

REVENUE MANAGEMENT IN THE EXTRACTIVES SECTOR

Keynote paper 2

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Acronyms and abbreviations

AfDB	African Development Bank
CABRI	Collaborative Africa Budget Reform Initiative
EITI	Extractive Industries Transparency Initiative
EU	European Union
GDP	gross domestic product
GNI	gross national income
HIPC	heavily indebted poor countries
ICMM	International Council on Mining and Metals
IMF	International Monetary Fund
MTBF	medium-term budget framework
NBIM	Norges Bank Investment Management
NCS	Norwegian Continental Shelf
NDA	non-disclosure agreement
NOC	national oil company
NPD	Norwegian Petroleum Directorate
NRGI	Natural Resource Governance Institute
OPM	Oxford Policy Management Ltd
O&M	operations and maintenance
PFM	public financial management
PIH	permanent income hypothesis
PPP	purchasing power parity
RRA	Resource Revenue Account
SWF	sovereign wealth fund
TSA	Treasury Single Account
UAE	United Arab Emirates
UK	United Kingdom
USA	United States of America

Executive summary

For many countries, the blessing of natural resources has been perceived as a curse, as demonstrated by economic stagnation, squandered revenue and creeping corruption. This paper addresses the challenges governments in African resource-rich countries face in transforming the revenue that accrues to them from natural resources – whether through taxes, production shares, royalties or dividends – into higher living standards for their citizens.

The paper has been prepared to inform a CABRI sector dialogue that will discuss policy decisions and administrative processes needed to manage revenue derived from the extractives sector, and the associated requirements for good governance and sound public financial management. It focuses mainly on minerals and hydrocarbons (oil and gas) when referring to the extractives sector. This executive summary of the paper highlights the unique challenges posed by resource revenue, identifies key questions for governments, and distils the paper's main recommendations.

Extractives revenue and the budgeting process

Countries anticipating extractives revenue would benefit from a long-term fiscal strategy that allocates revenue among competing alternative uses, informed by realistic projections of reserves, costs and rates of production, world prices and the fiscal regime's capture of future revenue. As extractives revenue can be a significant contributor to total government revenue, it should be considered alongside other revenue and, ideally, be integrated into the broader budgeting process. This can be complex, as there are demands that a portion of the revenue be allocated along spatial lines directly to the regions where extraction takes place.

This 'allocative' tension has to be addressed within the broader budgeting process, as there are many other stakeholders, such as national extractives companies (e.g. the national oil companies), demanding 'separate' attention and which expect exclusive treatment when decisions are made as to how revenue is allocated. The best way to deal with these various demands is to have a transparent national fiscal policy that addresses the national economy and the deficit, which affects all citizens, and how this deficit will be equitably funded. Revenue can be saved for future spending on wealth creation and stabilisation, amongst other activities – rules in this regard should be clear and enforced. The budget documents should set out the full contribution of extractives revenue towards financing the budget, in order to properly inform citizens about the merits of the extractives sector.

The primary challenge for revenue managers is to determine the value of the revenue that should be anticipated (in other words, revenue forecasting). This is notoriously difficult, as the methods employed to determine the value of the sub-soil resource are not without technical risks, despite the level of accuracy that might be demonstrated. Once extracted, resource prices on the open market are equally difficult to predict and exhibit severe volatility over the long term. These challenges point to the need for tight fiscal control that limits politicised discretionary spending, where fiscal policy priorities may include the incorporation of resource revenue into the medium-term planning and budgeting systems.

This usually entails incorporating planned use of resource revenue into the medium-term budget framework (MTBF), a strategic budgeting exercise that governments use to reconcile aggregate fiscal discipline with public expenditure plans. While their precise form varies widely, the general purpose of MTBFs is to guide annual resource-allocation processes by linking the policies and plans that line ministries produce with the revenue and expenditure forecasts that finance ministries produce, while also being flexible enough to access stabilisation funds to balance the budget during external shocks, such as a global resource price collapse.

Good practice in public investment planning involves the establishment of an uncompromisingly professional and depoliticised approach to the appraisal of every project, along with strengthening treasury management and budget execution systems to prevent expenditure overruns. Revenue managers, therefore, need to take a long-term and generally conservative view on revenue forecasts, treating unexpected revenue as a windfall and avoiding the temptation to channel it into short-term spending. No amount of control is of much use if enforcement is not visible; breaches of the rules should attract severe penalties, and it is incumbent on revenue managers to ensure a basic level of transparency through robust accounting and auditing procedures.

Managing revenue volatility

Revenue volatility is a major concern for most countries that are dependent on extractive industries. Volatility is a function of uncertainty in determining the quality and quantity of the resources, uncertainty regarding the potential price that might be achieved on the global market to monetise the resources, and the fiscal environment that determines how much of the resource revenue eventually accrues to the government's coffers.

Volatility makes the planning and budgeting of government expenditure inherently more difficult: there is a risk of overspending on poorly planned projects in boom times, and harsh cuts when prices or production fall. Volatility in government spending can damage long-term economic growth by causing instability in exchange rates, inflation, investment patterns and private sector activity levels. The literature, and experience in certain countries, suggests that the most feasible approach for the majority of governments is to use fiscal policy in a counter-cyclical manner, saving revenue in boom times as a buffer against shocks. However, in the past, many resource-dependent countries have exacerbated instabilities by operating fiscal policies in a pro-cyclical manner, spending recklessly in boom periods and having to introduce severe austerity as prices trend downwards, which damages confidence and retards growth.

The current debate is focused on whether or not governments should introduce fiscal rules, and whether such rules are actually achieving the intention behind them – to bring stability to the economies of countries dependent on resource revenue. The literature, especially from the International Monetary Fund (IMF), suggests that fiscal rules are beneficial, as they impose constraints on ill-informed discretionary expenditure underwritten by volatile resource revenue and have the potential, if enforced, to promote a culture of counter-cyclical spending as a buffer against future revenue instability. The anticipated challenge is what rules are the best to use – rules with the objective of balancing the budget over an economic cycle have been found to provide the greatest degree of economic stability. Some commentators, however, point to political and economic problems inherent in establishing and maintaining binding fiscal-rule constraints over budget decisions in developing countries with pressing developmental needs.

The challenge with any rule is the extent to which it can be enforced. This is a very contentious issue, as governments generally seek as much discretion as possible to spend revenue, resource or otherwise, as they see fit against the election promises to the electorate. In selected countries the fiscal rule has been set up as a legally binding instrument that prevents the use of saved revenue beyond certain limits that have proved to be valuable in times of political and economic turmoil when pressure to spend was withstood, resulting in a more stabilising response to external shocks like the financial crisis in 2008.

Sovereign wealth funds

Finally, the matter of whether or not to establish an SWF has become the source of much debate and dialogue, especially in sub-Saharan Africa where several such funds have been created or are anticipated in the future. The core purpose of an SWF is to save revenue for future spending. Various funds currently in existence have a wide range of different and often complex objectives, but there are two key reasons for using an SWF to postpone spending – intergenerational equity and counter-cyclicality – both of which defer spending to build up cash reserves that can be used to fund future generational needs or to stabilise government spending in response to the boom/bust dynamic of global commodity cycles.

SWFs can take many forms, from pension funds in Norway to reserve funds in Russia and stabilisation funds in Chile. Setting the fiscal rules governing SWFs is an especially complex matter with divergent views, and the reader would benefit from a perusal of the relevant section of this paper. General trends suggest that usually SWFs are created by governments that have a budgetary surplus and little or no international debt. For countries encumbered with significant international debt, the alternative is either to immediately consume the revenue or to build up surplus liquidity in the central bank. Where the assets are held by the central bank, it is sometimes difficult in practice to distinguish between the SWF and the surplus international reserves held for monetary/liquidity purposes, and rigorous systems are required to maintain transparency in the spending of SWF funds, especially where there is a strong fiscal rule in place that commands compliance.

Conclusions

Bearing these challenges and possible interventions in mind, the paper examines a range of questions commonly faced by governments in anticipating and managing extractives revenue. The questions below have no generically ‘correct’ answers, as they depend on the particular circumstances of time and place. The comments offered in this paper are not intended to be exhaustive but rather seek to prompt rigorous dialogue at the workshop.

- *Once resources are discovered, should expected future revenue be brought forward by borrowing?* If money is to be invested productively, then it is better invested sooner rather than later. However, governments are faced with the dilemma of what to spend the borrowed money on.
- *When revenue begins to accrue, how much should be spent and how much saved for the future?* Two considerations are pertinent here – utilising revenue in ways that benefit future generations as well as the current generation, and the capacity of the economy to absorb additional spending without leading to the Dutch disease.
- *Should borrowing be used to smooth volatility in revenue?* In theory, borrowing could also be used as a tool to smooth volatility – borrowing when prices are low, and repaying when prices are high, if governments have reliable revenue forecasting to underpin sustainable debt servicing in the long term.
- *How much should be spent on current needs and how much should be invested in economic diversification?* Over and above immediate development demands, some portion of revenue should be devoted to investing in diversification of the economy to create sustainable long-term growth.

- *Should resource revenue be managed through normal budgets or special funds?* Some argue that in countries where existing public financial management (PFM) systems lack integrity, special mechanisms for spending resource revenue should be created. However, creating new mechanisms reduces the impetus for making the necessary reforms to wider systems.
- *Should resource revenue be earmarked for specific purposes?* Earmarking resource revenue is as source of contention amongst PFM practitioners. It can guarantee a minimum level of funding for specific high-priority areas (while reducing flexibility and undermining accountability) but can be offset simply by shifting resources to other areas.
- *Should a country create an SWF?* Many countries channel some resource revenue into overseas investments through SWFs, to create long-term returns and mitigate the risks of the Dutch disease. However, SWFs can have high administrative costs and, where resource revenue is relatively small, it may be better instead to accumulate revenue in the foreign exchange reserve account of the central bank.

While the answers to the above questions will vary from country to country, the paper also identifies some recommendations that apply to all developing countries with resource revenue.

- Design long-term extractives and fiscal strategies, for the production of resources and the subsequent use of the revenue respectively, which address the problems of volatility and exhaustibility of revenue. Implement the strategy for use of revenue through medium-term budget frameworks that align annual spending plans by ministries with overall fiscal discipline, including adherence to strict fiscal rules.
- Set out formal fiscal rules imposing multi-year constraints on overall government expenditure. To guard against the political pressures that create temptations to break these rules, implement meaningful enforcement mechanisms, publicise the rules widely and apply them transparently.
- Create rigorous and depoliticised procedures to appraise proposals for new spending. Ensure that infrastructure projects (such as new hospitals) make allowance for the long-term operations and maintenance costs (such as drugs and nurses' salaries) to which they will give rise. Ensure that fiscal planners and sectorial planners work closely but do not displace each other, as technical expertise for operational planning in a sector may well not be a core strength of the finance ministry.
- Invite independent external auditors to promote transparency and accountability. This is especially necessary given that the complexity of transactions associated with natural resource revenue flows requires specialist skills that are often not possessed by tax officials in developing countries.

The sector dialogue, for which this paper will be a key input, will be a useful exercise in determining the relative importance of each of these issues, as well as identifying additional issues that may not have been covered in sufficient depth here.

1. Introduction

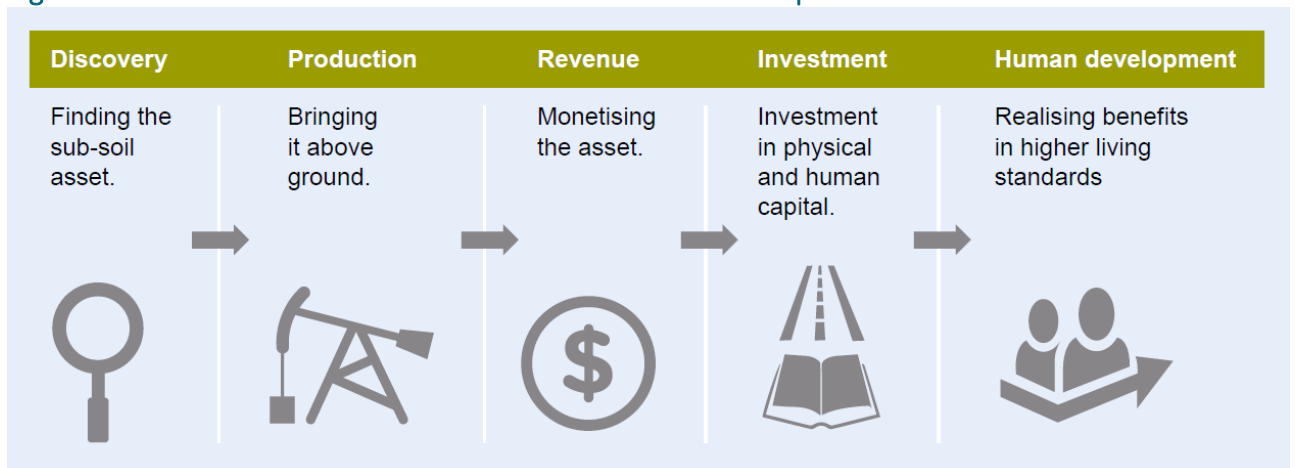
New revenue from the extractives sector represent an important opportunity for African countries to transform natural resources in the ground into stronger economic and human development. However, history has demonstrated that the link between natural resources and development is far from automatic. For many countries, the blessing of natural resources has become a curse, resulting in economic stagnation, waste and corruption. The challenges in transforming natural resources into higher living standards are essentially those of good governance: the complexity of the sector requires strong legal frameworks, regulation and administrative processes.

Natural resources in the ground are a national asset, as they have the potential to yield a future revenue stream for the government. As depicted in Figure, once the resources have been discovered, the process of transforming them into further human development involves three steps:

1. The sub-soil asset needs to be extracted (i.e. pumped or dug up) and transformed into a commodity above ground.
2. The commodity is then monetised (i.e. processed and sold, turning it into money). The operator that has invested in and managed this transformation is appropriately remunerated, and a portion of the cash also accrues to the government through, for example, taxes or asset shares.
3. The cash is then used to finance public spending, which turns the money into physical public capital and/or human capital.

Such transformation involves a sequence of policy choices and technically complex legislative, regulatory and administrative processes spanning several years.

Figure 1: Asset transformation – from sub-soil assets to development outcomes



Source: Dietsche et al. (2013)

Various channels exist through which the activities of an extractives sector can have an impact on the national economy. This paper focuses on just one: the impacts that arise from governments receiving and spending the revenue that accrues from the sale of natural resources, and the associated public financial management (PFM) challenges. The paper was prepared to facilitate a sector dialogue on the

management of revenue derived from the extractive industries sector.¹ It focuses on issues that have particular relevance in Africa, and which were selected to help define the ground that will be covered in a two-day interactive workshop at which government officials will discuss the challenges associated with the extractives sector and share ideas on effective ways to manage them.

The rest of this paper is organised as follows:

- Section 2 identifies four core challenges defining the range of policies that governments need to consider when managing extractives revenue;
- Section 3 provides a framework for PFM issues by identifying high-level strategic questions;
- Section 4 looks at the issues involved in integrating extractives revenue into mainstream budget processes;
- Section 5 examines the challenges to effective PFM that arise due to the inherent volatility of extractives revenue and whether governments need formal fiscal rules to help them manage extractives revenue;
- Section 6 discusses the roles that can be played by Sovereign Wealth Funds (SWFs) and whether they are suited to the circumstances of sub-Saharan Africa; and
- Section 7 presents some concluding remarks.

The paper has been prepared to inform the CABRI dialogue regarding appropriate natural resource revenue management, with specific reference to the extractives industries, which is especially topical in the current commodity price retreat that has left economies overly reliant on resource revenue reeling in the face of declining revenue. The paper is intended to outline pertinent issues, present informed options for addressing them and, generally, provide a balanced discourse on the complex issues at hand.

¹ For the purposes of this paper, the 'extractive sectors' will be restricted to minerals, oil and gas.

2. Key challenges of extractives revenue management

Government revenue generated directly from the exploitation of natural resources can take a variety of forms, including production shares, royalties, taxes, dividends and signature/discovery bonuses. If managed effectively, the additional fiscal space generated by this increased revenue can be used to promote growth, increase employment and improve overall living standards. However, in numerous cases, poor management has led to economic stagnation, squandered revenue and pernicious corruption, perpetuating the notion of the ‘resource curse’, by virtue of which countries with abundant natural resources may often achieve worse economic and development outcomes than those without.

Four challenges define the range of policies governments need to deal with extractives revenue:

- The Dutch disease or ‘resource curse’ (explained more fully in Box 1) happens when a large increase in resource-funded spending pushes up domestic prices and the real exchange rate, making it harder for other sectors to compete on international markets. When a country’s economic gains from its natural resources are offset by losses in other sectors, economic development becomes unsustainable after natural resources are depleted. To avoid the Dutch disease, the composition and profile of expenditure must be within the economy’s absorptive capacity.
- Revenue is temporary and its sources exhaustible because it comes from the transformation of a non-renewable asset. To avoid an abrupt fiscal adjustment once resources are depleted, and to enable future generations to benefit, a portion of revenue needs to be saved for future use or invested in assets that will generate future revenue. Resource exhaustibility calls for a long-term fiscal strategy, implemented through robust medium-term expenditure planning and execution systems.
- A high level of resource revenue volatility is driven by commodity price volatility (as discussed more fully in Section 5), which can lead to waste, boom-and-bust cycles and excessive borrowing. A common experience in resource-producing countries is that initially high revenue fuels high public spending, then a decline in international prices requires sharp budgetary adjustments, and this leads to the temptation of unsustainable borrowing. Fiscal policy needs to be flexible to deal with such external shocks.
- Governments can become less accountable to their citizens when they rely on resource revenue, which can be captured by elites. Resource revenue reduces incentives to build the strong institutions necessary for broader wealth creation (Moore 2004). Developing and maintaining strong PFM processes and systems that ensure transparency and accountability for the use of funds can go some way to alleviating such problems.

Box 1: What is the Dutch disease?

The phrase ‘Dutch disease’ was coined by *The Economist* in the 1970s to describe the decline of the manufacturing industry in the Netherlands after the discovery of natural gas in the 1960s.

A natural resource boom typically leads to a large inflow of foreign currency, first as investment in the exploitation of the resource, and later in the form of export revenue. If this foreign currency is

spent domestically, it may drive up the nominal exchange rate (if it is flexible) and/or local prices, as demand for labour, housing, land and locally produced goods outstrips the ability of the local economy to expand supply – in other words, demand may outpace the economy’s absorptive capacity. If this happens, it will also drive up the real exchange rate, a measure of how many units of a good produced in one country can be exchanged for an equivalent good produced abroad.

A higher real exchange rate makes it harder for other, non-natural-resource sectors of the economy to compete internationally, as it makes their exports more expensive. In consequence, a country’s economic gains from its natural resources may be offset by losses in other sectors of exports and associated government tax revenue. These losses can weaken the drivers of long-run growth that are necessary to sustain economic development once the natural resources have been depleted. Nigeria’s experience illustrates the dangers of the Dutch disease. The Nigerian real exchange rate rose by 55 per cent between 1974 and 1980, exports became less diversified and the economy more dependent on oil. When oil prices fell in the 1980s, it led to debt that undermined the country’s development. Despite a substantial oil windfall between 1970 and 2000 – some US\$350 billion – Nigeria’s GDP per capita (PPP) stagnated, its poverty rate doubled and inequality widened.

Source: Henstridge, Travis & Roe (2015); Okonjo-Iweala (2008); Sala-i-Martin & Subramanian (2003)

A vast body of literature on the ‘resource curse’ recommends overcoming these four challenges through prudent macroeconomic and fiscal management and strengthening the institutional framework, particularly PFM systems. This literature addresses questions such as:

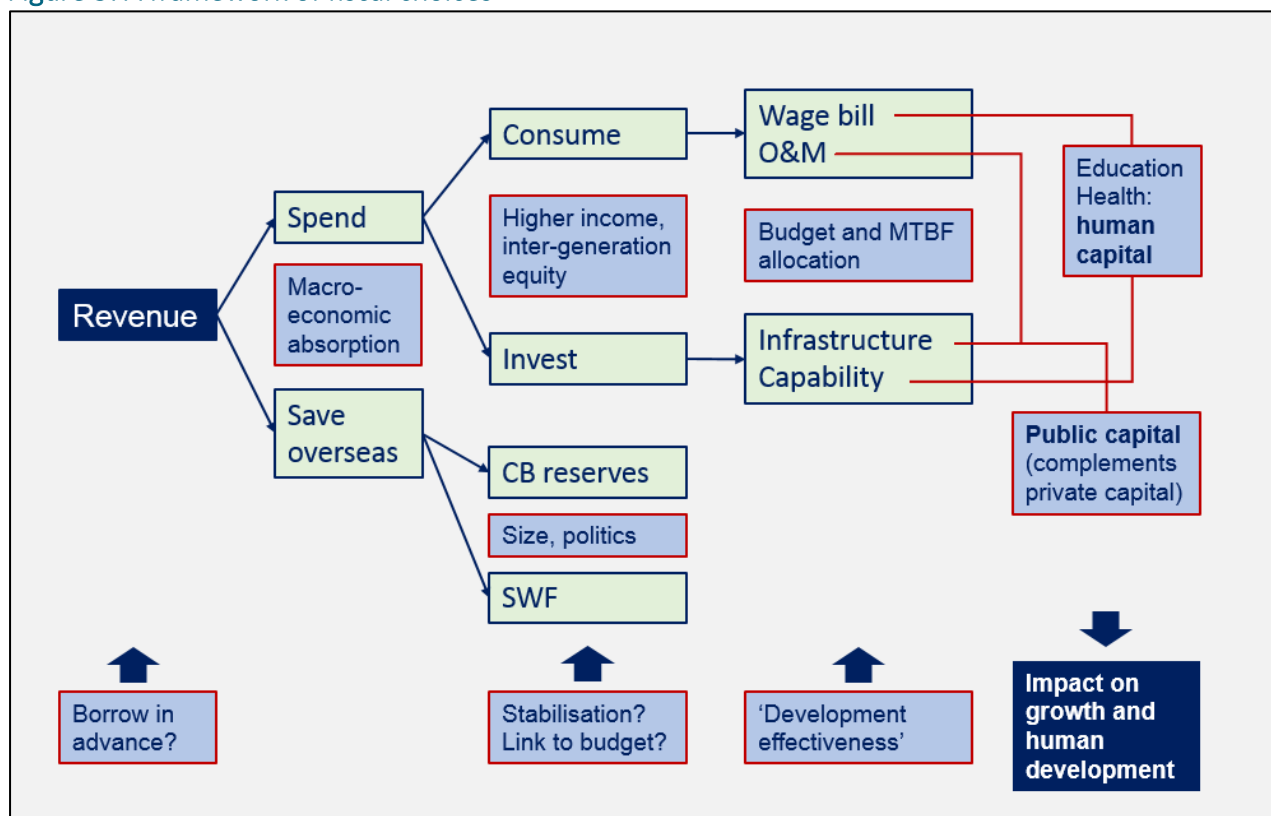
- *What proportion of revenue should be spent immediately and what proportion should be saved for the future?* The answer will depend on judgements of the economy’s absorptive capacity, as well as the intergenerational equity concerns raised by the exhaustibility challenge (as discussed in Section 3.2).
- *What should the composition be of those revenue that are spent immediately?* In other words, should governments spend on immediate development needs or rather invest in developing a new sector/industry that will generate revenue for the government when the natural resources are exhausted? In most circumstances, spending needs to have an impact beyond the short-term, so that countries have something to show for it once the resource is exhausted. The composition of expenditure also helps determine risk of the Dutch disease (as explored in Section 3.3).
- *Should expenditure funded by extractives revenue be integrated into the mainstream budget process, and how?* This question relates to the challenge of accountability and transparency in the government’s PFM system (as addressed in Section 4).
- *What options do governments have for stabilising expenditures in the light of substantial revenue volatility?* Various mechanisms exist to smooth the overall expenditure of revenue derived from the extractives sector. However, a prudent option is to follow a counter-cyclical spending approach (as elaborated in Section 5).
- *Of the revenue that is saved for the future, where and how should funds be held and invested?* The SWF is an increasingly popular option for resource-rich countries. How to transparently

safeguard revenue and invest it appropriately in SWFs and other alternative funds is addressed in Section 6.

3. A framework for the management of extractives revenue

The fiscal policy decisions that link new revenue and development outcomes are summarised in Figure 5, which outlines the high-level choices that need to be considered (green blocks) and important concerns in making these choices (blue blocks). The first choice – which needs to be made even before revenue begins to accrue – is whether to access the expected revenue in advance by borrowing against it. However, once revenue begins to accrue, the second choice that governments then need to exercise is what to do with it – how much of that revenue to spend immediately and how much to save, how to save it and how much to spend on consumption versus investment – keeping in mind that some of the revenue will need to be used to service any advance borrowings. Consumption could include, for example, an increase in public sector salaries, or spending on operations and maintenance (O&M). Investment could include improving infrastructure or public sector capabilities (e.g. through more training schools). This section addresses each of these considerations and reflects on the advantages and disadvantages of possible approaches.

Figure 5: A framework of fiscal choices



Source: Adapted from Henstridge et al. (2015)

3.1 Borrowing in advance: economic sense or a risky indulgence?

When there is a secure expectation that extractives revenue will materialise in future years, there is an economic case for borrowing to bring expenditure forward. Money has a time value, so it can be argued that effective public spending is better increased sooner rather than later. However, borrowing to bring spending forward entails a burden of repayment in the future, with associated interest costs.

Usually a ‘debt sustainability analysis’ is conducted to assess whether additional debt can be expected to be repaid without an excessive burden on public finances.

The economic argument hinges on whether debt-financed expenditures will increase economic growth, and hence the tax base, by enough to justify the increased debt servicing costs. This depends largely on the cost of borrowing, the existing level of debt and the productivity or otherwise of the uses to which borrowed funds are put (Henstridge et al. 2015).

Even if the economic case is weak, political incentives often lead to pressure for spending not to be delayed, as the public expects immediate results from resource extraction. Here there is a strong rationale for caution: revenue brought forward for political reasons may be spent to meet current political goals rather than longer-term, more productive objectives. Box2 below tells a cautionary tale of how excessive borrowing after an oil discovery can yield undesirable results.

Box 2: Managing oil revenue in Ghana

Before the large Jubilee oil field was discovered in 2007, Ghana had a good record of macroeconomic and fiscal stability. However, from 2011 onwards, the fiscal position quickly deteriorated. While tax revenue stayed constant at 18 per cent of GDP, government expenditure increased from 20 per cent of GDP in 2011 to 27 per cent of GDP by 2013. In just five years, from 2009 to 2014, public debt increased by five times as much as it had earlier been reduced by heavily indebted poor countries (HIPC) relief.

Ghana had sound arrangements in place to manage the new oil revenue: both the Ghana Petroleum Revenue Management Act and the Petroleum Commission Act in 2011 were based on good international practice. However, the legislation lacked effective enforcement arrangements. Most of the increased expenditures went on recurrent costs, such as wages and interest payments, rather than boosting investment and growth – and early-stage revenue was low, with a long lag before the expected peak. With foreign exchange reserves declining, the government apparently violated its own legislation to draw down from the stabilisation fund, even though oil prices were still high.

Sources: IMF(2014); Bawumia (2014)

3.2 Spending today or saving for tomorrow?

Once revenue begins to flow, the government needs to decide how much to spend immediately on pressing economic and social needs and how much to save for the benefit of future generations, who would then presumably take ownership of how saved funds get spent in the future. Two considerations are highlighted in the literature: intergenerational equity and the absorptive capacity of the economy.

Literature on intergenerational equity has focused on the ‘permanent income hypothesis’ (PIH) – the idea that value derived from the extraction of exhaustible natural resources should be turned into a permanent income that will be shared by and benefit both current and future generations equally (see, for example, Barnett & Ossowski 2003). The PIH involves limiting total spending each year to the value of interest accrued on the total known resource wealth, whether extracted or not. Rather than a temporary inflow of resource revenue, this creates an increase in the level of annual expenditure that remains constant forever (Baunsgaard et al. 2012). By smoothing the consumption of the

resource windfall over time, the PIH also helps to avoid pro-cyclical fiscal policies and boom-and-bust cycles.

However, the PIH may make more sense in a wealthy resource-rich country (such as Norway) than in a developing country. As Collier & Venables (2008) argue, in most developing countries, future generations are likely to be significantly better off than the current generation. Therefore, intergenerational equity may be served better by allocating a higher proportion of the revenue to the current generation.

Similarly, returns on public investment are likely to be higher in a developing economy – where capital is scarce – than in a mature economy such as Norway, where capital is abundant (Van der Ploeg & Venables 2011).

Any decision to increase public spending initially requires a consideration of the absorptive capacity of the economy, because an assessment of how well the economy is able to ‘absorb’ the impacts of increased resource revenue spending is a critical basis for any revenue management choices that result in ‘spending today’. As explained in Section 2 above, in many developing countries, rapid increases in public spending can cause the Dutch disease. The degree to which an economy will bump up against absorptive constraints will be determined by: (a) the magnitude of resource revenue relative to the size and maturity of the economy; (b) the scale of existing financial flows into and out of the country; and (c) the import content of expenditures undertaken.²

There are no hard rules for deciding on the exact proportion of revenue to spend now versus saving for the future. The challenge for the government is to assess the rate of additional spending at which the Dutch disease effects begin to materially offset the economic and social benefits gained from increased public expenditure (Henstridge & Page 2012).³ This is not an exact science but rather a judgement call, involving political processes and societal preferences. It is precisely this ‘not an exact science’ warning that makes budget planning and revenue management choices so challenging – the choices are often fairly straightforward but the ‘devil is in the detail’ used to determine the absorptive capacity of the economy. It is not a question of whether to ‘spend’ or ‘not to spend’ today, in a developmental context, but rather of balancing the amount to be spent with the developmental priorities at a rate that does not ‘swamp’ the economy resulting in symptoms of the Dutch disease. For example, in countries where developmental imperatives are justified and reasonable, developmental spending should take place but be spread over a longer period of time so as to not outstrip the capacity of the economy to ‘absorb’ the investments – in other words, spending less each year over a longer period but still spends the full developmental budget over the extended period. The challenge for governments is that the sophistication of policy/revenue management choices must

² A pattern of spending that has a high import content, or which eases domestic supply constraints, would accommodate a faster increase in public spending than would spending focused on goods and services that are supplied domestically (Adam & Bevan 2006). Over time, domestic supply constraints can be alleviated by means of appropriate public policies and public investment (in roads and power, for instance) that complement and support domestic private investment. The policies required to support productive capacity and alleviate supply constraints include reducing barriers to competition, avoiding price distortions and mitigating risks to private investment.

³ The concept of ‘rate’ – a change as a function of time – also alludes to issues of timing, and while it might seem obvious, should be considered, as absorptive capacity can change over time and, therefore, dynamically influences and informs public spending choices in this regard.

be explained to the broader society. In the absence of a robust communications strategy, demands for increased current spending will go unchecked and the political pressure to make poor choices will be difficult to withstand. The integration of a communications strategy with the revenue management strategy and related rules and regulations is touched on again in Section 4.5.

3.3 Balancing the composition of expenditure

The composition of expenditure speaks to whether countries should spend on immediate societal needs, such as cash transfers or health and education services, or rather use the same resources to develop a new non-resource sector that will continue to generate revenue. In the case of the latter, governments can also support such objectives indirectly, by investing in a better enabling environment for the growth of the non-resource economy (e.g. by developing infrastructure and skills). This will help to create jobs and/or generate higher incomes and, consequently, future tax revenue that will ensure a sustainable public finance position after natural resources have been depleted.

Given the finite nature of natural resources, investing in the non-resource economy has an important role to play in most circumstances. If alternative income-generating assets have not been created by the time natural resources have been depleted, the economy's dependence on the extractive resource becomes progressively less sustainable, as illustrated by the case of Nauru (see Box 3).

The composition of expenditure may be influenced by the expected longevity of natural resources.⁴ Thus, governments that anticipate extremely long production periods may be able to take a more relaxed view of the need for economic diversification, allocating more revenue to immediate needs. At the same time, recent evidence shows this option to be unwise because of unexpected price volatility; countries such as Nigeria and Angola, which have long production periods for oil, are now in financial difficulties due to record low oil prices. Moreover, once a country is dependent on natural resources, it becomes more difficult to change the structure of economic activity, suggesting that some attention to economic diversification is desirable even in these cases.

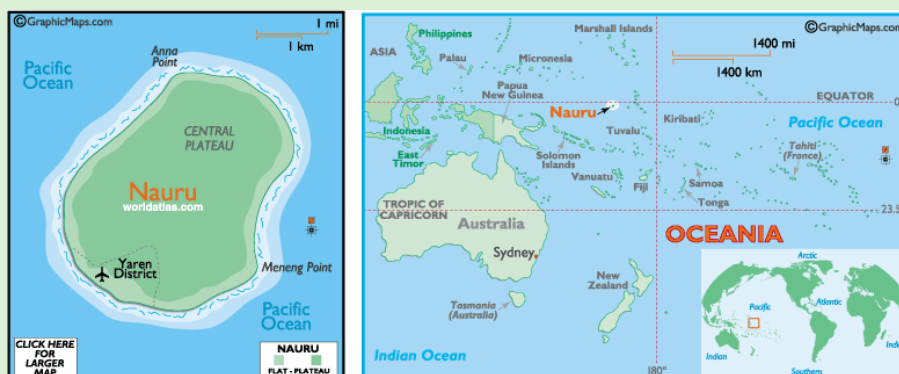
Where a new natural resource is likely to have a more limited life – a generation or less – it is especially important to prioritise expenditure that can stimulate growth in non-resource sectors. To do so, governments may need to resist the inevitable political pressures to realise the benefits of natural resources in the short term by meeting immediate needs.

⁴ An important consideration that is not immediately obvious or 'directly' linked to revenue management, but has a potentially significant impact on revenue, is the more techno-economic aspects of reserve (or 'field' in the oil and gas sector) development plans that determine the rate of production and ultimate resource depletion. The Norwegian Petroleum Directorate (NPD) excels in managing development and production in a manner that seeks to prolong the steady state of production through the sophisticated assessment of field development plans (see also Box 4 on National Oil Companies).

Box 3: Nauru and the need for diversification

The example of the Republic of Nauru points to the strategic imperative of using resource revenue to diversify the economy. Nauru, formerly known as Pleasant Island, is a country in Micronesia in the Central Pacific.

With rich deposits of phosphate near the surface, which allowed for easy strip mining operations, Nauru boasted the highest per-capita income of any sovereign state during the late 1960s and early 1970s.



Nauru established a trust to manage its wealth, but it diminished in value, and while some secondary phosphate mining has become possible, the revenue is on a much smaller scale than previously. The island did not invest significantly in the development of potential alternative industries that could have diversified its economy, such as marine products or 'high end' tourism. Such options are now limited, as the island's environment was seriously harmed by mining. Nauru is today largely dependent on Australian aid, benevolent trade and operating an Australian detention camp for asylum-seekers.

Source: Doherty (2015); CIA factbook (2015); BBC (2015)

4. Extractives revenue and the budget process

4.1 Introduction

Unlike other forms of economic activity, the extraction of natural resources and the management of the associated revenue rarely intersect with the daily lives of ordinary citizens beyond the immediate location and operations of an extraction project.⁵ Therefore, the chain of decisions and actions taken by the government can be more difficult to monitor, which inevitably provides opportunities for corruption and misuse of revenue. The usual channels of public accountability are often missing in resource-dependent countries, compared to countries where the government relies for revenue on taxing its citizens.

The emerging body of literature on extractives revenue management, consequently, emphasises the importance of implementing robust and transparent PFM systems. Some argue that weak PFM systems should be bypassed by special operational mechanisms, such as natural resource funds, to manage resource revenue. However, Dabán and Hélix (2010) note that where such separate

⁵ Local interactions can be positive – as is the case with local economic development impacts – or negative, such as where conflicts arise over use of land. These may not be immediately apparent: for example, in pastoral farming areas, livestock are moved around according to the prevailing climate, so a site that may not initially impact on rural populations could still do so in the future. This was part of the reason for the conflicts around the location of Tullow Oil exploration rigs in Turkana in northwest Kenya.

mechanisms have not been carefully designed and implemented, they have led to fragmentation and delay in budgetary processes, dis-incentivised reform and, ultimately, reduced efficiency in public spending.

Hélis and Sánchez (2013) argue that good practice suggests that frameworks for managing extractives revenue should be aligned with existing budgetary institutions, rather than bypassing them, to maintain the integrity of the overall budget process. Arguments in favour of integrating extractives revenue into established processes for budget preparation and execution include the following:

- extractives revenue can be a significant contributor to total revenue and, therefore, should be considered alongside other revenue;
- there is often a regional dimension to extractives activity – transfers to resource-producing jurisdictions at the sub-national level are, consequently, common and need to be properly integrated within the budget;
- autonomous agencies, such as national oil companies (see Box 4) and national mining companies often play an important role in extractives policy, and their financial activities need to be reflected in the budget system; and
- if budget documents detail the full contribution of extractives revenue towards financing the budget, citizens can be better informed about the merits of the extractives sector – this involves setting out:
 - the value of the ‘non-resource deficit’ (i.e. the difference between total non-resource revenue and total expenditure);
 - the portion of resource revenue that is to be used to finance this deficit; and
 - the annual amounts of resource revenue that are to be deposited in and/or withdrawn from other accounts (e.g. a stabilisation fund or reserves account).

Countries anticipating extractives revenue need to formulate a long-term fiscal strategy to allocate such revenue among competing alternative uses (Baunsgaard et al. 2012). This strategy must be informed by realistic projections of reserves, costs and rates of production, world prices and the fiscal regime’s capture of future revenues. Subsequent reform priorities include incorporating resource revenue into medium-term planning and budgeting systems, strengthening treasury management and budget execution systems to prevent expenditure overruns, and ensuring a basic level of transparency through robust accounting and auditing procedures. The following sections consider each of these issues in turn.

Box 4: National oil companies and strategic policy choices

Governments have strong political incentives to control the petroleum sector, given its international political, military and financial importance. National oil companies (NOCs) provide governments with a powerful means to influence strategic decisions regarding matters such as resource development and depletion rates, employment, scope of activities, product prices and subsidies, and broader environmental and social activities. However, a balance must be found between high revenue capture by the state and longer-term investment, which, in turn, will determine the future tax base.

Two main variables need to be considered. These are shown in Figure 3, which is based on a framework proposed by the Natural Resource Governance Institute. One is the share of government revenue accounted for by NOCs. States where this is high – such as Azerbaijan, Congo-Brazzaville and Angola – are advised not to leave too much autonomy to the company, due to the risk of economic disruption should the revenue be mismanaged. For example, the IMF uncovered in Angola an ‘unexplained residual’ in state accounts initially measured at more than US\$31 billion between 2007 and 2010, equivalent to a quarter of annual GDP, which had not been managed via ordinary PFM rules.

The other variable is the level of the NOC’s need for operational investments. Where this is high and the government budget is not dominated by the NOC’s revenue (quadrant I), the NOC can be treated much like a private entity. Where the NOC’s need for investment is high, but the government depends heavily on NOC revenue (quadrant II), the government needs to put in place checks and balances to ensure a middle ground is found between the coherence of its budget and the predictability of the NOC’s access to capital.

Figure 6: Determinants of revenue retention by the national oil company

Operational sophistication/ commercial investment needs	High	I. Highest justification for significant NOC revenue retention (e.g., Norway)	II. High justification for significant NOC revenue retention, but checks and balances are of heightened importance (e.g., Malaysia)
	Low	III. Reduced justification for significant NOC revenue retention (e.g., Ghana, especially before production began)	IV. Lowest justification for significant NOC revenue retention (e.g., Congo-Brazzaville)
		Low	High

Share of total government revenues coming from NOC activities

The role of the NOC and the relevant ministry in the development of projects and management of the petroleum sector, respectively, should be addressed carefully. In Norway, the NOC (Statoil, albeit partially privatised) and the ministry, through the Norwegian Petroleum Directorate (NPD), play different roles: the NPD provides policy/regulatory oversight of the NOC regarding longer-term regulatory matters and broader economic impacts related to resource developments on the Norwegian Continental Shelf (NCS).

On the NCS, this can result in development plans being ‘sent back to the drawing board’ if the NPD has determined that an alternative field development plan could result in a lower production peak but over an extended period, where the opportunity cost lowering the rate of production to push out depletion is less than the long-term discounted cash-flow benefits to Norway. The NPD has vast capacity and expertise to analyse the data provided, which points to an important opportunity to

strengthen knowledge linkages in resource-rich countries that are seeking to develop their extractives industry.

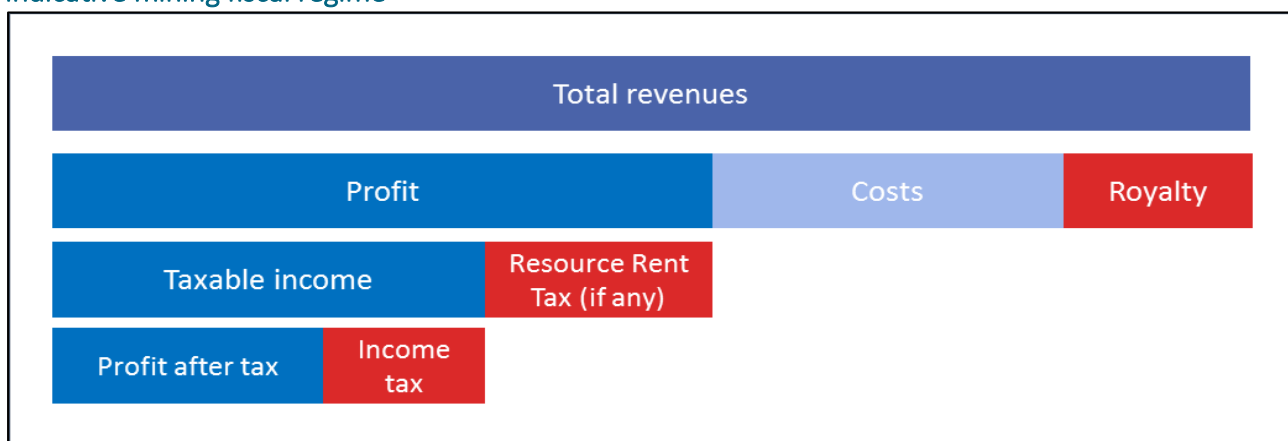
Source: Heller, Mahdavi & Schreuder (2014); Tordo (2011)

4.2 The challenge of forecasting revenue

Long-term planning, policy-making and budgeting decisions about how to use extractives revenue are complicated by two main factors:

- *Volatile world markets* have an impact on the revenue accrued by governments through two channels: directly through the fluctuation of total revenue from extraction; and indirectly through variable operational costs. As illustrated in red in Figure 7, both royalties, which are generally paid ‘upfront’ on gross production value, and profit taxes, such as resource rent taxes or income tax, are affected in a volatile environment. In other words, governments will take a knock on the various revenue streams and not just on royalties. This can significantly affect the budget.

Figure 7: Relationship between revenue shared by the government and investors in an indicative mining fiscal regime



Source: Watson & OpenOil (2015)

Resource uncertainty about the realisable magnitude of the extractives and the time profile of production, including its starting point,⁶ relates to two critical elements that impact on the cost of production, namely the resource characteristics (such as geology, quality and accessibility) and the available technology to enable efficient and cost-effective extraction/refining.

Techno-economic evaluation of extractives projects, therefore, requires a sophisticated understanding of commodity prices and projects' cost profiles, and how these compare with global cost curves and the tax regime, and the sensitivity of the project economics to each separately and cumulatively.

⁶ For example, the large gas finds in the Indian Ocean around Tanzania were known about in some detail as far back as 2011, but most major international oil companies, such as BG Group, are not expected to make final investment decisions about their Tanzanian projects until around 2017, and will probably produce no gas until around 2021 or even later.

Commercial mining and oil and gas companies have detailed models about the expected timing and magnitude of production, and consequent levels of payment to governments each year. However, they are typically unwilling to share this information with governments, which have to base their own projections on less complete or reliable sources of information (see Box 5).⁷ Good practice, therefore, has to involve making conservative estimates of price and production levels and building substantial flexibility into strategies. In many developing countries, insufficient capacity, in terms of both human and technical resources, negatively affects forecasting capability, especially where the information is not available in the public domain, and inadequate training results in weak analysis. Urgent attention should be given to data acquisition (possibly provided by extractives companies) and data analysis (enhanced by committed government capacity-building).

Data acquisition can be enforced through a robust regulatory framework that obliges all extractives companies to provide the necessary data as a condition of exploration and production agreements. Governments need to assess training needs and to build capacity for utilising the data provided, which need not be overly onerous as there are numerous organisations, such as OpenOil, that offer accessible and affordable financial modelling and project analysis courses, which are indispensable in enabling high-level policy and revenue management choices.⁸ Resource and revenue managers should be compelled to attend such courses, which aim to promote more rational asset assessments directed at more predictable fiscal regimes and reliable long-term revenue forecasting.

In the late 1960s, when oil was first discovered on the Norwegian Continental Shelf, Norway did not have the oil and gas sector skills it has today. It was only through involvement in all of the upstream areas that the human and technical resources were developed to the extent that Norway is today a global oil and gas player. This was achieved primarily by way of mandatory government equity participation (through Statoil, the national oil company) in offshore development, from exploration to data analysis to project development and, finally, production (Haum 2008). The important lesson to be learnt from Norway is that the authorities did not leave it to the market or the goodwill of investors to develop Norwegian expertise: state participation was compulsory in all offshore developments, and robust 'local content' obligations compelled foreign investors buy Norwegian goods and services (Trinidad Guardian 2007).^{9, 10}

⁷ A recent example of the problem of asymmetric information is Ghana, which began oil production in 2010. From 2011 onwards, the government assumed receipts from corporation tax within the annual budget; yet the first payments did not arrive until 2013, because the companies were utilising a provision within the tax code to offset profits against the initial capital costs incurred during the establishment of the project, which the government did not seem to fully anticipate.

⁸ See, for example, The Process of Public Interest Financial Modelling, the four main functions of which are analytical, educational, advocacy and government support to advance public policy design and more generally to improve the quality of information in the public domain. Available at <http://openoil.net/wp/wp-content/uploads/2014/09/Public-Interest-Financial-Modeling.pdf> [accessed 22 February 2016].

⁸ In 1972, Article 54 of a Royal Decree (which remained in force until Norway's entry into the European Economic Area in 1994) mandated the Norwegian government to pursue the goal of ensuring that Norwegian goods and services should receive preference provided they were shown to be competitive in terms of price, quality, schedule and service.

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¹⁰ The Norwegian Ministry of Industry established a Goods and Services Office as a watchdog agency to control and monitor international oil companies' contracting and procurement procedures. Local participation targets were set, monitored and reviewed, and the Office was responsible for monitoring the procurement practices

Box 5: Can commercial data be used to help guide governmental planning decisions?

Extractives companies do not want to share their projections on production levels and revenues because this sensitive information would be useful to competitor companies. Governments can require companies to provide “life of mine” feasibility plans, but cannot easily obtain the detailed data unless they are substantial owners in their own right or there are strictly enforced non-disclosure agreements (NDAs) between the companies and the government regulatory agencies. Norwegian Petroleum Directorate (NPD) in Norway, for example, is provided with detailed data both as a condition of licence and because NPD is trusted, thanks in part to powerful NDAs, to not use it for purposes other than to fulfil its regulatory role.

There are emerging examples of how company data can be made available for the purposes of government planning without the need for such levels of trust. In 2012, five mining companies in Tanzania provided aggregated or ‘anonymized’ versions of their detailed projections through to 2034 to an independent third party, who produced an aggregated version of those data that could be made public without revealing any commercially sensitive data about any one company.¹¹ Details of the methodology and results are published by the International Council on Mining and Metals (ICMM). Similar approaches have subsequently been used in Zambia (ICMM 2014) and Ghana (ICMM 2015) and in relation to the BG Group’s large potential investment in Indian Ocean gas (OPM & Uongozi 2013).

Box 6: Magnitude and timing of revenue – PFM essentials

Several parameters, such as the timing, scale and economic significance of new natural resource revenue, need to be reflected during budget preparation to frame the policy choices facing governments in the allocation of such revenue, in order to avoid the risk of rapid deterioration of the fiscal position and to maximise their impact on development and growth. Recent discoveries of natural resources in Mozambique, Tanzania, Ghana, Uganda, Sierra Leone and Liberia are expected to generate significant revenue; however, the potential transformational impact of this revenue is far less certain.

Studies indicate that resource revenue in the majority of the abovementioned countries will barely be able to compensate, in the near future, for their current fiscal deficits. This partly reflects the fact that peak revenue takes many years to materialise. In relative terms, they are projected to range from 1.9 per cent of GDP in Tanzania to 5.7 per cent of GDP in Liberia over the first ten years of production. On a *per capita* basis, the annual contributions from new natural resource projects

and, co-operating closely with international oil companies, for developing the local energy service sector. International oil companies operating in Norway were required to publish their tender schedules, and the Office’s role was to ensure that qualified Norwegian companies were included on the bidder’s list. The Office was also mandated to stimulate the local supply industry through joint ventures, augmented by encouraging research and development and technology transfer.

¹¹ In South Africa, a more downstream example is that of detailed company data regarding refinery efficiency and related margins being provided to an independent auditing firm, which produces a consolidated account for the Ministry of Energy to determine the regulated Import Parity Price for liquid fuels or the Basic Fuel Price, as it is known.

identified across these countries – on average during the first ten years of production – range from US\$20 to US\$29 per year in Tanzania, Sierra Leone and Liberia to US\$50 to US\$52 per year in Mozambique, Ghana and Uganda. Also, as shown in Table 1 and based on 2012 information, additional revenue is likely to be lower than or merely comparable to the current yearly fiscal deficit in the vast majority of these countries.

Table 4: Order of magnitude for extractives revenue (average, first ten years of production)

	2012 GDP per capita (US\$)	2012 fiscal deficit (% GDP, incl. grants)	Absolute value (US\$ billion)	% share of total revenues	% share of GDP (per cent)	Per capita (US\$)
Ghana	1 519	-12.0	0.8–2.3	8–21	1.5–3.7	31–77
Liberia	436	-3.2	0.09–0.27	15–44	3.6–10.9	17–54
Mozambique	634	-4.2	0.7–2.8	7–28	1.9–7.7	20–82
Sierra Leone	573	-5.6	0–0.4	0–48	0–7.2	0–60
Tanzania	629	-5.9*	1.0–2.2	6–13	1.4–2.9	15–32
Uganda	558	-3.1*	1.6–3.7	18–44	2.9–6.9	29–70

*Note: For each indicator, a range of values is provided. These represent projected revenues in the event of a low-price scenario (commodity prices are 25 per cent lower than baseline prices) and a high-price scenario (prices are 25 per cent higher than baseline prices). These calculations are based on data available for projects in advanced stages of planning, with the exception of those in Ghana and Sierra Leone, which have already begun. For further details on the methodology and underlying assumption, see Haglund, Myers & Ostensson (2015). *Average across FY 2011/12 and 2012/13 figures.*

For new resource revenue to drive development sustainably, policy-makers must recognise the various risk factors that may prevent such revenue from materialising or that could cause delays. It can take up to ten years from discovery for production to start, during which time revenue accruing to the government is minimal, and then a further seven to 12 years for production to reach its peak. Other factors, such as commodity price or policy volatility, might delay the final investment decision and production even further. Meanwhile ‘on the streets’, these issues are often poorly explained and not well understood, resulting in unrealistic expectations of immediate benefits. Expectations range from improved welfare (especially health, housing and education) to more jobs and better business opportunities, which increases the political ‘heat’ with a risk of social disruption and unpredictable change in institutional and policy frameworks as expectations remain unfulfilled.

Source: Based on AfDB, World Bank, World Development Indicators; Haglund et al. (2015); IMF country reports

Since the Norwegian success, other jurisdictions, including Brazil and Trinidad and Tobago, have shown that collaborative institutional capacity-building should incorporate, *inter alia*, the skills and technology transfers necessary to empower resource and revenue managers to understand the fundamentals of natural resource monetisation in a more integrated and consistent manner over time. Reliable revenue forecasting is essential to enable resource-rich countries to manage their natural

assets and related revenue effectively; however, transparency is also critical in managing expectations. In the exuberance of the discovery, unrealistic revenue forecasts may overestimate the anticipated socio-economic impact of future resource projects, as outlined in Box 6.

4.3 Medium-term budgeting

The implementation of a long-term fiscal strategy can be facilitated by adopting medium-term fiscal plans; as expenditure decisions usually have multi-year implications, it makes sense to budget resources with a medium-term perspective. In practice, this usually means incorporating planned use of resource revenue into the medium-term budget framework (MTBF), a strategic budgeting exercise that governments use to reconcile aggregate fiscal discipline with public expenditure plans.

While their precise form varies widely, the general purpose of MTBFs is to guide annual resource-allocation processes by linking the policies and plans that line ministries produce with the revenue and expenditure forecasts that finance ministries produce. The MTBF could, for example, set out three-year rolling ceilings for the overall level of expenditure and the non-resource deficit, consistent with the long-term fiscal strategy. This would integrate resource revenue into the overall fiscal envelope for establishing top-down expenditure ceilings for line ministries, which are then reconciled with bottom-up spending paths arising from an analysis of the country's most urgent social needs.

An MTBF can reinforce the link between planning and budgeting only if it is integrated effectively with the annual budget. Some countries have introduced MTBFs without using fiscal constraints when preparing annual budgets, which limits their effectiveness in dealing with pro-cyclical biases that can lead to destabilising swings in total expenditure. To overcome this problem, countries might consider adopting a legal rule that constrains the size of the non-resource deficit to be financed from resource revenue (see Section 5 for more on fiscal rules).

In resource-producing economies, MTBFs need to enable governments to cope with unexpected shortfalls in resource revenue (caused, for example, by a decline in global commodity prices). To avoid having to cut expenditure sharply, the government needs to be able to access resource revenue balances in the treasury account or a 'stabilisation' fund.

Another way to link resource revenue with budgets is to earmark the revenue for specific expenditures. This has advantages and disadvantages (see Box 7).

Box 7: Should governments earmark extractives revenue within the budget?

In principle, revenue earned from natural resources could be earmarked within the budget for specific purposes, such as health and education services, infrastructure investment or cash transfer programmes. There are three main arguments in favour of earmarking extractives revenue. First, earmarking can ensure minimum levels of funding for high-priority spending items, insulating them from fluctuations in overall resource availability. Second, where PFM systems are dysfunctional, earmarking may be a way of improving the quality of spending decisions. Third, where democratic institutions are weak, earmarking may help to reduce mistrust of the government by more transparently demonstrating the direct benefits of exploiting natural resources (Witter & Outhred 2015).

However, the mainstream PFM literature usually takes the view that earmarking revenues for particular purposes – sometimes referred as 'hypothecation' – is bad practice (Welham, Hedger & Krause 2015). Four main arguments are given against earmarking. First, it reduces budgetary flexibility. Second, earmarked funds can simply be offset by shifting resources to other areas, leaving the overall pattern of expenditure unchanged. Third, it can reduce the role of democratic institutions in determining the overall budget, reducing accountability for the use of funds. Finally,

it may encourage rent-seeking behaviour from special interests seeking to entrench their advantage through the resource allocation system.

The recent experience of Ghana exemplifies how good intentions can lead to less than optimal results. In 2011, Ghana passed the Petroleum Revenue Management Act, which stipulated that between 50 and 70 per cent of revenue must go into the Annual Budget Funding Amount, of which 70 per cent is required to go into earmarked priority areas. In the 2014 budget, this led to a large allocation for education infrastructure spending, even though there is little evidence that a lack of education infrastructure is a major barrier to progress. As noted by Adam (2014), the earmarking of extractives revenue can ultimately result in a lack of alignment with the overall sector plan.

4.4 Public investment planning

Several countries have experienced the waste of significant extractives revenue because of ill-conceived decisions about major public investment projects. In some cases, this has been due to corruption, as ministers or senior civil servants allocate investment funds to projects with low rates of economic return but with considerable personal financial benefits. More commonly, poor investment choices arise as politicians bring their influence to bear on projects that benefit their local constituency areas to win votes, when alternatives would have made better economic sense.

Waste can also happen when insufficient allowance is made for the operations and maintenance (O&M) expenditures needed to turn investments into usable public capital (e.g. new schools with too few books or teachers). This can arise when politicians perceive the political benefit from high-profile construction projects to outweigh the risk of blame if the projects are unsuccessful. All of these cases represent a failure of accountability and checks and balances.

Good practice in public investment planning involves the establishment of an uncompromisingly professional and depoliticised approach to the appraisal of every project. In particular, the economic pay-off to a combination of strong institutional arrangements for budgeting and implementing O&M expenditures can be very substantial. Some countries have succeeded in doing this, as Box8 illustrates, by drawing on the experience of Botswana.

Box 8: Investment decisions and O&M in Botswana

A major contributor to Botswana's success in translating diamond revenue into rapid economic growth has been a firm insistence on the good quality appraisal of each public investment project. Significantly, this has been reflected explicitly in the training and promotion of the relevant staff within the government: the ability to prepare sound appraisals, and recognise inadequate appraisals, was a required capability for officials to advance their careers in the Ministry of Finance. While this system could not in itself head off determined political insistence on any particular project, it was a sound basis for diluting political influence.

In addition, the public investment programme in Botswana has been careful to provide adequately for the recurrent O&M costs of new public assets. Initially, the rule of thumb was to budget 18 per cent of the capital cost to cover the O&M costs of any asset, whether a school, medical facility, road or bridge. When planning officials reviewed this rule after a few years, they found that the required ratio was higher than 18 per cent, and responded by cutting back on the investment programme.

Source: Henstridge & Page (2012)

4.5 Treasury management and budget execution

Rather than depositing extractives revenue in the Treasury Single Account (TSA), like other revenue, many countries have found it advantageous to establish a dedicated Resource Revenue Account (RRA), from which withdrawals are made to finance a portion of annual budget expenditures. An RRA provides an easy and transparent method for managing resource revenue, but it should not become an institution with a separate legal personality and authority to spend, which would fragment the budget process and threaten the efficiency of public spending.

The inflows and outflows of resource revenue to and from the RRA should be coherently integrated into the budget process. This is best achieved by ensuring that:

- all resource revenue, without exception, is deposited in the RRA, without exception;
- withdrawals from the RRA to finance expenditures in the annual budget are determined through relevant legislation,¹² and are aimed at financing the non-resource primary deficit; and
- the ability to withdraw amounts in excess of the budgeted amount is subject to the same process set out in the budget law to modify budget appropriations, usually in the form of a ‘supplementary budget’, to ensure accountability and prevent misuse of funds.

Revenue that is not used to finance expenditures in the annual budget should be saved or invested in accordance with relevant legislation and fiscal rules, whether held as reserves in the central bank or transferred to a separate fund with explicit investment objectives, such as a ‘stabilisation’ or ‘savings’ fund (see Section 7).

When revenue is relatively small and the government intends to use it in the short or medium term, the RRA could be a domestic account held at the central bank. For larger amounts of revenue, which the government expects to use over a longer period of time, it could be advisable to set up the RRA as an off-shore account to diminish the volatility of the real exchange rate.

Given the public expectations typically generated by resource revenue, governments may need high levels of political commitment to the overall fiscal strategy to resist pressure to increase the annual withdrawal from the RRA above explicit levels set out in the budget.

Critical questions facing RRA managers are:

- What should be done when the revenue coming in is higher than initially expected? The temptation to utilise such a ‘windfall’ can be difficult to resist, especially when public expectations of increased benefits are high.
- Who is responsible for developing and implementing a sophisticated communications strategy to manage public expectations regarding the fiscal strategy? Specifically, such a strategy needs to explain why windfall revenue should not be immediately utilised without the planning mentioned above.

We do not attempt to answer these questions here, as the answers have to be country-specific. They are raised to contribute towards discussion in the workshop that will follow the presentation of this paper. For example, to handle windfall revenue, countries could design a mechanism for the orderly amendment of the budget, involving a mid-year review of budget execution. Further choices will be discussed during the workshop.

¹² This could be the annual budget law or specific legislation regarding the allocation of resource revenue between the annual budget funding amount and dedicated investment funds.

The possibility of budget overruns can be minimised by assisting line ministries in formulating – and regularly updating – rigorous commitment plans, to avoid last minute surprises. Enhanced expenditure controls can also play a key role in managing the incurring of obligations. Typically, this would constitute a centralised system of commitment control in conjunction with the operation of a TSA, mandating the ministry of finance to examine all commitment requests from line agencies prior to any orders for goods and services being placed, ensuring that their value is in line with the approved budget allocation balance.

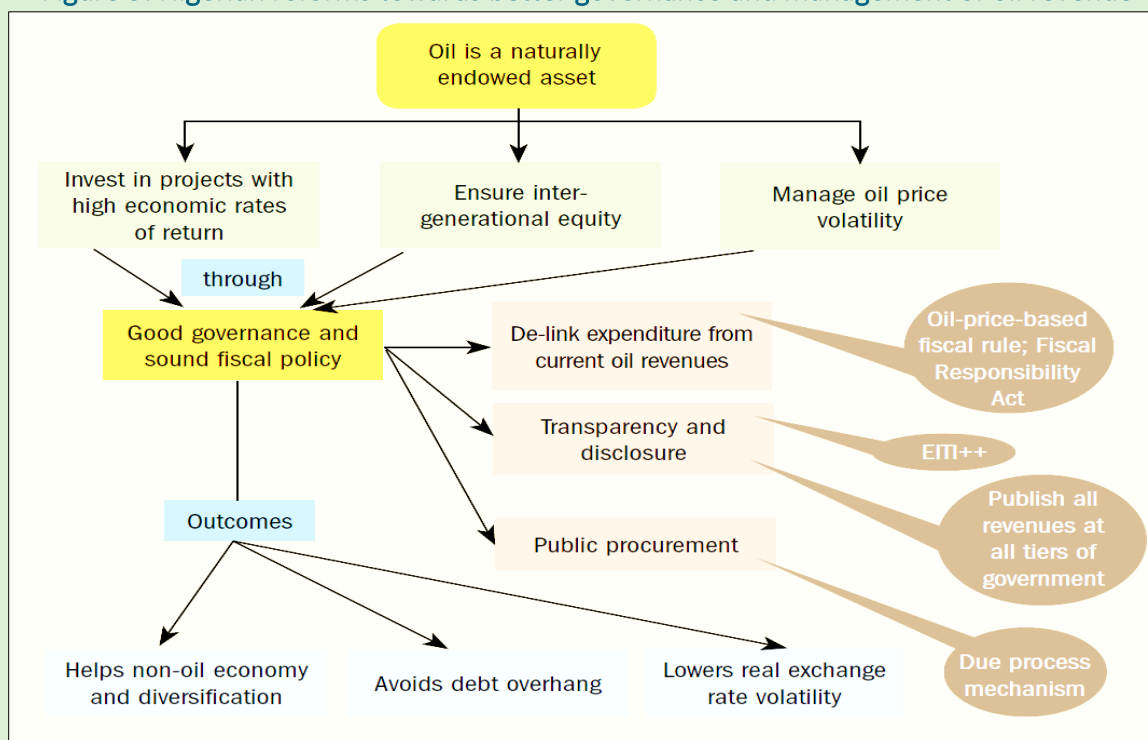
Box illustrates how Nigeria set about reforming its initially poor practice.

Box 9: Reforming the ‘unreformable’ – lessons from Nigeria

Due to the mismanagement of revenue in the 1970s, when oil prices fell in the 1980s Nigeria faced rampant inflation and massive debts, creating a fragile economic environment, which undermined the impact of 1986 reforms based on market incentives, a floating exchange rate, liberalised prices, and the elimination of import licenses and commodity boards.

Between 2003 and 2007, however, a comprehensive fiscal and institutional reform programme was implemented, including the adoption of the Extractive Industries Transparency Initiative (EITI) and anti-corruption measures, such as a ‘due process mechanism’ in public contracts (see Figure 5). An ‘oil-price-based fiscal rule’ was adopted in 2004 and fully enacted in 2007 through the Fiscal Responsibility Bill, and an Excess Crude Oil Account was created to serve as a mixed stabilisation and savings fund, constraining spending by transferring oil revenue to the budget in accordance with a reference price. This stabilisation programme coincided with rising oil prices, which enabled Nigeria to clear 85 per cent of its external debt by 2006.

Figure 5: Nigerian reforms towards better governance and management of oil revenue



Source: Okonjo-Iweala (2008); Okonjo-Iweala (2012)

4.6 Transparency and accountability

Noting that transparency and accountability are cross-cutting themes that traverse the entire PFM cycle and are not a sub-set of the PFM cycle, in this section we place emphasis on auditing and evaluation. Well-functioning governments have arrangements in place for external scrutiny and evaluation of public finances. A high-quality external audit is essential for transparency in the efficient use of public funds and for the holding of revenue authorities accountable for mismanagement thereof. The objectives of external scrutiny are to ascertain:

- whether the government's financial statement is a fair and accurate reflection of revenue collected and expenditures made (financial audit);
- if agencies have acted in accordance with law and regulations (compliance audit); and
- the extent to which an agency has achieved value-for-money against its stated goals (performance audit).

Audit reports that assess the central government's consolidated operations should be made available to the public within six months of completion.

Standard audit and evaluation procedures are adequate for the expenditure of revenue flows from natural resources. However, the complexity of 'internal' transactions associated with natural resource revenue generation and their tax administration may require specialist skills that are usually in short supply in developing country administrations – for example, tax officers who understand the technical stages of mineral processing and how value changes as processing and beneficiation proceed.

The complexity of the natural resources sector is also likely to generate accusations about the diversion of funds. To ensure transparency and accountability, resource-producing countries with weak institutional frameworks should consider appointing an independent external auditor, in addition to the usual audit conducted by the country's supreme audit institution. International initiatives such as the EITI may have a valuable role to play in complementing the government's own mechanisms. Box10 sets out the objectives of the EITI and the experience of its application in Nigeria.

Box 10: The EITI and the case of Nigeria

The (EITI) is an international standard for promoting the open and accountable management of natural resources. Its core objective is to strengthen governance by empowering the public to hold government to account more effectively, through improved transparency and accountability for resource revenues generated by the extractives sector. In countries participating in the EITI, companies are required to publish what they pay to governments, and governments are required to publish what they receive from companies. A process of reconciling these figures is then undertaken by an independent auditor.

Assessments of the impact of EITI have been mixed. There is no doubt it has significantly enhanced the overall level of transparency in the extractives sector in most participating countries. For example, in Nigeria the EITI process generated detailed information on the industry, tax and other fiscal matters that had never before been compiled, let alone published. However, Shaxson (2009) argues that, judged against EITI's broader goals of fostering better governance and accountability, the initiative has had poor results. Recent publications by Chatham House (Katsouris & Sayne 2013), detailing the systematic theft of crude oil, and the Natural Resource Governance Institute (NRGI 2015a), documenting how oil sales practices have worsened since 2010, appear to support the view that improved transparency has not yet led to better governance in Nigeria.

Countries where extractives revenue is significant in the overall budget may find it useful to create special oversight boards to broaden society's participation in the use of resource revenue. An example

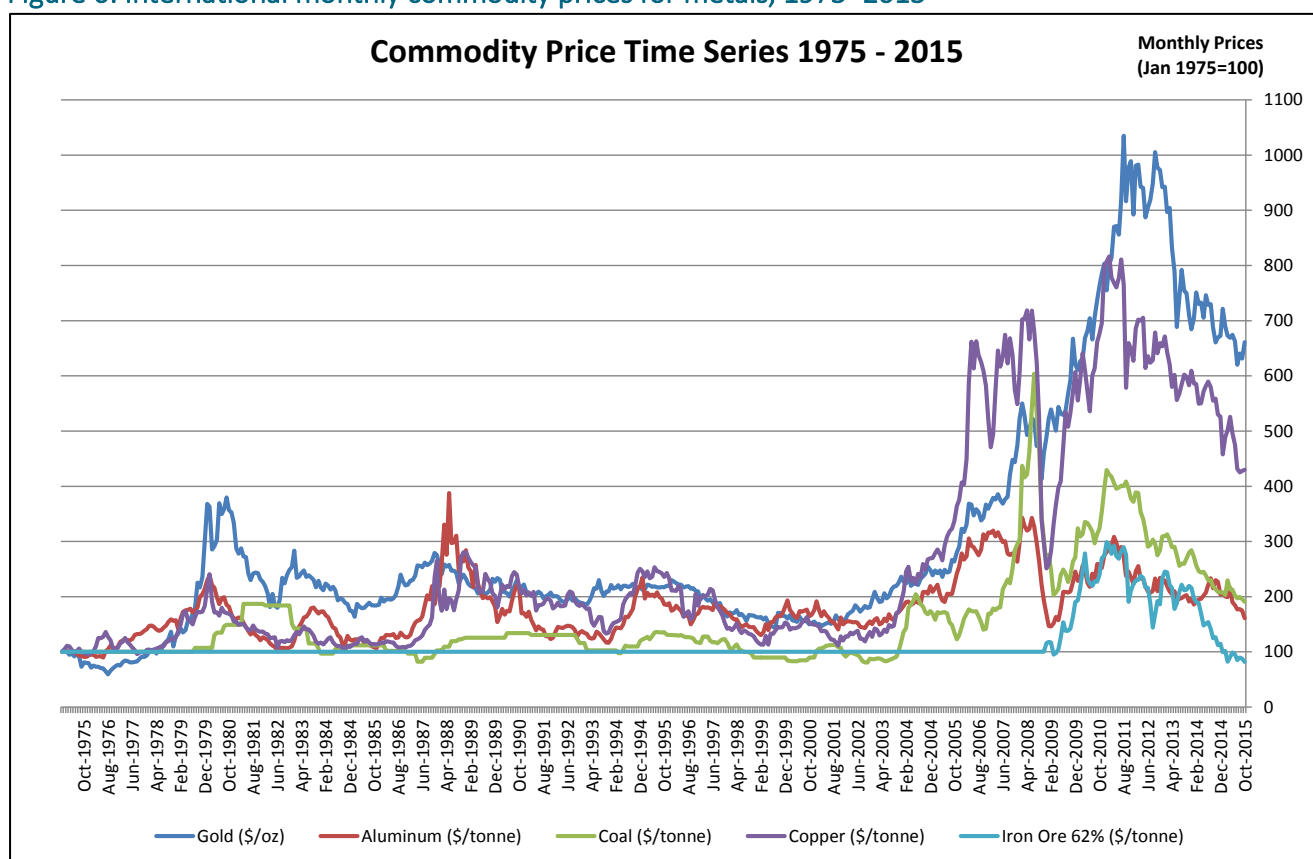
is the Public Interest and Accountability Committee in Ghana, which is mandated to monitor the government’s compliance with the Petroleum Revenue Management Act, including the operational rules of the resource funds, as well as providing a platform for public debate on the allocation and use of petroleum revenue.¹³ Such mechanisms may help to counterbalance conflicting political interests and improve overall transparency. However, to be effective, they need to be sufficiently well-resourced; otherwise, they will be limited in their functioning and unable to catalyse and sustain any real momentum in terms of citizen engagement.

5. Revenue volatility

5.1 Introduction

Revenue volatility is a major concern for most countries that are dependent on extractive industries. Volatility makes the planning and budgeting of government expenditure inherently more difficult: there is a risk of over-spending on poorly-planned projects in boom times, and harsh cuts when prices or production fall. Volatility in government spending can damage long-term economic growth by causing instability in exchange rates, inflation, investment patterns and private sector activity levels. Figure 6 illustrates the severity of international commodity price¹⁴ movements, one of the main sources of revenue volatility.

Figure 6: International monthly commodity prices for metals, 1975–2015



Source: SNL data¹⁵

¹³ See <http://piacghana.org/>.

¹⁴ These are the prices settled in international markets (as collated and analysed by SNL Energy), and apply to any country that trades in these commodities.

¹⁵ SNL Financial is the premier provider of breaking news, financial data and expert analysis on business sectors critical to the global economy: banking, insurance, financial services, real estate, energy, media &

Various instruments to manage volatility are available to governments whose budgets depend on resource revenue. These can include: different forms of hedging against commodity price swings, although in practice the use of standard hedging instruments in countries with only rudimentary capital markets is necessarily limited and expensive (Lu & Neftci 2008); the use of commodity-price-linked borrowing;¹⁶ and the introduction of various fiscal or budgetary rules that help to put limits on budgetary expenditures in response to identified changes in commodity prices or revenues from commodities (such rules are discussed in detail later in the paper). The most feasible approach for most governments is to use fiscal policy in a counter-cyclical manner, saving revenue in boom times as a buffer against shocks. However, many resource-dependent countries in the past have exacerbated instabilities by operating fiscal policies in a pro-cyclical manner (Velasco 2011b), spending heavily in boom periods and having to reduce spending as prices trend downwards, which damages growth. This approach is not inevitable and obviously it is not advisable.

Operating a counter-cyclical fiscal policy can be difficult because of political pressures to spend during the boom. However, errors can also creep in due to erroneous information about emerging trends (e.g. of commodity prices) and poor diagnosis of whether particular shocks are temporary or permanent. Sound policy, therefore, depends on high-quality information and associated technical diagnostics performed by, for example, the ministry of finance or central bank – it is equally important that the relevant authority has the necessary internal capacity to deliver on this expectation. Data on historical price trends are easily available, but not necessarily a good guide to what may happen in the future – and difficulty anticipating future prices exacerbates the problem of anticipating future production, for reasons explained in Section 4.2 above. One approach is regularly to evaluate alternative credible scenarios.

Issues in this area include:

- Has the government put in place a good system for forecasting its own revenue from extractive industries?
- What role can be, and is in practice, played by formal fiscal rules, as discussed in Section 6 below?
- Do historical data show a tendency for extractives revenue to be volatile, and to what extent has that affected overall government revenue? How large would expenditure cuts need to be to deal with a typical (past) dip in the cycle of extractives revenue?
- Are the results from the forecasting of revenue subject to regular evaluation and sensitivity analysis (e.g. to possible changes in world prices)?
- How, if at all, does the government policy process, including medium-term budget planning, take account of the likely sensitivity of the revenue forecasts to changes in future events rather than relying solely on point forecasts?

The integrated nature of revenue management and related PFM tools means that there is a certain amount of overlap in the reference to the various tools and interventions. This should be regarded not as duplication but rather as reiteration of important systemic considerations that, while possibly discussed separately, should be implemented in a synergistic manner. We do not attempt to answer

communications and metals & mining. SNL's business intelligence service provides investment professionals, from leading Wall Street institutions to top corporate management, with access to an in-depth electronic database, available online and updated 24/7 (see <http://www.snl.com/>).

¹⁶ Government debt instruments might be able to address some of the concerns by linking debt payment to commodity prices or even the GDP growth rate (e.g. commodity-linked or GDP-linked bonds). However, in practice, the pool of investors willing to accept exposure to commodity risks is smaller than the pool of those likely to invest in traditional bonds.

these questions here, as the answers must be country-specific. It is hoped that the workshop participants will bring their own experience to bear on the dialogue and, in this regard, the questions are raised to contribute to the discussion that will follow the presentation of this paper.

5.2 Managing volatility: can borrowing help?

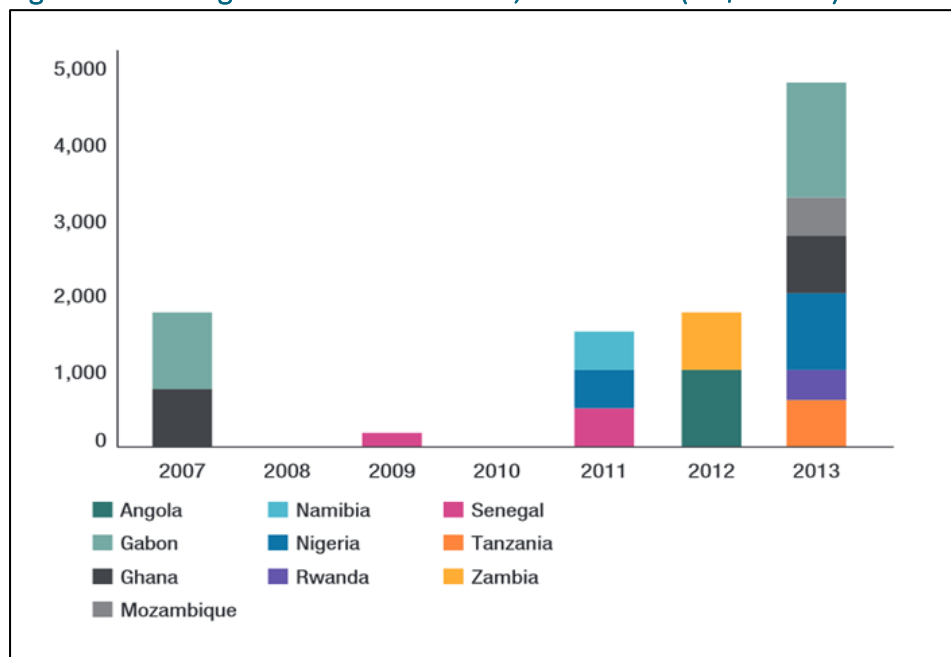
In principle, the ability to borrow funds externally can afford governments additional freedom to deal with volatility in earnings derived from natural resources: counter-cyclical borrowing patterns (i.e. borrowing when prices are low and repaying when prices are high) is theoretically sound practice. However, it can be difficult in practice. Before 1996, many low-income countries in Africa and elsewhere were so over-indebted that they had little or no ability to borrow new money from abroad, beyond the concessional lending windows of multilateral banks such as the World Bank.

That situation changed after 1996, when HIPC debt relief placed many low-income countries – especially in sub-Saharan Africa – in the position of again having capacity for new borrowing. For example, HIPC relief reduced Ghana’s external debt from nearly 100 per cent of GDP to less than 30 per cent, lower than in most EU countries today. Several of these low-income countries have since discovered significant mineral and/or oil and gas reserves (examples include Tanzania, Uganda and Sierra Leone). In theory, their unused capacity for new borrowing could be employed to address resource revenue volatility. However, this does not seem to have happened yet in practice.

Recent African experience of borrowing by issuing sovereign debt bonds has focused more on bringing forward anticipated revenue, a rationale for borrowing explained in Section 3.1 above. The growing use for sovereign bonds by newly extractives-rich countries in sub-Saharan Africa is illustrated in Figure 7.¹⁷ Ghana is shown to have borrowed heavily in 2007, before any significant revenue had arisen from its Jubilee field. Similarly, Tanzania borrowed significantly in 2013 in advance of any revenue from its Mafia Deep Offshore Basin gas fields.

¹⁷ This trend has been driven by easy global financing conditions as well as rising financing needs, reduced access to concessional loans, and undeveloped domestic financial markets amongst the issuing countries. In addition to providing finance for infrastructure investments, sovereign bond issuance can represent an opportunity for countries to lower their debt servicing costs.

Figure 7: Sovereign bond issues in Africa, 2007–2013 (US\$ million)



Source: Te Velde (2014), based on Hou et al. (2014)

In some cases, this borrowing seems actually to have increased volatility. In Ghana, for example, it increased debt servicing costs to more than 45 per cent of government revenue, necessitating a new IMF financing programme, only a few years after the country proudly announced that it was able to stand on its own feet without IMF support. Another example, Zambia, is explored in Box 11. This should perhaps not be surprising – as noted in Section 5.1 above, there are many examples of resource-dependent countries having exacerbated external instabilities by operating fiscal policies in a pro-cyclical manner (Velasco 2011b), and the same temptations apply to borrowing patterns. Risks are largest in contexts with limited debt-management capacity and strong political pressure to spend sovereign bond receipts on immediate needs rather than on more productive investments.

Box 11: Recent sovereign borrowing in Zambia

Zambia debuted on the sovereign bond market in 2012, with an issuance of US\$750 million amortised over ten years for the notional purpose of funding infrastructure projects in energy and transportation. While average bond inflows for countries with a gross national income (GNI) comparable to Zambia (US\$1 000 per person) are the equivalent of 0.05 per cent of GNI each year, Zambia's 2012 sovereign bond inflow amounted to the equivalent of 3.75 per cent of GNI, or 0.375 per cent per year – over seven times the average.

If borrowing is to be used as a tool to reduce volatility, it should be done when prices are expected to rise. However, in 2014 global copper prices fell by over 30 per cent, reducing Zambia's revenue and, consequently, its ability to service its debt. Compounding the problem, Zambia had borrowed in foreign currency and the falling copper price caused its own currency to depreciate, which increased the effective debt servicing costs.¹⁸ Far from addressing volatility, having a greater share of its GDP and debt represented by foreign bonds increased Zambia's exposure to external shocks.

¹⁸ Exchange rate risk heightens debt sustainability risk in that a negative shock, such as a fall in global resource prices, could lead to currency depreciation, GDP contraction, higher debt servicing costs and an increased debt-to-GDP ratio, which threatens debt sustainability.

To make matters worse, under political pressure, Zambia's government had diverted some of the borrowed money from the planned investments in infrastructure to increase the pay of public sector workers, which grew by approximately 40 per cent between 2011 and 2013. Facing a widening fiscal imbalance, Zambia borrowed another US\$1 billion over ten years in 2014, but it had to offer a yield of 8.6 per cent, up from 5.6 per cent just two years previously, reflecting the market assessment that the country had rapidly become a riskier proposition.

Source: Haglund et al. (2015), based on IMF Article IV report data

5.3 Managing volatility: fiscal rules

Formal fiscal rules have become more common budget management devices in the past 20 years. Drawing on evidence from in-depth research, the IMF (2009) notes that:

based on a new database spanning the entire Fund membership, 80 countries had national and/or supranational rules in place as of early 2009. Of these, 21 are advanced economies, 33 emerging markets, and 26 low-income economies. In contrast, in 1990, only seven countries had fiscal rules.

The key questions for the present paper are:

- Do countries that depend on extractives revenue benefit from adopting formal fiscal rules as part of their overall PFM?
- If so, what types of rules are best suited to the needs of such countries?
- What enforcement rules may be needed to assure the usefulness of fiscal rules?

These questions will be addressed below. However, it is expected that they will generate greater discussion during the workshop dialogue, and the suggestions below are posed mainly to stimulate such deliberations.

5.3.1 Can resource-dependent countries benefit from rules?

Research, particularly by the IMF, would support the integration of fiscal rules for two main reasons. Firstly, basic formal rules can promote long-term fiscal sustainability by imposing multi-year constraints on overall government expenditure. If correctly enforced, this acts as a commitment mechanism that binds successive governments to a long-term budgetary target. There is an analogy with the stabilising rationale behind inflation targeting in monetary policy,¹⁹ which binds the central bank to long-term targets that trigger pre-emptive action to maintain the target inflation rate when it drifts to the outer limits of the target range.²⁰ Similarly, fiscal rules can prompt action to meet a

¹⁹ In recent years, many central banks, the makers of monetary policy, have adopted a technique called inflation targeting to control the general rise in the price level. In this framework, a central bank estimates and makes public a projected (or 'target') inflation rate and then attempts to steer actual inflation toward that target (or to maintain the target once achieved), using such tools as interest rate changes. By changing interest rates, the central bank changes the cost of borrowing and, thereby, the level of consumption, which, in turn, affects the demand for goods and services, thus increasing or decreasing the rate of change in their price – the inflation rate. See Jahan (2012).

²⁰ In the case of monetary policy and inflation targeting, interest rates and inflation rates tend to move in opposite directions, and the likely action a central bank will take to raise or lower interest rates becomes more transparent under an inflation-targeting policy. Advocates of inflation targeting think this leads to increased economic stability. Inflation targeting combines elements of both 'rules' and 'discretion' in monetary policy. This 'constrained discretion' framework combines two distinct elements: a precise numerical target for inflation in the medium term and a response to economic shocks in the short term. See Jahan (2012).

specified target, regardless of the political environment. In particular, fiscal rules can discourage short-term overspending and waste by limiting a government’s ability to grow expenditures too quickly. Such rules are especially necessary in resource-dependent countries, given the inherently long-term nature of expenditure decisions pertaining to extractives revenue.

Secondly, well-designed fiscal rules may provide some form of counter-cyclical policy, which can help to mitigate volatility by binding governments to long-term stabilising objectives. In addition, they can stimulate private investment by enhancing the credibility of a government’s commitment to stable fiscal policy.

5.3.2 What types of rules are best suited to the problem?

There are four main types of fiscal rules. These are summarised with country examples in Table 5. Ideally, countries adopt rules on the basis of their context and objectives. No single rule is appropriate for every country (Bauer 2014). For example, countries that need to finance development projects and have the absorptive capacity may want to spend more and save less. An expenditure rule would be appropriate if a country’s objective is to stabilise the budget. Empirically, rules with the objective of balancing the budget over an economic cycle (e.g. a cyclically adjusted balance rule) have been found to provide a good degree of economic stabilisation.

Table 5: Types of fiscal rules and their objectives

Fiscal rule	Explanation	Example	
Balanced budget rule	Limit on overall, primary or current budget balances in headline or structural terms	Chile (statutory since 2006) Mongolia (statutory since 2010; effective in 2013) Norway (political commitment since 2001)	Structural surplus of 1 per cent of GDP with an escape clause. Structural deficit cannot exceed 2 per cent of GDP. Non-oil structural deficit of the central government cannot exceed 4 per cent. The fiscal guidelines allow temporary deviations from the rule under specific circumstances.
Debt rule	Limit on public debt as a percentage of GDP	Indonesia (coalition agreement since 2004) Mongolia (statutory since 2010; effective in 2014)	Total central and local government debt should not exceed 60 per cent of GDP. Public debt cannot exceed 40 per cent of GDP.
Expenditure rule	Limit on total, primary or current spending, either in absolute terms, growth rates, or percentage of GDP	Botswana (statutory since 2003) Mongolia (statutory since	Ceiling on the expenditure-to-GDP ratio of 40 per cent. Expenditure growth limited to non-mineral GDP growth.

		2010; effective in 2013)	
		Peru (statutory since 2003; rule changed in 2009)	Real growth current expenditure ceiling of 4 per cent. Exceptions made if Congress declares an emergency.
Revenue rule	Ceiling on overall revenue or revenue from oil, gas or minerals	Alaska (statutory since 1976)	50–75 per cent of oil revenue minus income tax and property tax enters the budget; the rest is saved in the Alaska Permanent Fund, which saves some revenue and disburses the rest directly to citizens.
		Botswana (political commitment since 1994)	Mineral revenue may only be used for public investment or saved in the Pula Fund.
		Ghana (statutory since 2011)	A maximum 70 per cent of seven-year average of petroleum revenue enters the budget. A maximum 21 per cent is allocated to a stabilisation fund. A minimum 9 per cent is allocated to a heritage fund for future generations. Percentages subject to review every three years.
		Kazakhstan (government policy since 2010)	US\$8 billion plus/minus 15 per cent (depending on economic growth) of petroleum revenue is transferred from the National Fund to the budget annually.
		Timor-Leste (statutory since 2005)	Revenue entering the budget from the Petroleum Fund cannot exceed 3 per cent of national petroleum wealth. Exceptions made if the government provides a detailed explanation to Parliament and certain reports.
		Trinidad and Tobago (statutory since 2007)	A maximum 40 per cent of excess oil and gas revenue above estimated revenue is used to finance the budget; the rest goes into the Heritage and Stabilisation Fund. An 11-year revenue average is used for budget estimates.

Source: Bauer (2014)

It is worth reiterating that the appropriate fiscal rule should match a country's specific objectives and long-term vision. Box 12 explores how such rules helped Chile to improve its fiscal stability in the face

of large swings in copper prices. However, Velasco (2011b) and IMF (2009) note political and economic problems inherent in establishing and maintaining binding fiscal-rule constraints over budget decisions. One problem for low-income countries is that they are likely to have a higher volatility of tax revenue than middle-income countries, making it more difficult to stabilise revenue over the cycle. If rules are too rigid, governments will find themselves in a situation where they cannot adapt to changing circumstances. It is for this reason that some countries have an escape clause. In similar vein, rules that are too flexible will not be effective.

The key message here is that while the rationale for fiscal rules is fairly straightforward, their application is far more complex, and close attention needs to be paid to the economic conditions existing in any particular fiscal regime. Just as two patients who want lower blood pressure may need to take different medication, depending on other details of their health status, two economies may need different fiscal rules, even if the ultimate objective of both is the same.

5.3.3 How can enforcement be handled?

Fiscal rules need enforcement mechanisms to ensure that they are followed in times of budgetary pressure, typically when revenue is exceptionally high at the peak of a cycle. Political realities in any particular country may make it extremely difficult to restrain expenditures in boom periods, for reasons including the so-called ‘voracity effect’ (Lane & Tornell 1996).²¹ Some enforcement mechanisms have legal or constitutional backing, as in Chile, while others give authorities significant discretion. Publicity and transparency regarding the operation of the rules can contribute to enforcement by empowering civil society and the media to discuss the rules and defend them against misuse.

Similar to the case of inflation targeting, as the fiscal rules become more widely understood and accepted, they should become part of the public discourse and be more readily appreciated for their long-term benefits. A critical aspect of any fiscal constraint is that it needs to be supported by a transparent and accessible communications strategy that explains its working and application in a manner that enables the public to understand and appreciate the long-term value of applying the rules. This should be a proactive mechanism to manage expectations of possibly unsustainable short-term benefits.

Box 12: Fiscal rules in Chile

Between 2001 and 2006, Chile imposed on itself a series of budget rules. These were locked in by the Fiscal Responsibility Law of 2006. Primarily, the government was required to set a budget target, originally a surplus of 1 per cent of GDP. This was for three main reasons: (i) the need to recapitalise the central bank, which had inherited a negative net worth from bailing out the private banking system in the 1980s; (ii) the need to fund some pension-related and other liabilities; and (iii) the need to service the net external dollar debt. The target was lowered to a surplus of 0.5 per cent of GDP in 2007, and to 0 per cent in 2009. The central rule for the structural deficit was that the government could run a budget deficit larger than the target deficit to the extent that: (i) output fell short of its long-run trend, in a recession; or (ii) the price of copper was below its medium-term (10-year) equilibrium.

²¹ In the voracity model, the coercive power of government is used to transfer wealth from the private sector to powerful – but probably unproductive – interests. In the event of a resource price boom or a new discovery, a country could experience a more than proportional increase in such transfers, and this will act to slow down growth.

A key institutional innovation involved two panels of experts whose job it was each mid-year to make the judgments regarding the output gap and the medium-term equilibrium price of copper. The government then followed a set of procedures that translated these numbers, combined with any given set of tax and spending parameters, into the estimated structural budget balance. The targeting was followed strictly, even in some periods when the minister of finance was under great political pressure to increase expenditure, because fiscal restraint in a period of high copper prices had led to a large surplus in the stabilisation fund that Chile had also created.

One tangible beneficial consequence of Chile's self-imposed fiscal discipline was that at the onset of the global financial crisis in 2008, the country was able to inject a large fiscal stimulus – 2.8 per cent of GDP, compared to 0.6 per cent in Brazil, 1.5 per cent in Mexico and less than 1 per cent in much of Europe – without threatening its debt stability or its global bond ratings.

Source: Velasco (2011a) and Frankel (2011)

6. Sovereign wealth funds

Many different types of SWF operate in resource-rich countries (e.g. Norway, Saudi Arabia, Ghana, Nigeria and Botswana) and are under discussion in prospective exporters (e.g. Tanzania, Zambia and Zimbabwe). In particular, in Africa, SWFs are also becoming more popular, as evidenced in Table 3.

Table 6: List of African sovereign wealth funds (2013)

Country	Fund name	Assets (US\$ million)	Since	Notes
Algeria	Fund for the Regulation of Receipts (FRR)	77 200.0	2000	Funded by oil & gas profits
Angola	Fundo Soberano de Angola (FSDEA)	5 000.0	2012	7.5% of fund to social projects
Botswana	Pula Fund	6 900.0	1994	Funded by diamond profits
Chad	Oil Revenue Management Plan	–	2003	Created with World Bank, scrapped in 2008
Equatorial Guinea	Fund for Future Generations (FFG)	80.0	2002	Funded by 0.5% of all oil revenue
Gabon	Fonds Souverain de la Republique Gabonaise (FSRG)	380.0		Funded by oil profits
Ghana	Petroleum Holding Fund	72.0	2012	Funded by oil profits, flows to Ghana Heritage Fund and Stabilisation Fund
Kenya		120.0	2014	Mining Bill 2013 proposed, KSh10 billion initial start-up expected, funded by minerals
Libya	Libyan Investment Authority (LIA)	65 000.0	2006	Funded by oil & gas profits

Mauritania	Fonds National des Revenus des Hydrocarbures (FNRH)	300.0	2006	Funded by oil & gas profits
Nigeria	Nigeria Sovereign Investment Authority	1 000.0	2011	Funded by oil profits, flows to 3 funds: Stabilisation, Future Generations, Infrastructure Fund
Rwanda	Crystal Ventures	500.0	2009	Owned by Rwanda Patriotic Front (RPF)
São Tomé and Príncipe	National Oil Account	–	2004	If oil discoveries are made, profits will go towards this account
South Sudan	Oil Revenue Stabilization Account, Future Generations Fund	–	2013	15% of oil profits go to Stabilisation Account, 10% to the Future Generations Fund
Tanzania	Natural Gas Reserve Fund	–	2013	Funded by gas profits

Source: *Investment Frontier (2013)*

The core purpose of an SWF is save revenue for future spending. However, the various funds currently in existence have a wide range of different and often complex objectives (see Box 13). Questions pertaining to SWFs that matter to the PFM agenda include the following:

- Does the country already have, or is it likely to have, sufficient revenue to justify the high administrative costs involved in establishing an SWF?
- If not, what alternatives are available?
- What will be the main operational purpose of any SWF that is established? For example:
 - To accumulate long-term savings for expenditure in the future on a variety of projects for the benefit of future generations?
 - To accumulate a cushion of funding that will enable the government to stabilise expenditure in future years in the event of temporary falls in extractives revenue?
 - To earmark (hypothecate) a portion of revenue for particular uses such as the payment of pensions?
- What rules and constraints will govern the SWF's allocation of money to different investments and their eventual draw-down into the main government budget?
- What will be the broader structure of governance and accountability for the SWF? How will these rules be enforced?

SWFs now have collective assets of over \$7 trillion, more than \$4 trillion of which have been derived from oil and gas revenue.²² At least 40 SWFs have been created since 2005 and more than 40 have assets in excess of US\$10 billion, with the largest – Norway's – having almost US\$900 billion. Among the countries with SWFs are the oil-rich states of the Middle East (including the UAE, Qatar, Bahrain and Kuwait), richer developed economies (such as Australia, Canada and the USA) and emerging market economies (including Chile, Malaysia, China and South Korea).²³

SWFs in Africa are still relatively small. The largest is the Pula Fund in Botswana – with assets of \$7 billion built up since 1994, it is six times larger than the Nigerian Sovereign Investment Fund,

²² Derived from analysis by the authors from the Sovereign Wealth Fund Rankings published by the Sovereign Wealth Fund Institute (see <http://www.swfinstitute.org/sovereign-wealth-fund-rankings/>).

²³ Derived from analysis by the authors from the League Table of Largest Public Funds published by the Sovereign Wealth Fund Institute (see <http://www.swfinstitute.org/fund-rankings/>).

established in 2011. Equatorial Guinea, Gabon, Ghana and Mauritania are among other African countries with SWFs.

Box 13: Types and purposes of sovereign wealth funds

There are two main reasons why an SWF may be used to postpone spending from the present to the future. First, for intergenerational equity – to build and invest savings balances for the long term. Second, for counter-cyclical – to provide stabilisation funds to help manage short-term volatility in an attempt to counter the adverse effects of boom-bust cycles on government spending and the national economy. These funds have different manifestations and labels in different countries corresponding with slight differences in their functions, including:

- futures funds (e.g. Australia and Equatorial Guinea);
- pension funds (e.g. Norway and Chile);
- heritage funds (e.g. Trinidad and Ghana);
- legacy funds (e.g. North Dakota – USA);
- reserve funds (e.g. Russia and Oman); and
- stabilisation funds (e.g. Chile, Mexico, Venezuela, Trinidad).

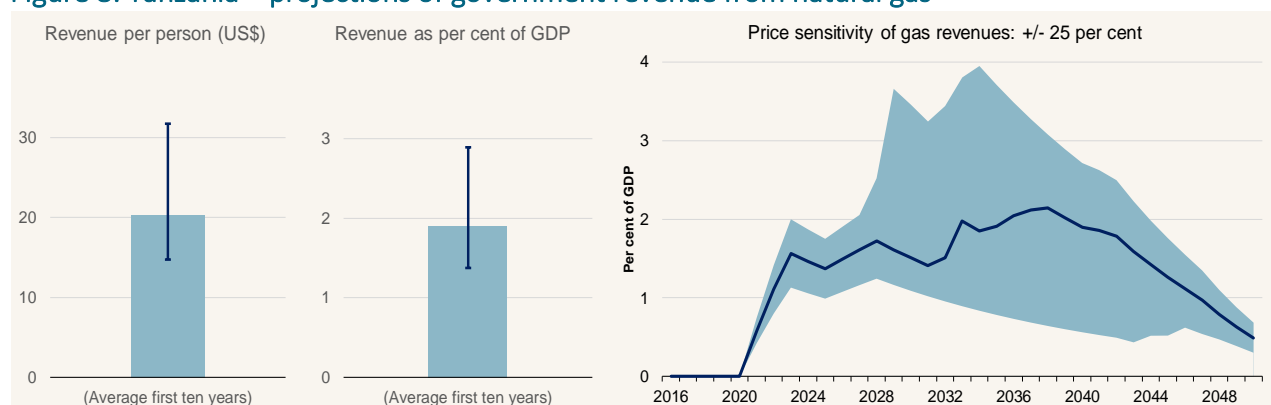
Usually, SWFs are created by governments that have a budgetary surplus and little or no international debt. The alternatives for countries in this position are either to immediately consume the revenue or to build up surplus liquidity in the form of international reserves in their central bank. Since the assets of some SWFs are held in the central bank, it is sometimes difficult in practice to distinguish between the SWF and the surplus international reserves held for monetary/liquidity purposes.

6.1 Is extractives revenue sufficient to justify an SWF?

If extractives revenue is relatively small, an SWF might lack credibility or serve no useful purpose. The contrast between Norway and Tanzania is instructive. The SWF established in Norway in 1990 has accumulated assets of almost US\$900 billion, equivalent to US\$178 000 for every one of Norway's five million citizens. Since the fund was established, Norway has typically enjoyed large fiscal surpluses – often around 10 per cent of GDP – thanks in part to oil and gas revenues, enabling it to invest around US\$4 000 per capita per year. Because the fund is so large, it can easily accommodate administrative costs, which amount to less than 0.5 per cent of its total assets. It has achieved a net return of around 7 per cent per annum.

In contrast, Tanzania – which recently announced a new SWF, the Natural Resources Governance Fund – has for many years run significant fiscal deficits, typically around 3–5 per cent of GDP. Revenue from gas discovered in the Indian Ocean is expected to be around 1–4 per cent of GDP (see Figure). Even after the natural gas windfall, Tanzania's future budgets seem likely at best to have only a small overall surplus. Making the optimistic assumption that the government could commit an average of 0.5 per cent of GDP per annum to the Natural Resources Governance Fund, after ten years the fund would be worth in the region of US\$2.5 billion – only US\$50 for each of the country's 50 million citizens, or the equivalent of about one-third of the government's typical annual recurrent expenditures.

Figure 8: Tanzania – projections of government revenue from natural gas



Source: OPM & Uongozi (2013)

For such a modest benefit, it is arguably not worth sacrificing immediate spending. The return on well-chosen investments in the Tanzanian economy would almost certainly exceed any rate of financial return that the SWF could achieve,²⁴ especially as the relatively small scale of the fund means that it would be likely to have high annual administrative costs relative to its total asset value. Tanzania’s SWF will need to work hard to achieve what the theoretical literature has termed the ‘benchmark of legitimacy’ (Ang 2010): if it is generally perceived that an SWF is not significant enough to transfer spending meaningfully from the present to the future, it becomes harder to sustain against political pressures, as suggested by the experience of Chad (see Box 14).

In short, although SWFs have been successfully implemented in a number of countries over the past 50 years, and more countries are moving toward this option, they are not a panacea for managing resource revenue. Individual countries must assess their economies to determine whether an SWF is appropriate or whether it might be tailored to suit their needs.

Box 14: The Future Generations Fund in Chad

In June 2000, the World Bank, the government of Chad and an ExxonMobil-led consortium of oil production companies agreed on the proposal for a 650-mile pipeline running from Cameroon to the Gulf of Guinea. Oil began pumping through the pipeline, ahead of schedule, in late 2003.

As part of the agreement, Chad’s parliament had passed the 1999 Petroleum Revenue Management Law. The agreement required that Chad’s 12.5 per cent share of direct revenue from oil production should flow into a London-based Citibank escrow account, monitored by an independent body created to oversee the account’s management. One goal was to channel Chad’s revenue into poverty-reduction programmes: the ‘future generations’ fund accounted for 10 per cent of annual revenue and was created to provide Chad with reserve funds after the oil resources were exhausted. Eastern Logone, Chad’s oil-producing region, was to receive 5 per cent of the royalties, while 15 per cent of royalties and dividends were to go to the federal government.

The futures fund agreement was based on an unprecedented volume of technical work supported by the World Bank, and was regarded at the time as a model for how these things should be handled in poorer countries. However, even while the pipeline project was being hailed as a model for transparency, there were cynics who said: ‘That’s going to work only until Déby wants to buy some guns.’ Sure enough, in

²⁴ Thus, in net present value terms, the funds available for the budget would actually be less over time than they would have been without the SWF.

December 2005, President Déby overhauled the Petroleum Revenue Management Law, doing away with the ‘future generations’ fund, and doubling to 30 per cent the portion of money that would go directly to the federal government. Another change to the law was the inclusion of security as one of the priority ‘poverty reduction’ measures, which allowed the funds to be used for purchasing arms.

Source: Zissis (2015)

6.2 What are the alternatives?

If it is decided not to take the big and administratively expensive step of setting up a formal SWF, at least in the early years of new extractives revenue, there are two main alternatives for any surplus revenue in the budget:

- Surplus funds could be held on a long-term basis in the foreign exchange reserve account of the central bank. This is an administratively cheap alternative, since it does not involve any new legal structure, and the technical work can be grafted onto that already carried out by the central bank’s foreign exchange department. A potential downside is that the extractives funds will be consolidated with the country’s earnings from other activities and will be invested in the foreign, mainly liquid, relatively safe and low-yield assets that generally characterise the portfolios of foreign reserve holdings (e.g. US treasury securities, UK gilts). It will not be possible to build a bigger asset base by seeking a higher rate of return.
- Surplus funds could be held temporarily in the foreign exchange reserve account of the central bank, but with the explicit intention eventually to establish an SWF once the balance has grown sufficiently large. This approach balances the administrative cost advantages of the first approach in the short-term, with the advantages of an SWF in the longer term. If an SWF is started with a reasonably high balance, it will help to overcome the aforementioned difficulties with achieving credibility and legitimacy.

6.3 What are the main operational purposes?

As noted above, different SWFs have different purposes. These include paying pensions once oil and gas revenue is no longer sufficient to do so (one of the purposes of the Norway fund), or paying cash dividends to the population (e.g. the Alaska Permanent Fund). Many schemes, such as the Botswana Pula Fund, have mixed purposes (see Box 15).

Box 15: The Botswana Pula Fund

The Pula Fund, established in 1994, is the oldest SWF in sub-Saharan Africa, and represents almost two-thirds of the region’s total SWF assets. It has had a broadly successful record, though there has been some criticism for not disclosing more information. As is also the case in Norway and Trinidad, the Botswanan fund is managed by the central bank – the Bank of Botswana – and not by an independent fund manager. Uniquely among SWFs, the responsibility for the fund is assigned to the bank’s Board of Governors.

Two main fiscal rules affect the fund’s operations. First, mineral revenues may only be used for public investment or saved in the Pula Fund – although it has been argued that, in reality, the fungibility of different revenue sources undermines this rule (see NRG I & CCSI 2014).²⁵ Second, an expenditure rule places a ceiling of 40 per cent of GDP on total government spending.

²⁵ The fungibility of revenue and expenditure means that revenue flow in one area can simply be offset by shifting allocation of funding to other areas – a dollar of tax has the same value and identity as a dollar from resource revenue, leaving the overall pattern of expenditure unchanged.

Managed mainly as a long-term investment portfolio, the fund takes revenue from any foreign exchange reserves that exceed Botswana's medium-term requirements and invests it in industrialised nations through public equity and fixed income instruments. The fund is precluded from making direct domestic investments, which is consistent with good practice that recognises the danger of undermining macroeconomic objectives. In this sense, the fund has a role in revenue stabilisation, although long-term saving is its main objective.

Source: Bank of Botswana (2015)

The purposes for which an SWF is intended will define the nature of its management systems and investment allocations. If the purpose is to accumulate long-term savings for use by future generations, the fund can accept a relatively high level of risk with the expectation of a higher long-term return (e.g. investing in long-term securities). If the purpose is to stabilise government revenue in the event of falls in commodity prices, investments will need to be more liquid and less risky.

Revenue stabilisation is a main purpose of most funds established in newly resource-rich countries in Africa. Such funds need to invest mainly in foreign assets (such as foreign government treasury bills) rather than domestic assets (such as shares in domestic businesses), for two main reasons. First, if the funds are invested in the domestic economy, this merely shifts expenditures from budget to off-budget – failing to reduce overall expenditures in boom periods, as is required to lessen potential volatility. Second, holding assets denominated in foreign currency helps to limit the impact on a country's exchange rate when the country experiences large external account surpluses as a result of a commodity boom. There may also be a separate concern that domestic investment could exceed the absorptive capacity of the economy.

SWFs that are used to stabilise government revenue need very clear rules governing the circumstances under which funds will be paid into and drawn down from the fund and made available to the budget. Their purpose is undermined if funds are not accumulated during boom periods or are drawn down without any major dip in commodity prices. Successful schemes, such as Chile's (see Box 12), have rules that are tightly enforced.²⁶ However, there are many examples of failure to set appropriate rules or to stand by those that are set.²⁷ As discussed above, Ghana had apparently strong rules but they were only weakly enforced, with the result that fiscal stabilisation was not achieved as intended. Precept 8 of the Natural Resource Charter notes:

There is no guarantee that future decision-makers will use these instruments for managing revenue volatility effectively. For instance, stabilization funds may be raided, or not replenished in boom times, while borrowing may quickly become unmanageable.

²⁶ Chile introduced its various budget rules initially in the early 2000s. At the outset, these were followed voluntarily by the government, rather than being a matter of legal or other constraint. The structural budget rule that governs the movement of funds from and to the SWF became a true institution only after 2006, when it was enshrined in the general framework in law, specifically the Fiscal Responsibility Act of 2006, which gave legal force to the role of the structural budget. Significantly, the Chilean government abided by the law when it was most difficult to do so politically during the period of high copper prices from 2006–08. This built up the balances in the fund, which was then able to make large injections into the economy after 2008 when the effects of the global financial crisis were at their peak (Frankel 2011).

²⁷ A report by the NRGi and the Columbia Center on Sustainable Investment (NRGI & CCSI 2014) notes some examples of breaches of rules: 'some funds provide far too little information, as in Botswana, Equatorial Guinea, Iran, Kuwait, Mexico, Russia and Qatar, despite these countries' subscription to the Santiago Principles, a set of voluntary good governance guidelines for sovereign wealth funds'; and 'Some governments also resist even the most basic operational rules, leaving them at greater risk of not fulfilling their macroeconomic objectives. The governments of Abu Dhabi (UAE), Azerbaijan, Botswana, Iran, Kuwait, and Russia, for example, have been unwilling to impose withdrawal rules on their respective funds, while the governments of Abu Dhabi and Botswana have not imposed deposit rules'.

The use of these instruments can be particularly opaque given their complexity and the ease with which financial transactions can be hidden or obscured from public scrutiny. Transparency measures in this area are particularly warranted. (NRGI 2015b: 29)

SWFs designed to help address volatility have had a mixed but generally poor record in lower-income countries, especially in Africa. There are two main reasons for this. One, as with Tanzania, is that many lower-income countries run budget deficits that windfalls from extractives are insufficient to cover, adding to pressure on SWFs to release funds to the budget in periods of tightness, even if the formal conditions for a draw-down have not been met. The other is the difficulty that technical managers face in standing up to strong political pressures – as with the example of Chad (see Box 14) – especially during election periods.

6.4 What might be the rules governing the investment and eventual draw-down of funds?

There needs to be a mandate or performance benchmark against which an SWF's management can be evaluated and held accountable. Many SWFs specify a target for returns after inflation or above the risk-free interest rate. For example, Norway's targeted return is linked to an explicit spending rule (for normal times) of 4 per cent in real terms. In Australia, the target is to exceed inflation by 4.5 per cent (i.e. a real return of 4.5 per cent). These targets do not limit the types of investment that investment managers can make.

One aspect of good practice that is often not followed – even in some well-established funds – is to make clear what conditions constitute 'normal times', where SWF capital can either not be withdrawn at all or only up to some maximum specified amount. This can provide clarity to fund managers on how much capital can be invested in less liquid assets.²⁸ If the SWF is to be used as a stabilisation tool, then good practice would be to specify the circumstances under which a draw-down for that purpose is permitted (e.g. a fall of a certain percentage in the price of the main export commodity).

An inherent problem is that SWFs are by definition public sector organisations that need to operate within a public sector culture, which may be one of relatively low pay, bureaucratic procedures and some inefficiency. Norway's SWF succeeded in creating a culture of unqualified professionalism.²⁹ Ang (2010) argues that the key to achieving this is to establish systems of management that emphasise responsibility and accountability by clearly defining targets and consequences for good or bad performance: 'such accountability requires the active tracking of the consequences of decisions, both strategic and at the portfolio level, of investments in different assets or managers relative to performance benchmarks'.

In African countries such as Tanzania, Uganda and Ghana, where there has been a generally mixed record in the management of public sector funds, it may also be useful to establish clarity about the things that an SWF should not attempt to do. As a passive investor that holds public money in trust, an SWF should not take any direct roles in the management of local companies, nor should it build or operate infrastructure, extract minerals or other natural resources, or provide services.

6.5 What might be the broader rules for the governance and accountability of the SWF?

²⁸ Interesting exceptions are the Russian government's raid on its fund in 2008/09 to help deal with unfunded pension liabilities, and Ireland's raid on its fund to help recapitalise its banks after the global financial crisis of the late 2000s.

²⁹ As Ang (2010) argues in discussing Norway, 'the professionalism and expertise of both the Ministry of Finance Asset Management Department, which oversees the SWF, and the fund's manager, NBIM, are outstanding and this is reflected in the excellent financial performance, low costs, and attention to investment management issues of special concern to Norway, such as ethical investing, corporate governance, and social issues.'

There are several different SWF governance models. One point of difference is transparency. At one extreme, Norway's fund – for which the Ministry of Finance is directly responsible to Parliament, with the fund itself being managed by a subdivision of the central bank, Norges Bank Investment Management (NBIM)³⁰ – is highly transparent, to build and sustain a high level of public trust in its integrity. In stark contrast, the laws of Kuwait make the disclosure of certain information concerning the fund of the Kuwait Investment Authority and its assets punishable by imprisonment. In Singapore, the Government of Singapore Investment Corporation was established in 1981 but published no annual report until 2009, and even then only reported broad averages of its investment returns.

Another point of difference is the extent to which responsibility is devolved from politicians to investment professionals. The Australian Government Future Fund was set up by the Future Fund Act 2006, independently of the government in a separately managed fund overseen by a Board of Guardians selected for their competence in investment management. As Ang (2010) notes, 'Australia's structure minimizes the discretion in the spending and management of the capital by politicians and moves the management of the money as close as possible to investment professionals.'

However, Ang (2010) points out that, in reality, 'enterprising politicians determined on spending away the capital locked in an SWF will always succeed no matter what legislative constraints are imposed.' He shows how this could happen in the cases of both Norway and Australia. Whatever governance rules are written into law or regulations, they will succeed only if the SWF enjoys robust political support to pursue its central mandate of transferring wealth from the present to the future.

While there is no optimal governance structure for an SWF that can be applied under all circumstances, there are 24 broad international guiding principles and practices for SWFs – known as the 'Santiago Principles', finalised in 2008 – to which 23 countries have so far subscribed (see Annex 1). The NREGI & CCSI (2014) distil their main governance principles as follows:

- setting clear objectives for the fund in an official document, preferably in legislation;
- establishing rules for deposits to and withdrawals from the fund in line with stated objectives, which act as a commitment mechanism;
- establishing investment rules to try to avoid excessive risks and prevent substantial losses;
- clearly stating the responsibilities of fund managers and ensuring no ethical breaches or conflicts of interest;
- regularly disclosing key information and audits to encourage compliance with fiscal and investment rules; and
- establishing strong oversight bodies to monitor fund behaviour and enforce rules.

While SWFs are appealing in their apparent simplicity and visibility, they can be complex in terms of the rules and structures established to manage them. As such, despite the current attention from countries anticipating resource revenue windfalls, as a means to offset volatility they should not be seen as a panacea for mitigating the risks of revenue uncertainty. The suitability of an SWF should be carefully considered and assessed against other options that may be less administratively burdensome and more efficient in achieving their objective – the maximisation of the cash savings from current revenue for future use.

³⁰ In Norway, the Ministry of Finance, specifies asset class benchmarks, which the dedicated funds manager, NBIM, implements. NBIM is tasked in effect with outperforming the benchmark set by the Ministry of Finance.

7. Conclusion

This paper has covered what we consider to be the most important macroeconomic and fiscal management implications for any country that decides to exploit its natural resources for the purposes of promoting economic development. The following six policy considerations reflect what we believe to be the most relevant issues for consideration at the sector dialogue, as each is likely to have a profound impact on public finances.

- *The implications of extractive industries for PFM practitioners start well before the onset of direct revenue accruing from the sale of resources.* The public finances will be affected by various planning decisions that are made prior to the onset of revenue, such as decisions regarding infrastructure, local content and industrial policy. Budget officials need to factor these planning issues into their thinking, in order to accommodate their implications for public revenue and expenditure management.
- *Once revenue begins to flow, a critical early issue is the decision regarding the balance between spending and saving.* Such a decision needs to take into account the absorptive capacity of the economy and the need to avoid the Dutch disease effects, as well as intergenerational equity considerations. This cuts to the heart of the matter for fiscal policy-makers, since this decision will determine, to a large extent, the degree of fiscal sustainability associated with the management of extractives revenue.
- *Another key decision is that relating to the composition of expenditure.* In order to deal with the problems of resource exhaustibility and the Dutch disease, policy-makers need to find innovative ways of allocating expenditures that promote long-term fiscal sustainability, as well as avoiding the deterioration of the non-resource economy. The composition of expenditure will partly determine the extent to which countries have something to show for their efforts once the resource has been depleted.
- *A longer-term challenge is the management of commodity price volatility.* This requires de-linking revenue from expenditure to avoid destabilising boom-and-bust economic cycles. By accumulating savings during the boom years and utilising them when resource revenue inflows fall short, countries may be able to avoid this problem. The adoption of a specific fiscal rule and/or an SWF may assist governments in achieving this balance.
- *Ideally, extractives revenue should be integrated within the existing PFM system, in order to maintain the integrity of the budget process.* While special arrangements (such as resource funds) may be warranted in certain circumstances, governments need to be careful in ensuring that such mechanisms do not lead to the fragmentation of the public finances, which can negatively impact on the efficiency of public expenditure.
- *Cutting across all of these challenges is the urgent priority of promoting accountability for decisions made and increasing the transparency of the sector.* It is critical that existing channels of public accountability are strengthened, in order for citizens to scrutinise government actions more effectively. Otherwise, the unique characteristics of the extractives sector will inevitably mean that there is a tendency for revenue to be misused.

By no means, is this an exhaustive set of challenges that countries must contend with. This paper has focused on a selection of issues that the authors consider to be the most critical at the current time. The sector dialogue, for which this paper will be a key input, will be a useful exercise in determining the relative importance of each of these issues, as well as identifying additional issues that may not have been covered in sufficient depth here.

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Annex 1: Sovereign Wealth Funds. Generally Accepted Principles and Practices (GAPP) – ‘Santiago Principles’

GAPP 1. Principle

The legal framework for the SWF should be sound and support its effective operation and the achievement of its stated objective(s).

GAPP 1.1. Sub-principle. The legal framework for the SWF should ensure legal soundness of the SWF and its transactions.

GAPP 1.2. Sub-principle. The key features of the SWF’s legal basis and structure, as well as the legal relationship between the SWF and other state bodies, should be publicly disclosed.

GAPP 2. Principle

The policy purpose of the SWF should be clearly defined and publicly disclosed.

GAPP 3. Principle

Where the SWF’s activities have significant direct domestic macroeconomic implications, those activities should be closely coordinated with the domestic fiscal and monetary authorities, so as to ensure consistency with the overall macroeconomic policies.

GAPP 4. Principle

There should be clear and publicly disclosed policies, rules, procedures, or arrangements in relation to the SWF’s general approach to funding, withdrawal, and spending operations.

GAPP 4.1. Sub-principle. The source of SWF funding should be publicly disclosed.

GAPP 4.2. Sub-principle. The general approach to withdrawals from the SWF and spending on behalf of the government should be publicly disclosed.

GAPP 5. Principle

The relevant statistical data pertaining to the SWF should be reported on a timely basis to the owner, or as otherwise required, for inclusion where appropriate in macroeconomic data sets.

GAPP 6. Principle

The governance framework for the SWF should be sound and establish a clear and effective division of roles and responsibilities in order to facilitate accountability and operational independence in the management of the SWF to pursue its objectives.

GAPP 7. Principle

The owner should set the objectives of the SWF, appoint the members of its governing body(ies) in accordance with clearly defined procedures, and exercise oversight over the SWF’s operations.

GAPP 8. Principle

The governing body(ies) should act in the best interests of the SWF, and have a clear mandate and adequate authority and competency to carry out its functions.

GAPP 9. Principle

The operational management of the SWF should implement the SWF's strategies in an independent manner and in accordance with clearly defined responsibilities.

GAPP 10. Principle

The accountability framework for the SWF's operations should be clearly defined in the relevant legislation, charter, other constitutive documents, or management agreement.

GAPP 11. Principle

An annual report and accompanying financial statements on the SWF's operations and performance should be prepared in a timely fashion and in accordance with recognized international or national accounting standards in a consistent manner.

GAPP 12. Principle

The SWF's operations and financial statements should be audited annually in accordance with recognized international or national auditing standards in a consistent manner.

GAPP 13. Principle

Professional and ethical standards should be clearly defined and made known to the members of the SWF's governing body(ies), management, and staff.

GAPP 14. Principle

Dealing with third parties for the purpose of the SWF's operational management should be based on economic and financial grounds, and follow clear rules and procedures.

GAPP 15. Principle

SWF operations and activities in host countries should be conducted in compliance with all applicable regulatory and disclosure requirements of the countries in which they operate.

GAPP 16. Principle

The governance framework and objectives, as well as the manner in which the SWF's management is operationally independent from the owner, should be publicly disclosed.

GAPP 17. Principle

Relevant financial information regarding the SWF should be publicly disclosed to demonstrate its economic and financial orientation, so as to contribute to stability in international financial markets and enhance trust in recipient countries.

GAPP 18. Principle

The SWF's investment policy should be clear and consistent with its defined objectives, risk tolerance, and investment strategy, as set by the owner or the governing body(ies), and be based on sound portfolio management principles.

GAPP 18.1. Sub-principle. The investment policy should guide the SWF's financial risk exposures and the possible use of leverage.

GAPP 18.2. Sub-principle. The investment policy should address the extent to which internal and/or external investment managers are used, the range of their activities and authority, and the process by which they are selected and their performance monitored.

GAPP 18.3. Sub-principle. A description of the investment policy of the SWF should be publicly disclosed.

GAPP 19. Principle

The SWF's investment decisions should aim to maximize risk-adjusted financial returns in a manner consistent with its investment policy, and based on economic and financial grounds.

GAPP 19.1. Sub-principle. If investment decisions are subject to *other than* economic and financial considerations, these should be clearly set out in the investment policy and be publicly disclosed.

GAPP 19.2. Sub-principle. The management of an SWF's assets should be consistent with what is generally accepted as sound asset management principles.

GAPP 20. Principle

The SWF should not seek or take advantage of privileged information or inappropriate influence by the broader government in competing with private entities.

GAPP 21. Principle

SWFs view shareholder ownership rights as a fundamental element of their equity investments' value. If an SWF chooses to exercise its ownership rights, it should do so in a manner that is consistent with its investment policy and protects the financial value of its investments. The SWF should publicly disclose its general approach to voting securities of listed entities, including the key factors guiding its exercise of ownership rights.

GAPP 22. Principle

The SWF should have a framework that identifies, assesses, and manages the risks of its operations.

GAPP 22.1. Sub-principle. The risk management framework should include reliable information and timely reporting systems, which should enable the adequate monitoring and management of relevant risks within acceptable parameters and levels, control and incentive mechanisms, codes of conduct, business continuity planning, and an independent audit function.

GAPP 22.2. Sub-principle. The general approach to the SWF's risk management framework should be publicly disclosed.

GAPP 23. Principle

The assets and investment performance (absolute and relative to benchmarks, if any) of the SWF should be measured and reported to the owner according to clearly defined principles or standards.

GAPP 24. Principle

A process of regular review of the implementation of the GAPP should be engaged in by or on behalf of the SWF.

Acknowledgements

This report was put together by the Oxford Policy Management for the policy dialogue on Extractives Revenue Management organised by the Collaborative Africa Budget Reform Initiative (CABRI). The report was written by Alan Roe, Marke Beare, Nicholas Travis and Esmeralda Sindou. Comments were provided by the CABRI Secretariat.

This project was funded with UK aid from the British people.

