghana may also want to consider international competitive bidding to, as Collier (2006) notes, address the power asymmetry that exists between large oil companies and developing countries. As Ghana reviews the final draft of its freedom of information bill which is presently with Justice Crabbe, these issues will be important to consider and/or incorporate.60

3.20 **Fifth, in countries where democratic institutions are maturing and there is limited experience in civic counterweights as is the case with Ghana, additional capacity building investments are often needed both for the executive, parliament and civil society.** With respect to the executive, the case of Chile and Indonesia point to the possibility of empowering a group of technocrats within the civil service who can work in close coordination with politicians to oversee the management of the rents and even bolster their credibility. For civil society and the media, it may be possible to use the experiences of some CSOs that are working around budget literacy, civic education, collective bargaining and accountability in applying compensation standards in the mining sector, for example, to scale up knowledge and ultimately social accountability instruments, particularly outside Accra. However, for civil society stakeholders to do this effectively, Ghana will need to ensure access to information with the passage of a freedom of information act which meets international standards.61

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60 Justice Crabbe has been assigned from the Law Reform Commission, in charge of drafting and reviewing new legislation, to prepare the Freedom of Information act.

61 A draft act exists which defines what information is accessible to the public, what information is exempt and the process by which it can be solicited. It is presently being reviewed by Justice Crabbe. A coalition of CSOs has
training for parliamentarians in technical issues relating to the petroleum sector, as well as budget literacy, may also be required given the fact that a large percentage of the new parliamentarians are first time members of parliament and that that the political incentives suggest that Parliament will become a stronger check and balance, under this Government.

3.21 **Sixth and most importantly is the need to address the political incentives and institutional deficit in the long-term in Ghana.** Experience has shown that the institutions of countries with low institutional quality and perverse political incentives are normally further weakened and distorted once oil revenues begin to come on line and thus, in addition to the short-term measures described above, the discovery of oil in Ghana clearly requires new commitment and support for broader public sector reform. The time might now be right to do this for at least four reasons. First, the new Government’s manifesto describes its role as one of an “activist state” and there are indication that a single pay spine for civil servants will be implemented in a phased way focusing on capacity, skills and greater clarity around roles, responsibilities and institutional processes. Second, the delicate macro situation that the new Government faces demands that inefficiencies, duplications and waste be identified and addressed. The new Government has already held a series of retreats to attempt to do this within the context of the budget for the remaining months of 2009. In addition, the Government, as committed to in its manifesto, has made an attempt to consolidate ministries. Third, development partners have been mobilized around the issue of capacity development since the publication of the draft Aid Policy Paper in September 2008. The Aid Policy Paper acknowledges that public sector capacity is low and calls for a more comprehensive approach to capacity development. The World Bank and DFID have currently been charged with facilitating thinking on how development partners might better support the Government in developing its public sector capacity and a number of tools and products are under ` on net payments to government and other public authorities (Revenue Watch). Ghana is already an EITI country and may want to volunteer to abide by these standards, establish a code of ethics for the sector, draw on best practice for corporate and social responsibility programs and start its new phase as an oil producing country by disclosing the non-commercially sensitive parts of the increasing number of contracts with oil companies.

provided extensive comments on this draft and if a large part of them were to be incorporated and then passed, Ghana would have a conducive environment for increasing accountability.
<table>
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<tr>
<th>Political Features</th>
<th>Institutional Implications</th>
<th>Economic Implications</th>
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<tbody>
<tr>
<td><strong>Mature Democracy:</strong></td>
<td></td>
<td></td>
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<tr>
<td>• Stable party system</td>
<td>• Long horizon</td>
<td>• Savings likely</td>
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<tr>
<td>• Range of social consensus</td>
<td>• Policy stability, transparency</td>
<td>• Expenditure smoothing, stabilization</td>
</tr>
<tr>
<td>• Strong, competent, insulated bureaucracy</td>
<td>• High competitiveness, low transactions costs</td>
<td>• Rent transferred to public through government-provided social services and insurance or direct transfers</td>
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<td>• Competent, professional judicial system</td>
<td>• Strong private/traded sector, pro-stabilization interests vis-à-vis pro-spending interests</td>
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<td>• Highly educated electorate</td>
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<td><strong>Factional Democracy:</strong></td>
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<tr>
<td>• Government and parties often unstable relative to interest groups</td>
<td>• Short horizon</td>
<td>• Savings very difficult</td>
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<tr>
<td>• Political support gained through clientelistic ties and provision of patronage</td>
<td>• Policy instability, non transparency, high transaction costs</td>
<td>• Procyclical expenditure; instability</td>
</tr>
<tr>
<td>• Wide social disparities, lack of consensus</td>
<td>• Strong state role in production</td>
<td>• Rents transferred to different interests and to public through subsidies, policy distortions, public employment</td>
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<tr>
<td>• Politicized bureaucracy and judicial system</td>
<td>• Strong interests attached directly to state expenditures; politically weak private non-oil sector and pro-stabilization interests</td>
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<tr>
<td><strong>Paternalistic Autocracy:</strong></td>
<td></td>
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<tr>
<td>• Stable government; legitimacy originally from traditional role, maintained through rent distribution</td>
<td>• Long horizon</td>
<td>• Procyclical expenditure, mixed success with stabilization</td>
</tr>
<tr>
<td>• Strong cultural elements of consensus, clientelistic and nationalistic patterns</td>
<td>• Policy stability, non transparency</td>
<td>• Risk of unsustainable long-term spending trajectory leading to political crisis</td>
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<tr>
<td>• Bureaucracy provides both services and public employment</td>
<td>• Low competitiveness, high transactions cost</td>
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<td></td>
<td>• Strong state role in production</td>
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<td></td>
<td>• Strong interest attached directly to state expenditures; weak private sector</td>
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<tr>
<td><strong>Reformist Autocracy</strong></td>
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<tr>
<td>• Stable government, legitimized by development</td>
<td>• Long horizon</td>
<td>• Expenditure smoothing, stabilization</td>
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<tr>
<td>• Social range of consensus towards development</td>
<td>• Policy stability, non transparency</td>
<td>• State investment complementary to competitive private sector</td>
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<tr>
<td>• Constituency in non-oil traded sectors</td>
<td>• Drive for competitiveness low transactions costs</td>
<td>• Active exchange rate management to limit Dutch disease</td>
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<tr>
<td>• Insulated technocracy</td>
<td>• Strong constituency for stabilization and fiscal restraint</td>
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<tr>
<td><strong>Predatory Autocracy</strong></td>
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<tr>
<td>• Unstable government, legitimized by military force of arms</td>
<td>• Short horizon</td>
<td>• No savings</td>
</tr>
<tr>
<td>• Lack of consensus building mechanisms</td>
<td>• Policy instability, non transparency</td>
<td>• Highly procyclical expenditure</td>
</tr>
<tr>
<td>• Bureaucracy exists as mechanism of rent capture and distribution; corrupt judicial system</td>
<td>• Low competitiveness, high transactions costs</td>
<td>• Very high government consumption, rent absorption by elites through petty corruption and patronage, capital flight</td>
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<tr>
<td>• Little or no civic counterweight</td>
<td>• Spending interests strong vis-à-vis private sector or pro-stabilization interest</td>
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4. PUBLIC FINANCIAL MANAGEMENT

A. THE ARRIVAL OF OIL REVENUE MAGNIFIES ALREADY EXISTING PUBLIC FINANCIAL MANAGEMENT CHALLENGES

4.1 Widening deviations in budget execution and growing deficit illustrate Ghana’s difficulties in enforcing its budget law, and highlights its public financial management challenges. As oil revenue starts to flow into the budget from 2011 onwards, these challenges will be exacerbated and, unless addressed rapidly, the risk of oil revenue being diverted from its designated use will remain high.

<table>
<thead>
<tr>
<th>Table 4.1: Budget Deviations and Deficits Have Been Widening</th>
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<tbody>
<tr>
<td>Fiscal Deficit (% of GDP)</td>
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<tr>
<td>2005</td>
</tr>
<tr>
<td>Budget</td>
</tr>
<tr>
<td>Actual</td>
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<tr>
<td>Deviation</td>
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Source: IMF

4.2 In the face of it, a number of reforms could help reduce fiscal deficits while making the budget more supportive of Government’s development priorities. It includes: (i) public expenditure planning and budgeting through a more effective MTEF; (ii) developing Ghana’s Integrated Financial Management Information System, GIFMIS; (iii) strengthening payroll management and control; and (iv) critically screening capital expenditures.

4.3 In selecting these areas for policy reform it is important to recognize the substantial progress in Public Financial Management in recent years. Ghana has made good progress in adding public sector agencies to the computerized personal and human resource management database system (IPPD-2), with 60 percent of subvented agencies having already been added to IPPD-2. Ghana has also strengthened internal review of public investments, establishing at the Ministry of Finance and Economic Planning (MoFEP) a Project Finance Analysis (PFA) Unit with responsibility for analyzing, monitoring and evaluating new investment projects deemed eligible for Government support. There is also closer monitoring of transfers to the energy utilities, with government’s cross-debt clearing arrangement between the utility companies settling inter-agency debts at the Ministry of Finance. And tax administration has improved by further extending the Government’s tax collection capacity.

B. STRATEGIC BUDGETING THROUGH A MORE EFFECTIVE MTEF

4.4 Reforming the MTEF would make the budget more strategic. Ghana was one of the first countries in Sub-Saharan Africa to begin framing annual budgets within a regularly updated Medium Term Expenditure Framework (MTEF). From the middle 1990s, capital and recurrent

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62 This unit will also have the responsibility of assisting project sponsors leverage private financing by assisting them in setting up Public-Private Partnership (PPP) Agreements and Private Finance Initiatives (PFIs). To realize the Government’s plans, DFID is providing support in the area of project evaluation, and the Bank is providing technical assistance to review and upgrade the current framework for investment appraisal and PPPs to ensure that Government resources are deployed in the most optimal manner for achieving the maximum economic benefits.
budgets were integrated within a unified program-based budget, inclusive of performance information. But initial enthusiasm was premature. Over a decade after its launch, the MTEF still fails to exert strategic influence on annual budgeting, which remains incremental, line item based, and adversarial in character. Ministries, Departments and Agencies (MDAs) regularly exceed MoFEP budget guidelines, and pay little attention to the efficiency and effectiveness of existing resource use. At the same time, an enormous staff effort is devoted to assembling volumes of detailed budget information, complete with indicators and objectives, which have no discernable traction on real budget decisions.

4.5   **The budget remains very fragmented, and the annual budget process is incremental and poor at responding to changing policy priorities in a fiscally coherent way.** As noted in the recent External Review of Public Financial Management (World Bank, 2009c), the budget process is very fragmented, with less than 45 percent of expenditure covered by the MTEF (Items I & II are allocated outside the MTEF planning process, as are externally financed investments). Budget ceilings are not credible and are ignored by MDAs. There is a large variation between initial ceilings and what is finally negotiated between a line ministry and MoFEP. Cabinet is not involved in resource allocation trade-offs, in-year releases are unpredictable (even though aggregate revenue projections have been quite accurate) and MDAs act rationally in ignoring MoFEP’s MTEF derived budget ceilings. The outer years of projected program spending are notional, and the performance information contained in the detailed MDA volumes serves little purpose in budget implementation. Prioritization does take place, but by default and not strategically.

4.6   **There are many reasons to address these deficiencies and ensure that spending decisions reflect the Government’s policy priorities in a manner that is fiscally sustainable.** The first is to make better use of existing budget resources. Instead of responding to current policy priorities, the budget funds policies, programs and staffing structures that have accumulated over many years, with some of questionable relevance. Managers have little incentive to examine critically the existing use of resources — financial, physical and human. Their motivation is to defend the *status quo* lest currently approved resources are lost. Adding oil revenue to such an inefficient allocation system would mean that they, too, would be inefficiently allocated and used. Current budgeting incentives encourage over-bidding and waste. A well functioning MTEF, introduced early in the preparation process and made the basis of annual budget ceilings (and cabinet level policy-making through the year) greatly changes these incentives for the better. Additional reasons discussed below include underpinning the goals of a Fiscal Responsibility Law, and ensuring that arrangements for stabilizing oil revenue and preventing international price volatility do not undermine domestic budgeting.

4.7   **The MTEF needs to be made more comprehensive, and more tightly tied into the annual budget preparation process, and to be the fiscal reference against which future policy decisions with spending implications are assessed.** There are three key steps to make Ghana’s MTEF more effective as an instrument for strategic budgeting. First, the MTEF should be expanded to cover all categories of Central Government spending and all sources of finance at both the aggregate and the MDA level. Second, political commitment to the annual budget process should be strengthened. The Cabinet could play a larger role in approving the sectoral/MDA ceilings proposed by MoFEP on the basis of the macro-fiscal situation and the MTEF rolled forward each year. Transparency of the budget should be increased by MoFEP
preparing a Budget Framework Paper (BFP) at the start of the process. This would set forth the macro-fiscal situation, aggregate available resources, and the proposed sector/MDA allocations consistent with the previous year’s MTEF and new policy decisions taken during the year (and anticipated). Third, the MTEF should be the resource availability reference against which all policy decisions with financial implications in current and future years are evaluated. Further, MDAs should be encouraged to prepare sector and sub-sector strategic plans consistent with the overall resource framework.63

4.8 The amount transferred from the Oil Fund to the annual budget should be guided by the MTEF and be subject to a fiscal rule. The solution lies in an arrangement which allows the fiscal rule to determine the maximum that can be drawn in any year from the Fund. With a Permanent Income Fund (PIF), the rule would be straightforward, with a same amount channeled every year to the budget. With a Stabilization Fund, the actual amount transferred to the budget should be discretionary within the limit of the fiscal rule. This would be decided by reference to a Medium Term Fiscal Framework (MTFF), the macro-fiscal foundation of a MTEF.64

Furthermore, the implication here is that, whatever the ultimate use of Oil Fund revenues, all withdrawals from the Fund pass through the annual budget, so that fragmentation is avoided, and the budget presents a single picture of government spending. Thus, even if the source of a project or program’s funding might be the CPF, the amount spent would be appropriated through the budget, and thus subject to normal budgetary spending rules, and reported as part of budget execution.

4.9 The proposal for a Fiscal Responsibility Law (FRL) is a good one, but the Government should proceed with deliberation, finalizing it only when other components of the financial management system, such as the reformed MTEF and budget process, and oil revenue arrangements are in place. Ghana has been considering enacting a Fiscal Responsibility Law. The FRL was announced in the 2008 Budget Speech, and drafting is underway with assistance from the IMF. It is understood that the FRL will incorporate a fiscal rule based upon a reference level of public debt (probably 45 percent), above which fiscal adjustment will be triggered, based upon a minimum improvement in the budget primary balance. A Fiscal Council will be established to report compliance and advise the Government. Such a law would be the capstone of Ghana’s public financial management legal framework, which could both enshrine principles of good PFM, incorporate key processes like the MTEF and the annual budget preparation, and mandate standards of fiscal transparency, consistent with international good practice. The Government should proceed with developing such a law, but finalize it only when reforms to the MTEF and budget process have been agreed, and how the oil and gas stabilization fund will operate is clearer.

63 Some strategic plans are prepared presently, but they are not consistent with available resources, thus do not address intra-sectoral priorities and trade-offs, and serve chiefly as bidding documents to lever additional resources from MoFEP during the budget preparation process.
64 Terminology varies, but a MTEF is normally seen as comprising two elements: (i) a 3 year macro-fiscal plan embracing aggregate revenues, spending and budget balance, and, (ii) a 3 year breakdown of spending by sector and/or main spending ministries. This is imposed top-down, but as costing improve, increasing the sector/MDA envelopes will reflect the cost of existing policies and programs, leaving “headroom” for new policies.
C. DEVELOPING THE GIFMIS

4.10 The Government should ensure full and effective implementation of budget management support systems. Ghana’s Budget and Public Expenditure Management System (BPEMS) and its Integrated Payroll and Personnel Database (IPPD2) are, respectively, the Government’s integrated financial management system and human resources management system. Implementation of BPEMS started in 1999 with the purchase of six Oracle Financials modules, initially with donor support and since 2005 with the Government’s own funding. Both development and roll out have been problematic. Currently, BPEMS operates in 8 pilot ministries, but only a fraction of transactions are processed through BPEMS, although the system has the capability of processing all. At the same time, key functions like budget preparation, releases and production of public accounts are done by alternative systems. The Government’s intention is to build on BPEMS to develop the Ghana Integrated Financial Management Information System (GIFMIS), able at fulfilling all these functions, and make it the sole financial management system for all ministries and agencies. Until GIFMIS is fully operational, Ghana will continue to lack a modern PFM system, capable of processing multiple transactions rapidly, facilitating control systems, and providing comprehensive and timely reports to management and for external scrutiny.

D. MANAGING THE PUBLIC SECTOR WAGE BILL

4.11 There is an urgent need to contain the growth of the public sector wage bill through better control of hiring and a more coherent public sector wage policy. The original version of the Government’s payroll management system (currently IPPD2) was launched in 1995 and, after problems emerged a few years ago, replaced with a new version partially implemented in 2007. Although Oracle based, it is not linked to BPEMS. Connectivity and staff capacity problems have slowed roll out, and many MDAs use their own HR management systems – even though pay scales, excepting for health, are essentially common across government. A major problem is the absence of a consolidated establishment list, against which staffing can be controlled. This contributes greatly to the difficulty the Ministry of Finance has encountered holding the line on staff numbers. In turn, it contributes to the high and rapidly growing wage bill. The larger point is that if oil revenue is not going to result in further uncontrolled staffing expansion, priority must be given to completing the roll out of IPPD2 and the strengthening of establishment controls. And if some subvented agencies are allowed to retain their own systems, reporting back to government must be improved, and staffing approval processes and controls established and followed.

4.12 Strengthening public sector payroll bill management and control should result from actions on several fronts:

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65 General Ledger (GL), Purchase Order (PO), Accounts Payable (AP), Cash Management (CM), Public Sector Budgeting (PSB), and Accounts Receivable (AR). The system was extensively customized to fit traditional processes rather than modernizing the latter. As a result, it is costly to maintain, future upgrades are difficult, and ultimately will not be supported by Oracle. A joint donor PFM advisers’ review in April 2008 estimated that only 6% percent of the value of budget expenditures was being processed through BPEMS.

66 ACCPAC is used by the CAGD for the production of public accounts, BMS for releases, NETS for Items III and IV, and Activate by MoFEP and most MDAs for budget preparation, consistent with GPRS strategic objectives.
Strengthening oversight of records regarding entry, exit and transfers of employees in the payroll system, beyond what the legal requirements stipulate. These oversight weaknesses compound the software problems outlined above, as neither the records of employees who exit employment are promptly removed from the system, nor are records quickly updated to reflect transfers within the public sector. The responsibility for updating the payroll records is decentralized to the respective MDA, so at times it takes several months for records to be updated. Even though heads of departments sign the on the number of employees in their departments on a monthly basis, there is no structure within the MDA or from a central source (e.g. CAGD or OHCS) to routinely check whether staff on the payroll are indeed at post.

Implementing a single payroll spine system that provides comparability across sectors and guides the present system of decentralized wage negotiations. In the absence of a system that provides comparability across sectors, the present process of decentralized wage negotiations tends to distort pay reform. There are 9 different service unions that negotiate wage agreements separately for their members with government. In this context, across the board pay increases end up not recognizing distinct categories within these agreements, leaving to the discretion of most agencies the decision of moving staff across grades. The result is that MDAs tend to abuse the decentralized promotion system.

E. PUBLIC INVESTMENT

4.13  Given its magnitude in the budget and the emphasis that it has been given as an engine of growth, there is scope for a more robust approach to the identification, preparation and management of public investments. This would call for the following:

- Screening public investment proposals, requiring that project selection is guided by clearly defined priorities, and the preparation of pre-feasibility studies, including the calculation of net present social value using either cost-benefits or minimal costs analysis. These steps should allow funds to flow on the margin to projects with the highest rate of return or the lowest cost of delivery to beneficiaries;

- Broadening oversight over the finances of State Owned Enterprises (SOEs) and over external borrowing by having the State Enterprise Commission submit to MoFEP quarterly consolidated reports on the financial position of SOEs – at present the SEC receives only individual SOE reports, but does not consolidate them.
5. INFRASTRUCTURE

5.1 Ghana’s oil revenue could allow narrowing its infrastructure gap. This chapter looks at opportunities and challenges in this domain. It concludes that Ghana’s infrastructure needs, though substantial, do not look daunting relative to the size of the country’s economy and historic levels of infrastructure spending. However, there are major inefficiencies in the way the country deploys resources for infrastructure that urgently need to be addressed. Moreover, a substantial amount is being absorbed by utility subsidies. Fine-tuning of the institutional and regulatory framework will thus also be needed to get the most out of the country’s existing infrastructure endowment.

5.2 Infrastructure development contributed a net 0.5 percent to Ghana’s improved growth performance per capita in the period 2001-05 (Calderon, 2008). The net impact of infrastructure on Ghana’s growth performance lagged behind that in the ECOWAS region as a whole. Whereas the telecom revolution contributed a full percentage point to improved per capita growth performance in Ghana, deficient power infrastructure actually held growth back by half a percentage point (Figure 5.1). These estimates predate the 2006/07 energy crisis that had an even greater dampening effect on growth by constraining production in the mining, manufacturing and services sectors.

Figure 5.1: Historic and Potential Future Links Between Infrastructure and Growth

5.3 Upgrading Ghana’s infrastructure could potentially add four percentage points to per capita GDP growth. If the quality and coverage of Ghana’s infrastructure was improved to the level currently enjoyed by Mauritius – the African country with the best infrastructure endowment – the country’s per capita growth performance could be enhanced by four percentage points. The largest potential contribution would come from addressing deficiencies in power infrastructure that would be responsible for 1.7 percentage points of this overall gain.

A. FINANCING GAP

5.4 The World Bank estimated the cost of providing a standardized infrastructure package in a number of African countries, including Ghana. The package is designed to meet foreseeable
economic and social demands for the next decade. In the case of Ghana, the package includes the following:

- For ICT, completing intra-regional fiber optic links and providing universal access to a GSM voice signal and a public access broadband internet facility.
- For power, 2,000 MW of new generation capacity\(^6\), and an increase of electrification up to 76 percent coverage.
- For transport, linking population centers to ports and borders via good quality paved roads, raising rural access to 75 percent and increasing urban paved road density.
- For water and sanitation, achieving the Millennium Development Goals.

5.5 **Meeting Ghana’s infrastructure needs would cost US$1.6 billion per year for the next decade or around 10 percent of GDP** (Table 5.1). About 60 percent of this requirement relates to capital expenditure and the remaining 40 percent to operations and maintenance. Almost half of the total spending requirement is associated with the power sector, with investment needs for that sector alone as high as US$600 million per year.

<table>
<thead>
<tr>
<th>Sector</th>
<th>US$ billion per year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital expenditure</td>
<td>Operation and maintenance</td>
<td>Total spending</td>
</tr>
<tr>
<td>ICT</td>
<td>0.03</td>
<td>0.03</td>
<td>0.07</td>
</tr>
<tr>
<td>Power</td>
<td>0.60</td>
<td>0.13*</td>
<td>0.73</td>
</tr>
<tr>
<td>Transport</td>
<td>0.27</td>
<td>0.22</td>
<td>0.49</td>
</tr>
<tr>
<td>WSS</td>
<td>0.12</td>
<td>0.20</td>
<td>0.31</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.02</strong></td>
<td><strong>0.58</strong></td>
<td><strong>1.60</strong></td>
</tr>
</tbody>
</table>

*Source: Africa Infrastructure Country Diagnostic.*

Note (*) does not include fuel used for electricity generation.

<table>
<thead>
<tr>
<th>Sector</th>
<th>US$ billion per year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O&amp;M</td>
<td>Capital expenditure</td>
<td>Total Capex</td>
</tr>
<tr>
<td></td>
<td>Public Sector</td>
<td>Public Sector</td>
<td>OECD Financiers</td>
</tr>
<tr>
<td>ICT</td>
<td>0.18</td>
<td>0.06</td>
<td>0.00</td>
</tr>
<tr>
<td>Power</td>
<td>0.13*</td>
<td>0.06</td>
<td>0.02</td>
</tr>
<tr>
<td>Transport</td>
<td>0.12</td>
<td>0.05</td>
<td>0.12</td>
</tr>
<tr>
<td>WSS</td>
<td>0.04</td>
<td>0.02</td>
<td>0.10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0.47</strong></td>
<td><strong>0.18</strong></td>
<td><strong>0.24</strong></td>
</tr>
</tbody>
</table>

*Source: Africa Infrastructure Country Diagnostic.* Note (*) does not include fuel used for electricity generation.

5.6 **During the mid-2000s, Ghana was already spending US$1.1 billion per year (or 10 percent of GDP) and that total has likely increased** (Table 5.2). According to the AICD review of infrastructure spending during the mid-2000s, Ghana emerged as a country with a relatively high GDP share dedicated to infrastructure spending. This share has likely increased in

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\(^6\) The doubling of existing capacity to 4,000 MW by 2017 would allow satisfying a domestic demand projected to grow by 7 percent annually (including a small and constant proportion for exports to neighboring countries). Additional capacity investment to become a large exporter of electricity in the region could be envisaged with higher gas reserves than currently assessed, among other industrial choices for gas use.
recent years given that the 2007 Eurobond issue allowed additional infrastructure investments of US$600 million in 2008 (out of which US$500 million was used for electricity), more than the entire publicly funded infrastructure investment reported for the earlier period. During the mid-2000s, public investment was predominantly funded from ODA and domestic public finance, each at around US$0.2 billion per year. Both the private sector and non-OECD financiers also contributed significantly each with around US$0.1 billion per year.

5.7 **During the mid-2000s, Ghana’s infrastructure financing gap amounted to US$0.8 billion (or 7 percent of GDP).** Just over half of the financing gap was associated with shortfalls in power sector investment alone. There were also significant shortfalls in transport as well as water and sanitation spending, although these were primarily associated with operations and maintenance. Lack of adequate maintenance in these sectors explains why some 26 percent of main roads and 42 percent of urban water networks are currently in need of rehabilitation. The rapid expansion of the feeder roads network, from 11,500 km in 2001 to 42,000 km in 2008, also significantly raised the need for maintenance in the transport sector, given their particular fragility.68

5.8 **Ghana’s financing gap could be substantially reduced to US$0.35 billion per year (or 2 percent of GDP) if all the inefficiencies in existing spending could be addressed.** The value of operating inefficiencies in the utilities sector is very high, and tackling this problem could save more than US$0.38 billion per year. Improving cost recovery in power and water would save a further US$0.20 billion per year. Overall, these measures would substantially reduce the financing gap, although significant shortfalls of around US$0.15 billion per year each would remain for power and transport.

<table>
<thead>
<tr>
<th>US$ billion</th>
<th>ICT</th>
<th>Power</th>
<th>Transport</th>
<th>WSS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing gap</td>
<td>0.00</td>
<td>0.46</td>
<td>0.19</td>
<td>0.15</td>
<td>0.80</td>
</tr>
<tr>
<td>Reallocation spending</td>
<td>0.03</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.03</td>
</tr>
<tr>
<td>Raise capital budget execution</td>
<td>-</td>
<td>-</td>
<td>0.01</td>
<td>-</td>
<td>0.01</td>
</tr>
<tr>
<td>Reduce operating inefficiencies</td>
<td>0.10</td>
<td>0.04</td>
<td>0.03</td>
<td>0.04</td>
<td>0.21</td>
</tr>
<tr>
<td>Improve cost recovery</td>
<td>-</td>
<td>0.15</td>
<td>-</td>
<td>0.05</td>
<td>0.20</td>
</tr>
<tr>
<td>Remaining gap</td>
<td>-</td>
<td>0.27</td>
<td>0.15</td>
<td>0.06</td>
<td>0.35</td>
</tr>
</tbody>
</table>

*Source: Staff calculations.*

There are a number of avenues that can be taken to raise the missing finance:

- Some contribution could be made through non-concessional external borrowing, within the current debt sustainability framework.69 Further public finance on the requisite scale could also be forthcoming from fiscal petroleum revenues.

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68 It is estimated that about half of maintenance spending needs in transport are for feeder roads.
69 Under the debt sustainability framework baseline (IMF and World Bank 2009), a maximum of US$500 million could be borrowed externally per year on a non-concessional basis without raising the level of debt distress.
There is also scope to increase private financing flows. These have been relatively low to date, standing at 0.8 percent of GDP compared to values of 1-2 percent of GDP among peers such as Kenya, Nigeria, Senegal and Tanzania.

In the case of the road sector, there is a need to increase revenues allocated to the Road Fund for maintenance purposes, by increasing the allocation of fuel levy resources from 90 to 100 percent or by increasing fees to DVLA.

B. KEY POLICY ISSUES

5.9 There is scope to reduce utilities’ inefficiencies. The hidden cost of the inefficiencies can be estimated by comparing revenues captured by Ghana’s utilities with those of a well-performing utility operating under similar circumstances. Taking institutional reform measures to address these deficiencies needs to be a key priority area.

- Ghana’s power utility (ECG) loses as much as 0.3 percent of GDP due to high technical and commercial losses (of about 27 percent, against 15 percent for best performers).
- Ghana’s water utility (GWCL) loses a further 0.3 percent of GDP due to high distribution losses (estimated around 50 percent, against 20 percent for best performers).
- Ghana Telecom has employment levels significantly higher than best practice levels with the associated inefficiencies amounting to 0.1 percent of GDP.

5.10 Under-pricing is also a serious issue both in the power and water sectors.

- ECG and VRA have historically under-priced power to large industrial customers, resulting in financial losses of around 1.4 percent of GDP. Tariff reforms affecting most large industrial customers in late 2007 have improved the situation, but a substantial subsidy of the order of US$100 million (or about 0.6 percent of GDP) per year remains for the mining industry that pays no more than US$0.06 per kilowatt-hour for power that costs over US$0.13 per kilowatt-hour to produce. Also, commercial and residential tariffs did not keep pace with inflation since the last adjustment in late 2007 and were by end 2009 significantly below operating costs, not mentioning investment costs directly borne by the Budget.
- GWCL’s tariff structure, including a lifeline of US$0.45/m3 for the first 20m3, allows full operating cost recovery. However, investment costs are financed through donors funding, and their transmission to end-users would require significant tariff increases. However, given that piped water connections are heavily skewed towards the upper income groups, increased tariffs would allow reducing connection costs and would certainly benefit lower income groups, who currently pay US$5/m3 for water containers.

5.11 Strengthening the financial position of the utilities would put them in a better position to implement much needed investments.

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70 Mostly commercial losses due to illegal connections by private vendors and people in general. In contrast, bills collection rate, at almost 90 percent, is considered high by international standards.

71 The magnitude of the subsidy varies with the level of rainfall, which affects hydro-power production capacity and in turn affects the extent to which costly oil imports are needed for supplementary power generation.
Large scale investments in power generation are needed, and are already underway. However, these need to be complemented with significant investments to upgrade the ageing and increasingly unreliable high voltage transmission network. Modernization of the overloaded distribution network is also needed, though this should be done in conjunction with measures to address problems of metering, billing, theft, and revenue collection.

Access to improved water sources in Ghana is increasing slowly, and access to piped water has barely moved at all during the last decade. Access to improved sanitation is one of the lowest in the sub-Saharan region. On current trends, the country will barely meet the MDGs for access to improved water and will fail to meet the target for improved sanitation. A concerted effort is needed to address the “silent crisis” in this sector, which even in Accra has been constraining economic and social activity in the public and private sectors and may pose serious health and environmental consequences.

5.12 Continuing improvements to policy and regulatory frameworks are also needed so ensure that Ghana’s infrastructure can make its full potential economic contribution.

In power, weak management and regulation remains a key issue. Decision making is ad hoc and dispersed (PURC, MOFEP, Ministry of Energy). There is no clearly defined power sector investment plan based on least-cost principles that could provide the basis for mobilizing both public and private resources in a systematic manner. Yet substantial public funds and bilateral aid go to rural electrification (SHEP) without planning and coordination.

In transport, major institutional reforms are underway under the aegis of the National Transport Policy. As part of this process, it is necessary to complete the establishment of the new institutional framework with the creation of the National Roads Authority to act as asset manager for the network and take on the roles of the Road Funds, as well as the Ghana Rail Development Authority to develop an appropriate regulatory environment for the sector. Supporting legislation in the form of the draft Road Traffic and Railways Acts also needs to be ratified.

In ICT, the recent dissolution of the NCA Board puts into question the independence of regulatory oversight for the sector. Key issues where further work is needed include strengthening regulatory capacity for quality of service regulation, moving towards a more transparent licensing framework for wireless services, developing a transparent strategy for developing national backbone infrastructure with broad-based private sector participation, and continuing to make progress with the liberalization of access to the SAT III submarine cable.

In water and sanitation, the National Water Policy was approved in 2007 and the National Sanitation Policy was submitted for approval in 2008. Strategic investment plans have been prepared for both urban and rural water supply but they need to be prioritized and an action plan developed for their implementation. A national action plan for sanitation is expected during the third quarter of 2009. While water supply in urban areas is provided by a national water company and in the rural and small towns coordinated by a national agency, sanitation is the responsibility of local governments who lack the necessary technical and financial capacity. Proper operation and maintenance of water facilities in rural areas and of sanitation facilities in general remains a key challenge for the WSS.

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72 Community Water and Sanitation Agency (CWSA).
6. INVESTMENT CLIMATE

A. GHANA ALREADY HAS MANY OF THE SYMPTOMS OF DUTCH DISEASE

6.1 The arrival of an important oil industry in Ghana will accentuate the existing private sector economic structure in which the dominant exports are cocoa and gold. Amongst other mineral resources, these do not lend themselves to substantive downstream value added activity but support a relatively high real exchange rate and, with associated service sectors, establish a floor for wage levels, hindering the development of the manufacturing sector.

B. GHANA HAS NOT DEVELOPED A COMPETITIVE MANUFACTURING SECTOR

6.2 The Ghanaian economy changed very little in the last two decades and that also means that the economy’s set of traditional exports have not changed as well. With respect to the economic composition of production, the share of industry in total GDP has been steady at 25 percent over the past 25 years. The industrial sector has shown a level of growth which is only slightly behind agriculture and services. Since 2004, this growth has been concentrated in the non-tradable sectors, particularly energy and construction. Growth in these non-tradable sectors was not accompanied by the same level of growth in new export products. While exports have been increasing rapidly, from $2.8 billion in 2005 to $4.2 billion in 2007, this is largely due to high commodity prices. Cocoa, gold, and timber continue to account for approximately the same proportion of total exports as they did before economic growth accelerated. Furthermore, the value of trade as a percent of GDP fell in 2007, GDP increased by 6.3 percent but exports by 5 percent in real terms. This relatively modest performance in the tradable sectors indicates that Ghanaian firms may not be competitive in international markets. The analysis of manufacturing firm performance based on the data gathered through the Ghana Enterprise Survey suggests that only a small number of manufacturing firms have succeeded in developing new exports. In a group of 42 countries in Sub-Saharan Africa, Ghana ranked 30th in the rate of growth of total exports in the period 2000-06.

Figure 6.1: Since 2004, GDP Growth Has Been Concentrated in the Non-Tradable Sectors

![Sectoral GDP Growth Rates Chart]

C. **Ghana’s Lack of Competitiveness Appears to Stem from Poor Productivity**

6.3 Despite recent improvements in many sectors, Ghana remains somewhat uncompetitive. In the 2009 WEF Competitiveness Report, Ghana is shown to be relatively weak in the related areas of technology, innovation, education and labor market efficiency suggesting that skills and productivity lie at the hard of the competitiveness challenge for Ghana.

**Box 6.1: Global Competitiveness Index**

<table>
<thead>
<tr>
<th>Global Competitiveness Index</th>
<th>Rank (out of 134)</th>
<th>Score (1-7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCI 2008–2009</td>
<td>102</td>
<td>3.6</td>
</tr>
<tr>
<td>GCI 2007–2008 (out of 131)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>GCI 2006–2007 (out of 122)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Basic requirements</td>
<td>106</td>
<td>3.7</td>
</tr>
<tr>
<td>1st pillar: Institutions</td>
<td>63</td>
<td>4.0</td>
</tr>
<tr>
<td>2nd pillar: Infrastructure</td>
<td>82</td>
<td>3.0</td>
</tr>
<tr>
<td>3rd pillar: Macroeconomic stability</td>
<td>121</td>
<td>3.9</td>
</tr>
<tr>
<td>4th pillar: Health and primary education</td>
<td>115</td>
<td>4.0</td>
</tr>
<tr>
<td>Efficiency enhancers</td>
<td>95</td>
<td>3.5</td>
</tr>
<tr>
<td>5th pillar: Higher education and training</td>
<td>111</td>
<td>3.1</td>
</tr>
<tr>
<td>6th pillar: Goods market efficiency</td>
<td>97</td>
<td>3.9</td>
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<tr>
<td>7th pillar: Labor market efficiency</td>
<td>108</td>
<td>4.0</td>
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<td>8th pillar: Financial market sophistication</td>
<td>69</td>
<td>4.3</td>
</tr>
<tr>
<td>9th pillar: Technological readiness</td>
<td>115</td>
<td>2.5</td>
</tr>
<tr>
<td>10th pillar: Market size</td>
<td>88</td>
<td>3.1</td>
</tr>
<tr>
<td>Innovation and sophistication factors</td>
<td>107</td>
<td>3.1</td>
</tr>
<tr>
<td>11th pillar: Business sophistication</td>
<td>98</td>
<td>3.6</td>
</tr>
<tr>
<td>12th pillar: Innovation</td>
<td>114</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*Source: World Economic Forum (2009)*

6.4 The key issue in determining the competitiveness and prospective path for private sector development will be the ability to increase the productivity of enterprises. Ghanaian firms are less productive than those of comparator countries mainly because they are less capital and skill intensive and relatively small in size. Small firms in Ghana are less productive and less capital intensive than small firms even in other low income countries in Sub-Saharan Africa, while large firms are relatively productive and relatively capital intensive. Ghanaian firms are primarily oriented toward the domestic market and those firms that do export do not have above average productivity rates.
6.5 **Firms in Ghana have less machinery and equipment per worker than firms in the comparator countries.** The median firm has about US$1,200 of machinery and equipment per worker. While capital intensity is relatively low in Ghana, returns on capital, are comparatively high.

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73 In comparison, firms in Nigeria have about US$2,600 of machinery and equipment per worker. Firms in South Africa have close to US$16,000 per worker, and firms in Malaysia have approximately US$26,000 per worker.
D. Labor Markets Do Not Compensate for Low Productivity

6.6 Firms in Ghana are less likely to export than in any of the comparator countries. Whereas less than one-quarter of manufacturing enterprises from Ghana export, more than half export in most comparator countries. Because the international market represents the frontier in efficiency and productivity, Ghana’s relatively low export participation suggests labor costs are not low enough to compensate for low productivity.

**Figure 6.4: In Ghana Relatively Fewer Firms Export**

![Bar chart showing the percentage of firms exporting in different countries.](chart)

Source: World Bank Enterprise Surveys
Note: Comparisons only include manufacturing enterprises.

6.7 Labor productivity is relatively low in Ghana. The median firm in Ghana produces approximately US$1,000 of value-added per worker. In comparison, firms in China, Thailand, Kenya, and Swaziland produce between six and seven times as much per worker. Firms in Malaysia produce about fourteen times as much and firms in South Africa over twenty-five times as much. The relatively small size of manufacturing firms may be a major factor in explaining Ghana’s low labor productivity. Labor productivity tends to be lower in small firms. The median manufacturing establishment has only about 10 employees in Ghana. By comparison, the median firm in Swaziland had about 60 employees and the median firm in Kenya had about 50 employees (it has been noted there has been a dramatic shift in Ghana over the past decade with small, and potentially informal, firms becoming increasingly important (Teal et al., 2006).
6.8 The ratio of mandated minimum wage rates to labor productivity (value added per worker) is also an important determinant of the demand for labor. The ratio is 0.56 for Ghana as against 0.4 in Cambodia and 0.43 in China. Labor market policies such as minimum wages, statutory redundancy pay, etc, have an obvious bearing on the labor market, setting the rules of the game. The fact that hiring workers formally results in a very high cost makes many Ghanaian employers continue to hire workers casually. Many of the recent gains in total factor productivity have come from agriculture with little progress made by industry. In consequence,
Ghana has not had the competitiveness to attract internationally mobile labor-intensive industries such as garments, footwear or electronic assembly.

E. REGULATIONS ON ONGOING BUSINESS OPERATIONS ARE NOT CONSIDERED BINDING

6.9 While Ghana has made significant strides in terms of removing the barriers to private sector activity in Ghana, ranking in the top 10 reformers of 2006 and 2007 and now ranking in the top half of countries assessed in the World Bank “Doing Business” survey, it is sometimes commented that Ghana has its worst rankings in the sectors which are most important for a low-income country (those related to starting a business, labor regulation and gaining access to finance). Equally, however, Ghana has by far the most attractive business environment of any of the countries in West Africa.

Table 6.1: Doing Business Indicators

<table>
<thead>
<tr>
<th>Ease of Doing Business</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting a Business</td>
<td>137</td>
<td>143</td>
</tr>
<tr>
<td>Dealing with Licenses</td>
<td>142</td>
<td>139</td>
</tr>
<tr>
<td>Employing Workers</td>
<td>145</td>
<td>144</td>
</tr>
<tr>
<td>Registering Property</td>
<td>31</td>
<td>27</td>
</tr>
<tr>
<td>Getting Credit</td>
<td>109</td>
<td>102</td>
</tr>
<tr>
<td>Protecting Investors</td>
<td>38</td>
<td>33</td>
</tr>
<tr>
<td>Paying Taxes</td>
<td>65</td>
<td>83</td>
</tr>
<tr>
<td>Trading Across Borders</td>
<td>76</td>
<td>63</td>
</tr>
<tr>
<td>Enforcing Contracts</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Closing a Business</td>
<td>104</td>
<td>99</td>
</tr>
<tr>
<td>Overall Ranking</td>
<td>87</td>
<td>82</td>
</tr>
</tbody>
</table>


F. FOREIGN INVESTMENT HAS FAVORED COMMODITIES AND SERVICES

6.10 In part due to the favorable market for commodities in recent years, but also due to the relative attractiveness of Ghana as the “Gateway to West Africa,” the value of FDI and the country’s share of regional FDI flows have both increased. Unrest in several of Ghana’s neighboring countries has served to enhance Ghana’s attractiveness as a regional location for processing crops such as cocoa, as well as serving the regional markets. In addition, Ghana has benefited from investment in logistics as it has reestablished its historic position as a trade route to the landlocked countries of the Sahel due to continued uncertainty in Côte d’Ivoire.

6.11 Extractive industries typically bring with them an international standard of business services (accounting, finance, etc.). International mineral resource conglomerates are essentially a conduit for mobilizing capital for emerging market investment. Internationally capital markets are receptive to emerging market offerings for extractive industries (Ashanti Gold was historically the only Ghanaian company with an international listing). It is possible that the increased presence of “international standard” companies in the oil sector will serve as a catalyst for the provision of business services in Ghana, for which there is already a nascent regional service cluster. There is strong anecdotal evidence to suggest that internationally
mobile companies are choosing to locate their regional headquarters in Ghana over other West African countries.

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>32.2</td>
<td>31.9</td>
<td>28.5</td>
<td>24.4</td>
<td>22.5</td>
<td>20.0</td>
<td>22.7</td>
<td>24.5</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>23.2</td>
<td>20.2</td>
<td>24.1</td>
<td>25.1</td>
<td>25.9</td>
<td>23.0</td>
<td>26.0</td>
<td>27.9</td>
</tr>
<tr>
<td>Kenya</td>
<td>7.4</td>
<td>7.2</td>
<td>7.3</td>
<td>7.0</td>
<td>6.7</td>
<td>5.9</td>
<td>4.9</td>
<td>6.5</td>
</tr>
<tr>
<td>Nigeria</td>
<td>35.3</td>
<td>39.5</td>
<td>40.9</td>
<td>37.3</td>
<td>35.7</td>
<td>32.1</td>
<td>37.9</td>
<td>37.6</td>
</tr>
<tr>
<td>Uganda</td>
<td>14.1</td>
<td>16.6</td>
<td>19.0</td>
<td>20.8</td>
<td>21.1</td>
<td>22.0</td>
<td>23.4</td>
<td>25.9</td>
</tr>
<tr>
<td>Zambia</td>
<td>72.0</td>
<td>66.1</td>
<td>73.2</td>
<td>71.0</td>
<td>62.8</td>
<td>51.6</td>
<td>40.0</td>
<td>48.2</td>
</tr>
</tbody>
</table>


G. ACCESS TO FINANCE IS COMPETITIVE

6.12 The pattern of access to finance in Ghana is nuanced. Larger firms have markedly better access to capital than smaller ones. There is some evidence that limited access to finance is a function of perceived risks in certain sectors, notably manufacturing and agriculture, while the relative success of the service sector in Ghana has provided an attractive market for bank lending to salaried workers who were previously ignored by a finance sector directed to support priority economic sectors.

6.13 The Doing Business indicators for Ghana which are relevant to access credit are more favorable than those for other countries which rank higher than Ghana overall. This would suggest that it is not the financial sector environment which is constraining enterprise access to finance. In the WEF Global Competitiveness Report Ghana ranks 102 out of 134 overall but 69th for financial sector sophistication (this sector has the highest score of any sector with 4.3).

6.14 Since 2003 Ghana has undergone a far-reaching reform of the financial sector which has led to significant sector growth. Competition in the banking sector is showing encouraging signs with the entry of new banks, primarily from abroad, especially from Nigeria. Possibly as a result of new competition, credit to the private sector has increased significantly from 13.1 percent of GDP in 2004 to 24 percent in 2007. Capital markets have also shown significant growth in recent years, the Ghana Stock Exchange index rose 32 percent to record highs in 2007, trading volume rose 193 percent and market capitalization increased to $13.5bn, more important, new listings raised over $130m of capital for Ghanaian companies. The maturity of the Government bond market has been extended to 5 years largely due to the opening of the term fixed income markets to foreign investment, which dominate the longer end of the market. Despite improvements, stock exchange and bond markets remain amongst the world’s least liquid, and the number of listings (34) remains below a critical mass for a vibrant, sustainable market.

6.15 Long term finance institutions remain modest despite recent growth: the insurance sector is US$400m, a 60 percent increase since 2005 but still only 2.5 percent of GDP. The state pension fund, SSNIT, dominates capital markets and continues to be by far the largest financial institution in Ghana with assets equal to around 10 percent of GDP (although the recent rapid
The changes and improvements in the financial sector have produced dramatic results in a relatively short period of time. Institutions have been reformed to better establish the value of credit and allow for allocation on the basis of comparative benefit. The greater flexibility allowed to financial institutions in the allocation of credit has not only been a result of regulatory and policy reform, it has also been a function of technological innovation, which has lowered individual transaction costs and facilitated down-scaling of banking operations. Perhaps reflecting the wider options open to banks, Enterprise Survey data suggests the manufacturing sector has yet to benefit fully from the substantial reforms to the financial markets. The limited use of credit and low levels of investment by manufacturing firms shows that use of financial instruments is not as far along in Ghana as in several of its cohort.

Interest rates remain high, most likely explained by the challenges in shaking off a record of double digit inflation and high government borrowing as well as a history of a high proportion of non-performing loans. Non-performing loans, having fallen from 23 percent in 2002 to 6.1 percent in September 2007, grew to 8.8 percent in May 2008; however, the NPLs come from the traditional borrowers. Moreover, non-performing loan rates are markedly higher than average at financial institutions with a history of state influence and which have tended to support identified sectors of economic priority (Agricultural Development Bank, National Investment Bank and Merchant Bank all have NPL rates higher than their peers).

Not surprisingly, the sectors with poor loan performance face high interest rates and limited supply of credit. In the year to May 2008, these trends were even more marked, with services receiving over 42 percent of all new credit while manufacturing received only 8.5 percent. More remarkably, the share of households in new credit rose to 33.4 percent, up from 19.2 percent for the same period in 2007, while enterprises shared 66 percent (down from 77.7 percent in 2007). On year to year basis, credit to households increased by 89 percent to GH¢856.3 million, compared with 49 percent increase for the same period in 2007. Within lending to the enterprise sector, there is a significant concentration in the Commerce and Finance and the Services sectors, together representing more than half of all enterprise lending. The interest rates payable by blue chip companies (such as large international conglomerates) is broadly comparable to treasury bill rates, while the rates paid by SMEs is about the same as that paid by individual borrowers, and notably lower than that paid by enterprises in the agricultural sector. Details of a recent credit conditions survey contained in the July 2008 Financial Stability Assessment published by the Bank of Ghana indicated that Small and Medium-sized Enterprises continue to benefit from increased access to credit, despite an overall net tightening of credit stance to enterprises. The report identified increased competition in the banking sector as the main contributing factor to the net easing of credit to SMEs.

The finding that manufacturing companies have difficulty accessing credit could possibly reflect the fact that manufacturers face challenges in competition, leading to high default rates, while the banking sector is relatively efficient and competitive, directing the bulk
of new loans to consumer finance, addressing the needs of the burgeoning salaried workforce of the service sector where risks are low.

Table 6.3: Analysis of Commercial Bank Lending to Enterprises
(August 2008)

<table>
<thead>
<tr>
<th>Sector</th>
<th>GHC million</th>
<th>Share of Lending</th>
<th>Percentage of Loans Non-Performing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture Forestry &amp;</td>
<td>195.1</td>
<td>4.1%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Mining &amp; Quarrying</td>
<td>156.5</td>
<td>3.3%</td>
<td>22.6%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>597.1</td>
<td>12.7%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Construction</td>
<td>367.5</td>
<td>7.8%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Electricity, Gas &amp; Water</td>
<td>160.9</td>
<td>3.4%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Commerce &amp; Finance</td>
<td>1,506.2</td>
<td>32.0%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Transport, Storage &amp;</td>
<td>142.1</td>
<td>3.0%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Services</td>
<td>1,177.0</td>
<td>25.0%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>406.2</td>
<td>8.6%</td>
<td>7.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,708.6</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Bank of Ghana.

H. INCREASING THE DOMESTIC SUPPLY RESPONSE IN NON-TRADABLE SECTORS

6.20 The challenge for Ghana will be how to migrate from a position of low productivity, basic technology and limited innovation in an environment in which a strong natural resources sector and accompanying services establish a relative high real exchange rate and an effective floor on wages. As low costs will not allow Ghana to compensate for low productivity, an accommodating business regulatory environment and a free market in factors (land, labor etc.) will not be sufficient to lift Ghana to the higher productivity platform necessary to be competitive as a resource rich economy. Moreover, the wage floor established by the service sector will continue to be centred on the urban areas, especially Accra, encouraging migration. Ultimately, Ghana must migrate to a position of higher value added production (and service delivery) through investment in education and technology. There is limited scope for gradualism and support for agriculture and rural enterprises will be important to sustain employment.

I. OVERCOMING THE INFRASTRUCTURE CONSTRAINT

6.21 Ghana’s poor infrastructure emerged as by far the dominant perceived barrier to development in the most recent Enterprise Survey with some 49 percent of companies highlighting unreliable electricity supply as the biggest obstacle to growth. Access to water is also frequently cited by companies as an important constraint. Investment in increased power generation and distribution capacity as well as water availability have already been acknowledged as a priority and this should be accompanied by a tariff and regulatory reform which ensures availability of power and water on a sustainable basis, as discussed in Chapter 5.

J. IMPROVING FACTOR MARKETS

Land Tenure

6.22 Notwithstanding the reforms now under way with regards to land tenure, access to land continues to be an important consideration for enterprises, particularly in the metropolitan areas. Delays in land registration and titling create bottlenecks in access to land and
in site development. Although issues with land tenure are typically perceived to be greatest in the rural areas and where traditional authorities have greater say, the recent Enterprise Survey showed that for the manufacturing companies, Accra and Kumasi have the highest proportions of firms indicating that access to land is a serious obstacle. Reforms to address this constraint could include systematic land titling and customary boundary demarcation through implementation of the Land Act and Land Use Planning Act. Implementation could be facilitated through the development of one-stop-shop for land administration.

**Figure 6.7: Access to Land is Difficult in Urban Areas**

![Bar chart showing percentages of firms indicating serious constraint to access to land by city:
- Accra-Tema: 32.5%
- Kumasi: 32.0%
- Tamale: 7.9%
- Takoradi: 3.6%

Source: World Bank (2009e).]

**Informality and Employment**

6.23 The high prevalence of informality in Ghana remains an important obstacle to improvements in productivity. Some 88 percent of the Ghanaian workforce is employed informally as farmers or in self employment. The informal sector is less able to invest in business, gain access to credit, establish standards or participate in industry bodies. This challenge is particularly important outside of the metropolitan zones. In the Upper East region there are at present only three privately-owned enterprises with more than 20 employees. Increased access to credit is likely to be one of the major catalysts for enterprise formalization. This process can also be encouraged through improvements in taxation, licensing and land titling. Ghana still ranks 137th in the Doing Business survey for ease of starting a business. Ghana ranks particularly poorly in terms of labor market flexibility, ranking 145th in Doing Business. Rigidities in the labor market lead to a lack of training and this feeds into the weak productivity, particularly for the informal sector which is reflected in relatively low private sector wages, particularly for the informal sector.

6.24 In addition to the need for investment in education and skills development, the labor markets can be supported through the implementation of a new Labor Act, amending and consolidating existing legislation and establishing a National Labor Commission with a mandate to address issues related to tripartite dialogue.
Table 6.4: Public Sector Wage Premiums Are High and Growing

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage Public sector</td>
<td>1.15</td>
<td>1.12</td>
<td>1.47</td>
</tr>
<tr>
<td>Wage Private sector Formal</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Wage Private sector Informal</td>
<td>0.65</td>
<td>0.49</td>
<td>0.63</td>
</tr>
<tr>
<td>All</td>
<td>0.22</td>
<td>0.16</td>
<td>0.27</td>
</tr>
</tbody>
</table>

*Source: GLSS, various issues.*
7. AGRICULTURAL COMPETITIVENESS

A. INTRODUCTION

7.1 Ghana is poised to enter a new period of macroeconomic management and growth, driven by oil revenues that will begin to come on stream in 2011. Ghana’s agricultural sector – and the 70 percent of Ghana’s poor who live in rural areas and whose livelihoods depend on farming – stands to benefit from the surge in demand for agricultural commodities as well as the increased public revenues available for agriculture-related investments. At the same time, international experience shows that the competitiveness of the agricultural sector is often hurt from a natural resource discovery.

7.2 There are three reasons why agriculture’s performance will largely determine the national benefit from the emerging oil sector. First, agriculture is often a relatively tradable sector and therefore more at risk from ‘Dutch Disease,’ resulting from the impacts of resource booms on the exchange rate. Given that agriculture provides over one-third of GDP, agriculture’s performance remains critical to overall growth performance. Second, an estimated two-thirds of Ghanaian manufacturing depends on agricultural inputs, so an uncompetitive and stagnating agricultural sector would also undermine the competitiveness of manufacturing. Third, as the recent World Development Report 2008 Agriculture for Development has emphasized, inclusive agricultural growth is particularly effective in reducing poverty, especially when large numbers of the poor depend on farming. Even with more rapid rural-urban migration, the majority of the poor in Ghana will continue to be rural for decades to come.

7.3 This chapter outlines the risks of the rising oil economy to the agricultural sector, and provides policy options for transforming oil resources into a positive opportunity to spur pro-poor agricultural growth and competitiveness. It first outlines the pathways by which oil revenues could impact the agricultural sector. Second, it reviews the current strengths and weaknesses in Ghana’s agricultural competitiveness. Finally, it suggests policies and priority expenditures in the sector to maintain and improve competitiveness as well as instruments to enhance the efficiency and effectiveness of increased public expenditures in the sector.

B. OIL AND A CHANGING MACRO-ECONOMIC ENVIRONMENT FOR AGRICULTURE

7.4 As discussed in the Overview, exploitation of newly-discovered natural resources can provide substantial resources to Governments and to factors of production employed in the ‘booming’ sectors. However, how these ‘resource booms’ are spent can create substantial macroeconomic upheavals, including the so-called ‘Dutch Disease’ whereby existing successful sectors are harmed because of a loss of international competitiveness. These effects include induced changes in the exchange rate, both the real exchange rate (the relative prices of non-tradable and tradable goods) and the nominal exchange rate.

7.5 It is useful to distinguish three possible effects of an export-led natural resource boom:

74 Breisinger, 2008; Fiess and Verner, 2003.
• An increase in the price of non-tradable goods and services due to a rapid expansion of demand financed by oil revenues. This ‘spending effect’ can be induced from demand originating in the public or the private sectors;
• Upward pressure on costs in both tradable and non-tradable sectors as production factors such as labor are attracted into the booming sector in response to higher returns. This is the ‘resource movement’ effect;
• An appreciation of the nominal exchange rate because of increased oil revenues leading to a decline in the price that domestic producers of tradable products receive (as well as reduced prices of their tradable inputs).

7.6 The ‘Dutch disease’ would occur if any of these effects leads to a loss of competitiveness among domestic producers. For instance, competing imports might become cheaper, resulting in a loss of domestic market share. In the case of exports, a loss of competitiveness vis-à-vis other exporters would see a decline in Ghana’s exports.

7.7 A fourth consequence of the oil economy is also possible: the likelihood that urban more politically powerful constituencies are better able to capture rents generated by oil revenues leading to growing rural-urban and regional inequality.

7.8 Despite these potential risks, Ghana’s oil economy presents an unparalleled opportunity for the agricultural sector and for poverty reduction in particular.

• Demand for food, especially higher valued products, such as horticulture and livestock products, will increase as incomes rise. This is likely to be somewhat muted in the short term, however, since the immediate employment potential in the oil sector will be low;
• Urbanization and urban consumer preferences will lead to increasing demand for processed and foods with greater domestic value-added. Provided Ghana’s tradable sectors can remain competitive, this provides an opportunity for both farming and the food processing manufacturing sector;
• Government revenues for public investment in agricultural sector will increase and help alleviate chronic under-investment in public goods that has constrained agricultural growth.

7.9 Yet, historical experience suggests that countries experiencing oil booms have often ignored agriculture leading to decimation of vibrant agricultural export sectors, escalating food imports, and growing inequality. Examples of the negative fallout to agriculture from the oil booms of the 1970s and 1980s include Nigeria, Ecuador, Mexico, Algeria, Iran and Iraq. Even countries such as Chile, that have imposed safeguards to manage natural resource windfalls, have experienced threats to their agricultural competitiveness (see Box 7.1). These experiences underline the special challenge confronting Ghana in managing the emerging oil economy.

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75 It is also worth noting that in some instances, such as the commodity price spike in 2007—08, the agricultural sector can actually be the cause of the boom and exchange rate appreciation.
Box 7.1: Nigeria and Chile in a Resource Boom

_Nigeria_ experienced an oil boom in the 1970s that severely affected its agriculture. The real value of the Naira more than doubled during the decade, leading to a sharp decline in the price of tradable agricultural commodities. Per capita agricultural production fell by 40 percent from 1970 to 1982 and Nigeria rapidly became a large food importer. Public investments financed by oil revenues and intended to boost productivity were largely wasted in expensive and ultimately unproductive schemes, such as large scale irrigation.

More recently, _Chile_ implemented a strong rule-based system to manage revenues from copper and other minerals based on the ‘well-regarded Norway model’ of maintaining revenues overseas during periods of high prices. Nonetheless, during the last minerals’ boom, the Chilean peso appreciated by about 50 percent relative to the dollar over 2002–2008. This severely squeezed profits in a very dynamic agricultural export sector, based on horticulture.

Source: Pinto, 1987; Valdes, pers. comm.

7.10 Finally, Ghana's oil bonanza may well be temporary due to either limited oil supplies or the volatility of oil prices, and future economic growth will again be dependent on agriculture. Yet experience shows that once market share is lost it can be extremely hard 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 the case in export markets, when supply chains are often complex and difficult to establish. As an example, Ghana is still trying to recover market share in the European pineapple market having lost ground with the slow conversion to new varieties demanded by European supermarkets.

C. IMPACTS OF EXCHANGE RATE MOVEMENTS AND THE EXTENT OF THE TRADABLE SECTOR

Differential impacts within agriculture

7.11 **Exchange rate appreciation will have differential impacts across the agricultural sector**, depending on the extent of tradability. Knowing which agricultural commodities are tradable and which are non-tradable is crucial for the appropriate policy response. Export commodities such as cocoa and pineapples are unambiguously tradable and are adversely affected in direct proportion to the exchange rate appreciation and the increase in the price of production factors, land and labor. Staff analysis suggests that agricultural exports volumes could be significantly affected by an oil boom-led real exchange rate appreciation. In 2015, agricultural export volumes (mostly cocoa) could be 5-6 percent lower with oil than without oil. Import-competing commodities such as rice, vegetable oils, sugar and poultry will experience similar impacts. Some commodities appear to be non-tradable in that they are not physically traded (e.g., cassava, yams, plantains, and millet). However, an exchange rate appreciation may have a negative impact on the prices of non-tradables where there are tradables that are close substitutes (e.g., rice for cassava). The available evidence from Ghana suggests that prices of imported rice do pass through to prices of domestic staples, although the effect is not large, even for domestically produced rice (see Box 7.2). Seemingly exchange rate appreciation would have only modest impacts on the incomes of food crop farmers.

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7. Ghana’s imports as a share of total agricultural imports in 2003-05 were cereals (30 percent), sugar (13 percent), diary and fruits and vegetables (9 percent each), and vegetable oils (8 percent). Wheat is a major cereal import but Ghana does not produce wheat.
Box 7.2: Price Transmission and the Extent of Tradability

Examining the correlation between prices of imported and domestically produced commodities at different locations can indicate the extent of tradability (see Table below) reports correlation coefficients between prices of a sample of domestic food staples and the import price of rice—Ghana’s main food import—for the period 2000-08. A high correlation indicates tradability and/or strong substitution effects (Cudjoe et al., 2008). This reveals: (i) prices of domestically produced rice are only modestly related to the import price; (ii) price transmission between imported rice and local maize, cassava and yam even though the last three are not traded by Ghana in significant quantities (the bulk of imported maize is for the poultry industry); and (iii) that price transmission varies by location, with prices in more remote locations being more affected by import prices, counter to what would be predicted.

<table>
<thead>
<tr>
<th>Location</th>
<th>Local Rice</th>
<th>Maize</th>
<th>Cassava</th>
<th>Yam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accra</td>
<td>0.119</td>
<td>0.409</td>
<td>-0.050</td>
<td>-0.085</td>
</tr>
<tr>
<td>Sunyani</td>
<td>0.246</td>
<td>0.185</td>
<td>-0.175</td>
<td>0.013</td>
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*Source: Cudjoe et al. (2008); Italics denote statistical significance at the 5 percent level.*

Exchange rate appreciation and the impact on intermediate inputs

7.12 **The impact of exchange rate appreciation on competitiveness depends on the effects on production costs as well.** To the extent that inputs used in agriculture are tradable, production costs will fall with exchange rate appreciation. In general, few inputs are applied in agricultural production with fertilizer use particularly low compared to other countries in the region. However, data for 2006 and 2007 indicates total fertilizer imports of 190,000mt—equivalent to 26kg/ha. Other agro-chemical imports have also increased substantially to around 20,000mt from around one-tenth this amount in 2000.\(^78\)

7.13 **Although prices of fertilizer and the like comprise the bulk of purchased inputs and may be reduced with an exchange rate appreciation, the low share in the aggregate cost structure means that the impact on overall costs will be limited.** Exceptions are rice and maize where detailed farm budgets across a range of farms types and locations indicates that tradable inputs account for between 22 – 46 percent of total costs for maize and 30 – 41 percent for rice.\(^79\) This indicates that negative impacts of exchange rates for rice and maize would be partly offset by lower input prices.

Will increasing world prices offset the ‘Dutch disease’?

7.14 **It might be tempting to believe that in the aftermath of the world food crisis, higher prices for agricultural commodities in world markets will offset the negative effects of the Dutch disease on agricultural competitiveness.** However, agricultural commodity prices had already sharply declined by the end of 2008. Available projections from the World Bank and

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\(^78\) MoFA (2008).

FAO suggest that real prices of agricultural commodities over the next decade will be at comparable levels to 2005, although somewhat higher than the period 1996 – 2000.\footnote{World Bank, 2008c; FAO/OECD, 2008.} Although commodity prices may be more volatile, they are not likely to be the salvation for Ghana’s agriculture in an emerging oil economy.

\section*{D. Maintaining the Competitiveness of Agricultural Value Chains}

\subsection*{7.15 The extent to which oil will be inimical to agricultural growth will depend on the scope to improve competitiveness of agricultural value chains.} Some interventions such as in rural infrastructure are likely to be critical to competitiveness of most value chains. Other priority interventions will be conditional on factors specific to each cost structure – many will be firm-specific – but available qualitative and quantitative assessments of agricultural value chains suggests a number of sources of inefficiencies that warrant urgent attention.

\subsection*{7.16 Cocoa is clearly a special case in which Ghana is globally competitive – indeed, cocoa beans command a quality premium against international competitors.} But it is also worth remembering that Nigeria’s once vibrant cocoa sector never recovered from the effects of the oil booms of the 1970s and 1980s. Nonetheless, recent achievements in Ghana are impressive – an increase in production from 400,000mt annually in the late 1990s to over 650,000mt in recent years – despite the negative nominal rate of assistance afforded the sector and a modest appreciation of the exchange rate.\footnote{Brooks 	extit{et al.} (2007) report nominal rates of assistance for the cocoa sector of -21.7 percent for the period 2000 – 2004; this is markedly lower than previous levels of 30.9 percent for the preceding five years and -36.2 percent for 1990 – 1994.} Recent reforms by COCOBOD and CMC\footnote{These are the Cocoa Board (COCOBOD) which is responsible for supporting cocoa production through targeted programs and for domestic delivery of cocoa beans to the export warehouses. The Cocoa Marketing Company (CMC) is the monopoly body responsible for selling Ghana’s beans on the world market.} have increased the share of the producer price to 70 percent of the net FOB price\footnote{The use of net FOB as the benchmark price allows for certain expenditures to be deducted from the fob price while maintaining the 70 percent commitment. These include costs of activities such as mass spraying that purportedly directly benefit farmers. In aggregate, payments to farmers account for about 60 – 65 percent of revenues from exports and domestic sales.} (from around 40 percent at the start of the decade) which, combined with recent high cocoa prices, has been a boon to producers. The 30 percent margin between export and farm prices is comprised of two elements: (i) the costs associated with the operations of COCOBOD and CMC; and (ii) an official export tax which is revised annually.\footnote{IMF (2008).} For the 2007/08 crop year the official export tax was 11.1 percent.\footnote{WTO (2008).}

\subsection*{7.17 The exchange rate appreciation will reduce the Cedi price of cocoa} (and poses a threat to the finance operations – see Box 7.3). To sustain producer prices in absolute terms producers’ share of FOB prices needs to increase. This could be achieved by reducing the formal export tax rate and/or by further increasing the efficiency of COCOBOD and CMC. As illustrated in Figure 7.1, the composition of these costs has changed markedly in recent years, with \textit{freight} and \textit{administration} costs having increased substantially both in absolute and
proportionate terms. A closer scrutiny of these expenditures may identify efficiencies that can be achieved without undermining the important role that COCOBOD plays in the marketing system. Another option would be to increase value adding in line with Government’s strategy, but this may be even more challenging.

**Box 7.3: Exchange Rate Appreciation and Forward Cocoa Sales**

Under existing arrangements in the cocoa market, the CMC has access to Ghana’s cocoa exports at a predetermined price (denominated in Cedis). Forward sales typically occur 6 – 8 months prior to the start of the main crop season, and are typically denominated in sterling. As well as allowing Bank of Ghana to anticipate balance of payments developments, revenues from forward sale provide working capital for payments to cocoa farmers at time of delivery.

Since producer prices are fixed, CMC avoids facing a price risk. It does, however, face a currency risk and could lose substantially if the Cedi appreciates against the currency in which the forward sale is denominated.

*Source: LMC (1996)*

**Box 7.4: Can Ghana Increase Value Addition In Cocoa?**

Increasing value addition in the cocoa sector is an important policy objective of Government. Recent investment in new facilities means Ghana has the potential to process a substantial share of its production. Realizing this potential faces a number of obstacles. First, beans are only a small fraction of input costs. Second, given the high costs of shipping other ingredients combined with the high costs of shipping processed cocoa compared to beans, efficient production typically requires processing in close proximity to (European) final consumers. Third, tariff escalation in importing countries compounds this disadvantage. Fourth, efficient production requires regular and predictable access to local supplies which is not the case in Ghana.

**Figure 7.1: The Composition of Cocoa Marketing Costs in 1995–98 and 2006–08**

*Source: COCOBOD.*

**Competitiveness of other value chains—room for improvement**

7.18 Many value chains appear to have considerable ‘competitive space’ and could weather a modest exchange rate appreciation or increase in factor costs. Estimated rates of return for plantation crops (oil palm and rubber), fruits (mangos, pineapples and citrus), soybean,

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86 The manifesto of the new administration sets a target of 60 percent.
87 For the average chocolate bar, producer proceeds account for about 4 percent.
chilies, tomatoes, and guinea fowl are high in all cases, although the complexity of organizing individual chains varies widely among them.\(^{88}\) Yet, even in these cases, the analysis has identified considerable scope for improving efficiency, such as through reducing high post-harvest losses for citrus and other horticulture crops where timely evacuation and marketing is essential.

7.19 **In other cases, efficiency improvements are critical for competitiveness;** these improvements should be achievable. For example, rice consistently shows high losses in processing. The milling ratio for rice in major rice producing countries averages around 0.65kg of milled rice per 1kg of paddy but this ratio is only 0.50 to 0.55 in Ghana. The combined effect of raising the conversion rate to 0.65 and increasing yields to 3.2 tons per hectare by applying a modest dose of nitrogen fertilizer would make all rice production systems privately profitable even if world prices return to their low levels observed in 2002.\(^{89}\) Other countries in West Africa, such as Sierra Leone, have achieved international levels for milling ratios, and there is no reason why better coordination along the rice value chain and targeted technical assistance in processing and milling could not succeed.

7.20 **Finally, some value chains such as poultry and vegetable oils are especially vulnerable since they appear to be barely competitive under a range of scenarios.** There are undoubtedly opportunities to increase the efficiency of such chains, but Ghana should also be prepared to accept declining competitiveness and rising imports for some commodities where it has little comparative advantage.

### E. **Policy Options for Improving Competitiveness**

7.21 **Robust agricultural growth is a precondition for achieving middle income status by 2015** – a stated policy objective.\(^{90}\) Investing in agriculture is an existing development objective which demands renewed vigor (and resources) in light of oil revenues. Well-coordinated interventions will be needed to maintain competitiveness and achieve rapid and sustainable growth in agriculture. To a large extent, these recommendations reiterate existing approaches espoused in the proposed national long-term development plan and the existing sector strategy (FASDEP II). The threat and opportunity posed by the oil economy adds greater urgency to these ongoing efforts.

7.22 **Previous analysis has highlighted the growth impacts of applying existing technology better** – an additional two percentage points to agricultural GDP by some estimates.\(^{91}\) In that sense, the policy response is one of intensification and scaling up of numerous, relatively small-scale efforts in the sector that show initial success.

7.23 Interventions can be broadly grouped into the following:

- revising trade and tax policies to reduce the impact of Dutch disease effects;

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\(^{88}\) Owusuansah and Amoaku (2008).
\(^{90}\) Breisinger *et al.* (2007); Breisinger *et al.* (2008).
\(^{91}\) See Jackson and Acharya (2007).
➢ public investments in core public goods, such as infrastructure, irrigation, and research; and
➢ providing matching grants to productivity-enhancing investments by private farmers and agribusinesses.

Trade and tax policies

7.24 One option would be to implement a compensating tariff ‘surcharge’ on import substitutes tied to exchange rate movements. There are at least three reasons why this might not be a good strategy for Ghana. First, cereal imports are already protected by a tariff of 20 percent and any higher tariff would impose tradeoffs of efficiency and further erosion of economy-wide competitiveness through higher food prices. Second, poor consumers spend a relatively higher share of their budgets on food so a tariff is anti-poor. Finally, it is difficult in practice to establish rule-based tariff compensation, so that this approach runs a real risk of political capture of tariff decisions that would impose even higher costs in terms of efficiency and equity.

7.25 On the export side there is clearly the potential to reduce or remove export taxes to compensate for any loss of competitiveness within the domestic cost structure – this should be a priority consideration for the cocoa sector. Similarly, continued liberalization in key export markets – especially to reduce tariff escalation on processed products – will improve Ghana’s competitive position although if pursued through multilateral approaches this poses a simultaneous risk of preference erosion.

Investments in core public goods

7.26 Current spending on agriculture is below the 10 percent target committed to under NEPAD. Total spending by MoFA amounts to about 1.8 percent of the budget, with additional spending in the sector by other ministries raising the total to 6-8 percent. Carefully designed public investment programs have considerable potential to use oil revenues to enhance competitiveness and reduce poverty. Based on extensive research, the highest payoffs are likely to be for investments in core public goods, especially agricultural R&D, infrastructure (rural roads) and education and skills (see Table 7.1: ) all of which can improve productivity and competitiveness. Recent evidence also points to good returns from investing in irrigation in Sub-Saharan Africa. Indonesia during the 1970s, successfully transformed rural areas by tapping oil revenues for these types of investments and increased its competitiveness as measured by its share of global agricultural markets. Some investments, especially rural infrastructure and education, also helped develop the rural nonfarm sectors.

7.27 Evidence from Ghana is consistent with these findings: a 1 percent increase in agricultural spending is estimated to increase per capita agricultural value added of 0.15 percent; this impact is higher than that observed from other sectors.

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92 The proportion of expenditure spent on food is 65 percent for the poorest decile of rural households but only 36 percent for the richest decile of urban households (Cudjoe et al., 2008).
94 World Bank (2008a).
7.28 More specifically, the key investments for competitiveness of Ghanaian agriculture are:

- Agricultural technology, including improved varieties, land and water management, and post harvest issues, for both traditional commodities and emerging higher value commodities. This is not business as usual: investments must be driven more by market forces, be accountable to users, and involve partnership with the private sector, including farmer organizations;

- Roads, especially rural roads, and communications more generally. As in most Sub-Saharan Africa, the high cost of transportation revealed in value chain analysis indicates the high returns from improving market access. These returns are likely highest in the North where infrastructure is especially poor;

- Regular water and power supplies given the hygiene requirements of food processing, especially refrigeration and the vulnerability of food stuffs to spoilage;\(^{95}\)

- Irrigation, but small scale rather than large scale (see below); and

- Clear and credible quality and safety standards with efficient testing and enforcement, including certification, to ensure access to sophisticated markets, especially overseas.

Table 7.1: Returns to Public Investment in Agriculture and Impacts on Poverty Reduction

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Making better investments

7.29 Effective utilization of the greater fiscal space created by oil revenues assumes domestic absorptive capacity to manage larger public expenditures - in this case both investments and the provision of services such as extension advice. Notwithstanding a number of systemic problems with public financial management exist (World Bank, 2009c) and institutional constraints within MoFA (IFPRI, 2009) the fact that current spending is so low suggests absorptive capacity does indeed exist. Overall procurement systems are judged to be sound (Public Procurement Board, 2007,) and measures being adopted to streamline expenditure management systems. These measures, combined with the fact that current expenditures so low, provides prima facie evidence that bottlenecks are unlikely to be encountered should agriculture-
related investments be increased significantly. It is less obvious that the current agricultural extension system could rapidly scale-up additional funding. On the one hand, diagnostic assessments report the absence of operational funds mean extension staff is often under-employed, suggesting that the impact of existing staff could be enhanced relatively easily. On the other hand, current activities focus on technology adoption and other farming practices with little extension in broader competitiveness or value chain skills. To be sure, improved technology adoption will certainly raise yields but a more substantive effort to improve competitiveness will require greater access by farmers to a broader range of knowledge which current public system is ill-suited to provide (IFPRI, 2009). Private provision - even with public funding - of such services is one option, although the market for privately provided extension services remains under-developed (on both the demand and supply side).

7.30 It may be tempting to use the increased flexibility in oil-financed public expenditures to provide transfers and subsidies to reduce production costs. These may be justified in very select cases, but in general competitiveness is best served by investments that spur long-run productivity growth.

**Box 7.5: Subsidies versus Investments**

| Given greater budget flexibility, there will be increased political pressure for subsidies and other transfers to reduce production costs. Some subsidies may be seen as an investment—for example, carefully targeted fertilizer subsidies to help develop a dynamic private fertilizer market and grants to help farmers buy small irrigation pumps. Over time, these subsidies can be phased out, as the market develops. Other subsidies such as tractor subsidies are much more difficult to justify since the private sector can usually develop tractor markets when it is profitable to do so, and these subsidies are not sustainable in the long term. Some other transfers may also be a good use of oil revenues to reduce rural poverty and inequality, especially safety nets and employment schemes for those left behind due to lack of skills or old age. |

Matching grants to farmers and the private sector

7.31 Additional public investments need to be complemented by innovative approaches to ensure that increased spending is efficiently utilized and reaches its targets. These approaches generally require working directly with the private sector and communities.

- **Community driven development grants focused on income generation.** Matching grants can be provided directly to community-based or farmer-based organizations for small scale irrigation, market infrastructure, processing equipment, and capacity building. The Fadama program in Nigeria now has more than a decade of experience in channeling these grants to rural communities. The most recent evaluation estimates that 2.3 million people have benefited, with an average income gain of 60 percent in the second phase of the program in 12 states.96 There is also experience in Ghana with these approaches that could be scaled up using farmer-based organizations.

- **Innovation and technical assistance grants.** These grants typically provide funds on a matching basis to private industry and strong farmer organizations to test innovative approaches, invest in collective goods such as cold chains, provide business services and market analysis, and contract technical assistance to help coordinate and improve

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96 Nkonya et al. (2008).
efficiency along the value chain. The Grains Development Partnership in Ghana is using this approach. Other countries are using autonomous public-private agencies to manage such services and grants, especially for horticulture value chains.

F. IMPROVING THE INVESTMENT CLIMATE FOR COMMERCIAL AGRICULTURE

7.32 Both the community driven funds and innovation funds require strong private sector participation, which in turn requires an improved investment climate. This could provide high payoffs to agriculture. According to a survey of 54 large companies in Ghana, agriculture and the food and beverage sector is the most attractive industrial sector to invest in; from 1994 – 2002 over $204 m of FDI (11.5 percent of total FDI) was invested in agriculture and a large share of the further $346 m invested in manufacturing occurred in food-related business.97

7.33 A supportive business climate is critical for improved competitiveness. Two issues are of particular interest to agriculture:

- Land availability, especially for commercial farming which requires substantial contiguous plots for efficient production. The challenge is to reduce the currently high transactions costs and time to assess land and provide tenure security for medium term investments, while protecting the rights of current users;
- Access to rural finance. While the rural finance network has expanded substantially in recent years resulting in increased rural deposit mobilization, little is being recycled into agricultural credit, especially for small-holders. Commercial bank lending to agriculture remains extremely low at 4.1 percent.98

Making investments pro-poor

7.34 Careful targeting of expenditures by region and type of farmer will be needed to ensure that investments are pro-poor and reduce the risk of rising inequality.

Box 7.6: Exploiting the Agricultural Potential of Northern Ghana

| Northern Ghana, including much of Brong-Ahafo Region, is part of a broad agro-ecological zone, known as the Guinea Savannah that occupies an estimated 7 million square km in sub-Saharan Africa. The agriculture of this region is vastly unexploited for a number of reasons—historical (animal and human diseases), poor soils, climatic risk, and very low population and road density. However, the potential of this region is huge, as demonstrated by the experience of the Cerrado in Brazil and Northeast Thailand. In both cases, regions with very similar ecologies and problems to the Guinea Savannah have been turned into major poles of commercial agriculture that are highly competitive in global markets in commodities such as cassava, soybeans, sugar, rice, maize, cotton and beef. Factors that contributed to this success included: (i) improved agricultural technology, both varieties and soil management; (ii) publicly financed infrastructure, rural credit, and business development services; (iii) a dynamic private sector and a conducive investment climate; and (iv) a policy environment that set prices in line with world prices. Overall, however, Thailand which favored a smallholder led model has been more successful in combining growth with poverty reduction. |


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97 Aryeetey et al. (2008).
98 Data for the share of lending as at June 2008, while that for non-performing loans is at August 2008.
7.35 **Regional priorities.** The major potential area for expansion of competitive small and medium-scale farming is in the guinea savannah zone where most commodities with strong demand are produced – rice, maize, cassava, soya and beef (especially Brong Ahafo and Northern Regions). These together with the Upper (East and West) Regions are also areas of high poverty rates which merit special attention in any investment program. Given evidence from other countries, investment in these less developed regions may be win-win – they would provide higher payoffs since they are starting from a very low level, and they would directly address the poor (see Box 7.6).99

7.36 **Small versus large-scale farming.** Larger-scale commercial farming has a role in improving agricultural growth and competitiveness, but to be inclusive and achieve poverty reduction targets, small and medium farmers must be at the core of a strategy to use oil revenues to revamp the agricultural sector. Especially in the North of Ghana, there is considerable land and water that could be brought into production through investment in large-scale commercial farming. But even in this case, poverty reduction impacts can be enhanced through involvement of smallholder farmers through contract and out-grower schemes which usually require some donor or public sector support (see Box 7.7).

**Box 7.7: Extending the Benefits of Private Investments through Outgrower Schemes**

| The Integrated Tamale Fruit Company (ITFC) involves 2,000 small-holder farmers each responsible for one acre of organic mangos, alongside their own plantation of around 300 ha. Participants negotiate their own land arrangements with customary authorities. ITFC provides an interest free loan for start-up inputs (quality planting material, extension advice, etc.) equivalent to $2,400. Initiated only in 2000, some outgrowers are now harvesting fruit for export. Most rubber and oil palm plantations in Ghana include out-grower schemes of some form. UNILEVER is supporting two oil palm plantations to strengthen out-grower arrangements. TOPP was established in 1983 and now covers 255 farmers on 1,018 ha. The second, BOPP, began in 1995 on 1,650 ha involving 438 farmers. Small-holder yields within the program are reportedly two-thirds above those outside the scheme. Contrary to the mango example, both schemes acquired land from the Government and attracted beneficiaries into the area. Note that, in all these cases, concessional finance from donors has been essential to fund the start-up costs and provide working capital even though the operations are ostensibly private sector driven. Public budgets augmented by oil revenues could be similarly utilized. |

G. **CONCLUSION**

7.37 **The lessons from many countries experiencing a sharp inflow of oil or other mineral revenues suggest that Ghana’s policy makers will have to pay particular attention to the agricultural sector to ensure that its competitiveness is not undermined nor inequality increased.** However, the potential for increased public expenditure from oil revenues is also a unique opportunity to enhance competitiveness, foster agricultural growth, and reduce poverty. Doing this will require a carefully designed program of public expenditures focusing on core public goods as well as community development funds and well targeted interventions in value chains. Increased capacity at all levels of government will be needed to ensure better use of public funds, complemented by autonomous public-private agencies. Increasing the voice of

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farmers and other agricultural interests will also be important in ensuring a just allocation of public expenditures to the sector.
1. The CGE model developed for this study is a typical neoclassical model with endogenous prices, market clearing, and imperfect substitution between domestic and foreign goods, allowing for endogenous factor accumulation (capital, land) and labor force participation. As in any CGE prices are endogenous on each market (goods and factors) and equalize supplies (imports; Ghanaian production for the domestic market; factors supply) and demands (final demand from households, the Government, investors and the rest of the world; intermediate demand from producers; factors demand), so as to obtain the equilibrium. The equilibrium is general in the sense that it concerns all the markets simultaneously. This type of modeling allows combining detailed databases with a sound micro-based theoretical framework capturing the interdependence and inter-linkages of markets. With such characteristics, CGE models are useful tools to assess the long term impact of shocks and structural reforms. The underlying assumption of market clearance and monetary neutrality renders, on the contrary, CGE models improper to address short-term impacts of macroeconomic policies.

2. The model is calibrated for the year 2008, updating with national accounts Ghana’s Social Accounting Matrix (SAM) for the year 2004 (Ghana Statistical Services, 2006). The SAM and the model comprise 26 sectors of activity, one representative Ghanaian household and one trading partner, the World. Production factors comprise two labor types, formal and informal, physical capital, two land types, urban and rural, and one specific factor to generate electricity (hydro-electric capacities).

3. Supply is modeled using nested constant elasticity of substitution (CES) functions, which describe the substitution and complement relations among the various inputs. Producers are cost-minimizers and constant returns to scale are assumed. Output results from two composite goods: intermediate consumption and value added, combined in fixed proportions. The intermediate aggregate is obtained by combining all products in fixed proportions (Leontief structure). The value-added is then decomposed in two substitutable parts: labor and a capital-natural resource bundle. In formal sectors (administration, financial services), nominal wages are indexed to urban land prices (with an elasticity of $\frac{3}{4}$). As such, the formal labor market clears through reversing excess supply to the informal labor market where wages equalize supply and demand. Capital, land (urban and rural), and hydro-electric capacities are fully employed and imperfectly substitutable. Demand for capital makes a distinction between “old capital” and “new” capital. The model thus integrates the notion of vintage capital, to distinguish the process of allocating capital already installed, from that resulting from contemporary investment (putty-semi-putty production function). “New” capital can be allocated more flexibly than “old” capital. It substitutes for other types of capital more easily (land, hydro-electric capacities). Accelerating investment therefore strengthens the capacity for adjustment of the productive sector to changes in relative prices.

4. Income from labor and capital accrue to the representative household. This income is allocated to consumption and savings using the Extended Linear Expenditure System (ELES) specification. Household demand is derived from maximizing the utility function, subject to the constraints of available income and consumer price vector. Household utility is a positive function of consumption of the various products and savings. Income elasticities are
differentiated by product. The calibration of the model determines a per capita subsistence minimum for each product, which will be consumed whatever the price and the income of the households, while the remaining demand is derived through an optimization process. The subsistence share in the consumption of basic goods is higher than in the consumption of luxury goods. With lower disposable income, the households’ savings rate declines to protect subsistence consumption. Government and investment demands are disaggregated in sectoral demands once their total value is determined according to fixed coefficient functions.

5. **The model assumes imperfect substitution among goods originating from different geographical areas.** Import demand results from a CES aggregation function of domestic and imported goods. Export supply is symmetrically modeled as a constant elasticity of transformation (CET) function. Producers decide to allocate their output to domestic or foreign markets responding to relative prices.

6. **Several macro-economic constraints are introduced in this model.** First, the small country assumption holds, the Ghanaian economy being unable to change world prices; thus, its imports and exports prices on world markets are exogenous. Capital transfers are exogenous as well, and therefore the trade balance is fixed, so as to achieve the balance of payments equilibrium. Second, the model imposes fixed real public expenditures, to reflect the Government’s choice of delivering a given amount and quality of public services and ability to borrow. Tariff rates for electricity are exogenously set, and thus consumer subsidies endogenously cover the difference between prices and costs. Tax rates and ODA are exogenously determined and thus government savings are residually determined. Third, investment is set by the availability of savings, the latter originating from households, Government and abroad.

7. **The dynamic path of the model strongly results from this savings-investment rule:** a change in investment influences physical capital accumulation in the following period. Land and informal labor supplies also respond favorably (but moderately, with elasticity of 0.1 and 0.2 respectively) to their remunerations. Total factor productivity responds positively (with an elasticity of 0.1) to the ratio of exports over GDP. Population and total labor force growth are set exogenously, as well as hydro-electric capacities.
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