Special fiscal institutions for resource-rich developing economies

The state of the debate and implications for policy and practice

Natasha Sharma and Tove Strauss

Research Report

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Overseas Development Institute
203 Blackfriars Road,
London SE1 8NJ, UK

Tel: +44 (0)20 7922 0300
Fax: +44 (0)20 7922 0399
www.odi.org.uk

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Abbreviations

ABFA	Annual Budget Funding Amount (Ghana)
CODELCO	Corporación Nacional del Cobre de Chile (National Copper Corporation of Chile)
EITI	Extractive Industries Transparency Initiative
ESI	Estimated Sustainable Income (Timor-Leste)
FRL	Fiscal Responsibility Law
FSF	Fiscal Sustainability Framework
GNPC	Ghana National Petroleum Corporation
GPF	Ghana Petroleum Funds
LTDP	Long-term Development Plan (Ghana)
MoFEP	Ministry of Finance & Economic Planning (Ghana)
MTDS	Medium-term Development Strategy (Ghana)
PFM	Public Financial Management
PIAC	Public Interest and Accountability Committee (Ghana)
PIH	Permanent Income Hypothesis
PRMA	Petroleum Revenue Management Act (Ghana)
RRDE	Resource-Rich Developing Economy
SFI	Special Fiscal Institution

Executive summary

Natural resources—defined as non-renewable resources such as hydrocarbons and minerals—are considered to be 'gifts of nature'. If managed correctly, natural resources have the potential to transform a resource-rich developing economy (RRDE) by increasing the overall gross domestic product and reducing reliance on external assistance. However, there are special characteristics of natural resource wealth which make it challenging to manage. From a macroeconomic and budgetary perspective, these challenges include price volatility, the risk of 'Dutch disease' and extraction from a finite resource. From a political economy perspective, some of the challenges include increased likelihood of an undemocratic government, prevalence of a 'rentier state' where the state is not accountable to citizens, pressures to spend within a short-term horizon to maintain support, and a greater likelihood of low-quality institutions being prevalent.

To address some of these challenges, there has been increasing interest in how institutional mechanisms that constrain the discretion of expenditure policies can promote fiscal discipline. Such mechanisms are referred to as special fiscal institutions (SFIs) and typically include fiscal rules, resource funds, fiscal responsibility laws, and fiscal advisory councils. In many cases, more than one SFI is implemented at a time. The countries considered to be most successful in implementing SFIs to manage natural resource wealth are Norway and Chile. However, as a number of developing economies—including fragile states—are making discoveries of natural resource wealth, there is an urgent need to consider the types of fiscal arrangements and institutional mechanisms that are appropriate in these environments.

For SFIs to be effectively implemented, the prevalence of a stable institutional environment with a robust public financial management (PFM) system that has strong internal controls and a political commitment to fiscal discipline are considered to be crucial. Given that these characteristics may not exist in RRDEs—and even less so in fragile states—some have questioned whether SFIs are appropriate in these contexts. Therefore, rather than advising RRDEs to embark on an ambitious process of institutional reforms based on 'best international practice', this paper recognises the importance of the context-specific political economy environment and the informal procedures and rules that are likely to influence natural resource wealth management.

In light of this, the paper considers the options available for RRDEs when deciding whether to implement SFIs to manage their natural resource wealth. The first option RRDEs can consider is to acknowledge that the prerequisites for effective implementation of SFIs are not in place, and therefore not pursue implementation. A second option is to implement a policy guideline to enhance fiscal discipline without formally committing to a SFI until there has been a learning process. A third option could be to design and implement a SFI and learn about what works through an iterative process. Each of these choices has its merits and disadvantages.

Regardless of which option is chosen, a decision on whether to pursue a SFI must be made in the context of what the appropriate mechanisms are to achieve the overall objectives of the fiscal policy framework, such as whether to stabilise macroeconomic volatility, frontload expenditure to address capital and labour constraints, save for future generations, and/or initiate cash transfers, etc. In many cases, the value of a peer learning relationship has been useful, such as Norway and Timor-Leste, Norway and Ghana, and Chile and Mongolia. Through such engagements, RRDEs are advised to consider how other country experiences can be relevant or applicable to the local country context.

If a RRDE does decide to adopt a SFI, either through a policy guideline or as a formal rule/procedure/law/council, a number of factors are important to consider. First, any type of SFI should be integrated with the overall PFM system. At a minimum this includes: integrating any natural resource revenue held in a 'resource fund' with the national budget process; ensuring there is a transparent presentation of resource revenue in the budget; and avoiding the practice of earmarking resource revenue for specific expenditure items.

Second, regarding the actual choice and design of a SFI, the evidence on whether one type of SFI should be selected over another is inconclusive, and in many countries a combination of SFIs is used, depending on the objectives of the fiscal policy framework. Based on country experiences, it has been noted that fiscal rules are more likely to be implemented if they are simple to understand and if there is some degree of flexibility—where adjustments would need to be justified—to respond to changes in the economy. Numerical fiscal rules tend to be more effective if accompanied with procedural rules. In general, a fiscal responsibility

law should only be implemented following a demonstrable commitment to a fiscal policy guideline or rule. However, in a fragile state such as Timor-Leste, the focus was first on the legal framework, which was also used as an opportunity to define roles and responsibilities for managing natural resource wealth. Overall, the risks of implementing a fiscal advisory council in RRDEs have also been noted: they draw on potentially scarce human resources and they can become too powerful if they are involved in decision-making processes. Moreover, the use of separate independent oversight committees and/or audits should always be encouraged.

Third, in RRDEs considered more successful in managing natural resource revenue, there has been considerable public investment in promoting transparency. These efforts should be considered as part of broader fiscal transparency measures, such as the Open Budget Initiative or the Global Initiative for Fiscal Transparency. In countries where these initiatives have gained traction, they can be used as an entry point for promoting fiscal transparency of natural resource wealth. The Extractive Industries Transparency Initiative also provides a structured procedure for RRDEs to engage in transparency measures. Overall, effective public consultation in the management of natural resource wealth is seen to be important for generating discussion on the overall fiscal objectives, and thus setting expectations around how this revenue stream will be managed.

In conclusion, this paper does not recommend introducing SFIs as a single solution to the challenges of managing natural resource wealth, nor does it suggest that ‘best practices’ should be ‘carbon copied’ from other countries. Rather, the paper recognises the value in sharing experiences and for RRDEs to engage in discussions about what types of institutions would be most appropriate to their own political economy environment, given the formal and informal procedures that prevail. In this respect, policy-makers and advisors should consider the options available—no fiscal rule, a fiscal policy guideline, or a formal SFI—and assess their merits based on the overall fiscal policy framework and the incentives to introduce such mechanisms in the individual country context.

Introduction

Natural resources—defined as non-renewable resources such as hydrocarbons and minerals—are considered to be 'gifts of nature'. If managed correctly, the discovery of such resources provides the potential to transform a country's economy by increasing its net assets and the overall gross domestic product. This can ensure the availability of financial resources for development priorities and reduce reliance on external assistance in developing countries and fragile states.

However, management of natural resource wealth is challenging, and the evidence to date has been mixed, leaving some to question whether natural resource wealth is a blessing or a curse. The term 'resource curse' was coined by Auty in 1993, describing a phenomenon whereby natural resource wealth is associated with economic stagnation, waste and conflict. These challenges are sometimes compounded in developing economies, which may not have the institutional environment, robust PFM system, or capacity to efficiently manage natural resource wealth.

The existence of a resource curse is, however, not a foregone conclusion. Given the special characteristics of natural resource wealth, such as price volatility, uncertainty and extraction from a finite resource, policy-makers and advisers are increasingly looking at options for managing this revenue stream, and the types of fiscal instruments that can be applied. The evidence is evolving and while it is too early to reach firm conclusions, examples of better management of natural resources are emerging, including in some developing economies such as Botswana, Ghana, Timor-Leste and Trinidad and Tobago.

In this regard, there is increasing interest in the role of SFIs for promoting fiscal discipline in resource-rich countries. SFIs are essentially institutional mechanisms that constrain the discretion of expenditure policies to enhance fiscal discipline (Corbacho and Ter-Minassian, 2013). Different types of SFIs can be implemented in resource-rich countries: fiscal rules, resource funds, fiscal responsibility laws and fiscal advisory councils.[1] The countries considered to be most successful in implementing SFIs to improve natural resource wealth management are Norway and Chile. However, with new discoveries of natural resource wealth arising in developing economies and fragile states, how to effectively manage this revenue stream has become an urgent challenge.

The question of how to manage natural resource wealth is particularly pertinent in fragile states. Countries such as Liberia and Sierra Leone are expected to make significant discoveries of petroleum and iron ore. Other fragile states are already natural-resource producing, such as the Democratic Republic of Congo, South Sudan, Afghanistan, Equatorial Guinea and Yemen to name a few. These states are often characterised by constant leadership challenges, a poor institutional framework with informal procedures playing a greater role in policy decisions than formal rules, low levels of capacity, and multiplicity in revenue flows, including humanitarian assistance and illicit revenue flows (Porter et al., 2011). Indeed, some argue that countries with around one-quarter of gross domestic product exports coming from natural resource wealth are at a greater risk of civil conflict (Collier, 2006). Thus, in order to meet the challenges of peace- and state-building and to avoid the risk of conflict, these states must gain the confidence of citizens by demonstrating that they can effectively manage public resources, including from natural resource wealth, to enhance development outcomes.

With an audience of policy-makers and advisers in mind, this paper aims to address how SFIs can be implemented in RRDEs as a mechanism for managing their resource wealth. The paper has three objectives: (1) to explain the special characteristics of natural resource wealth and the challenges of managing this revenue stream in developing economies; (2) to provide an introduction to SFIs in the context of natural resource wealth with illustrative examples; and (3) to present guidance on the factors policy-makers in RRDEs need to consider in designing and implementing SFIs. The objective of this paper is, however, *not* to provide advice on *the design of the optimal fiscal policy framework,* such as, for example, how much a country should invest, if this should be in domestic assets or overseas, or if cash transfers should be initiated to redistribute natural resource wealth. These are much broader topic areas and are beyond the scope of this paper.[2]

1 The specific characteristics of these SFIs are described in more detail in Part 3 of this paper.
2 Baunsgaard et al. (2012) and Ghura, Pattillo et al. (2012a) provide useful examinations of the options for fiscal policy frameworks in RRDEs.

In the process of drafting this paper, we have reviewed available literature on SFIs for natural resource wealth and have interviewed a number of advisors currently active in this field. We also present three country case studies: Chile, Timor-Leste and Ghana, which all have experience in implementing SFIs to manage their natural resource wealth. These countries have been selected as they are developing economies or have implemented SFIs during a post-conflict period, and have shown indications of success in the management of natural resource wealth. The aim of the case studies is to demonstrate the processes these countries undertook in implementing SFIs; the objective is not to directly apply lessons learned, as all policy advice in this area must consider the objectives of the overall fiscal policy framework and the country-specific political economy environment.

The paper is structured as follows: the first part discusses some of the particular challenges of natural resource wealth management in RRDEs; the second part discusses SFIs in the context of natural resource wealth; the third part provides an introduction to different types of SFIs and experiences with implementation, illustrated with country examples; and the fourth part draws on these experiences to present some of the factors policy-makers need to consider in designing and implementing SFIs in RRDEs. The fifth and final part presents the conclusions. The three country cases are presented in the Annexes.

1 Managing natural resource wealth

Natural resource wealth is characterised by volatility, uncertainty and exhaustibility, which present macroeconomic and budgetary challenges. On the macroeconomic side, the challenge of avoiding 'Dutch disease' has been well documented as being a feature of the resource curse. Dutch disease can occur when activity is drawn away from the non-resource sector, due to the impact of the rising value of resource exports on the exchange rates and competitiveness (IMF, 2007). Examples that stand out are Equatorial Guinea and Nigeria. For example, in Equatorial Guinea, cocoa and coffee production declined from around 60% of GDP in 1991 to less than 9% of GDP in ten years; in Nigeria, oil exports caused a rapid collapse of agriculture exports between 1970 and 2000 (Dabán and Hélis, 2009).

From a budgetary perspective, the volatility of resource revenues linked to commodity prices can make it challenging to accurately estimate revenue levels, and then to plan, budget and execute expenditures. The ability to estimate resource reserves and revenue flows may require particular expertise and industry knowledge. Unexpected resource revenue can lead to waste, as there can be a pressure for the administration to spend even when there are non-viable projects, or there is lack of absorptive capacity. It can also lead to boom and bust cycles (upward and downward adjustment of expenditure) as well as excessive borrowing (a need to cut the budget during busts), as was the case for example in Mexico, which borrowed against future expected oil revenue and in Nigeria, which borrowed very heavily to finance public consumption in the 1970s and then suffered an oil price shock in the 1980s (Dabán and Hélis, 2009).

As the resources themselves are finite, decisions also have to be made on whether to use the resource wealth to meet the needs of the current generation or those of future generations, or a combination of both. These challenges of managing natural resource wealth are often exacerbated in the context of developing economies, which may be characterized by weak institutions, including poor PFM systems, pressures to spend within a short-term horizon, and lack of capacity.

Until relatively recently, the IMF's dominant policy advice to RRDEs was to focus on expenditure smoothing and save most of the resource wealth for future generations (see discussion in Part 3 on the so-called Permanent Income Hypothesis, (PIH)). However, this approach has been criticised by, for example, Collier et al. (2009) and in an IMF internal evaluation (Ghura, Pattillo et al., 2012a and 2012b) for neglecting the needs of the current generation, as well as the potential positive effect on economic growth from investment in both physical and human capital. In response to this critique, the IMF's policy advice in this area has recently been revised.

From a political economy perspective, there is evolving literature on why natural resource wealth is challenging to manage, and the causes of the resource curse. This literature looks at the effects of natural resource wealth on political behaviour and fiscal management (see Rosser, 2006 for a literature review on the political economy of the resource curse).[3] There is evidence that the existence of natural resource wealth in developing economies affects the type of political regime, making it more likely to be authoritarian and have breakdowns in democracy (Ross, 2001).

This lack of accountability between the state and citizens is said to promote a 'rentier state'. As governments obtain revenue from natural resource wealth they do not have to tax citizens, and so in turn they become less accountable to them (Moore, 2004). In this context, a government may not make expenditure decisions that are in the interest of its citizens, such as providing public goods or improving the productivity of the economy. Karl (2006) has gone further to coin the term 'petro-states' which refers to states that are formed during the period of resource extraction, and are particularly prevalent in demonstrating the rentier state culture. It is also argued that natural resource wealth provides opportunities for rent-seeking and utility maximisation of political actors (Karl, 1997; Ross, 2001). Political leaders are susceptible to using resource rents to extend influence through patronage, and to spend on wasteful but politically important projects, otherwise known as 'white elephants'. These observations may be relevant in fragile states that are extracting resources as well as strengthening—or in some cases developing—institutions following a period of conflict. This could, for example, apply to RRDEs such as South Sudan, Timor-Leste, Liberia and Sierra Leone, although evidence to date does not suggest that this is a foregone conclusion. On the contrary,

3 Some of the selected features of this debate are also discussed in Part 3, which points out some salient features that are particularly relevant to the implementation of SFIs in RRDEs.

Timor-Leste has actively implemented transparency measures in the management of its natural resources, and has been commended for encouraging public participation in the process (see Annex 2).

The role and quality of institutions also features prominently in the resource curse literature (see Rosser, 2006). In this context 'institutions' refers to *'mechanisms that promote the accountability of decision-makers'.* Sala-i-Martin and Subramanian (2003) show that an abundance of petroleum and mineral resources appears to have been particularly detrimental to the quality of institutions.[4] Certain scholars provide empirical evidence to argue that the quality of institutions is central to whether natural resource wealth is managed effectively, and considered to be a blessing or curse. When institutions are dysfunctional, resource abundance is a curse; when institutions are good, resource abundance is a blessing (Mehlum, Moene and Torvik, 2005).[5] In this context good institutions are argued to be a prerequisite for the effective management of natural resource wealth (Karl, 2006). J. A. Robinson et al. (2006) also argue that countries with institutions that promote accountability and state competence will benefit from resource booms and experience faster growth. This implies that a discussion on the implementation of SFIs must be within the context of the broader institutional environment.

4 This is measured as a composite indicator comprising different elements including protection of property rights and strength of the rule of law.

5 In this study, the institutional quality index is derived from using an un-weighted average of five indices from Political Risk Services: rule of law, bureaucratic quality, corruption in government, risk of expropriation and risk of government repudiation of contracts, p.14.

2 Special fiscal institutions in the context of natural resource wealth

Given the challenges in managing natural resource wealth, policy-makers and advisers are increasingly looking at the role of SFIs—such as fiscal rules, resource funds, fiscal responsibility laws and fiscal advisory councils—to enhance fiscal discipline. SFIs, in general, have increased in prominence. Based on an IMF dataset from 2009, 80 countries had national and/or supranational fiscal rules: 21 advanced; 33 emerging markets; and 26 low-income countries. In contrast, in 1990, only seven countries used fiscal rules. In addition, the average number of rules per country has increased as more and more countries are implementing not only a single fiscal rule, but a combination of rules.

However, the value of SFIs as formal institutions for promoting fiscal discipline has been questioned. Some argue that implementing fiscal rules should not really be the basis for public finance and if governments are committed to fiscal discipline they can exercise control through applying a discretionary approach. In this regard, governments can obtain policy credibility without formal fiscal rules or legislative frameworks (Kopits, 2001). This point has been demonstrated in the Chilean example. In the initial stages, a structural balance rule was adopted as a policy guideline, which set an annual structural balance target for the budget at a surplus of 1% of GDP. This had the objectives of promoting fiscal and macroeconomic stability by protecting against the cyclical variations in copper prices, and improving the net asset position of the Chilean Central Bank to meet contingent obligations and cover the deficit. The structural balance rule was implemented on a voluntary basis (Ghura, Pattillo et al., 2012b). The authorities applied and modified this rule over a five-year period, and then made a decision to legalise the fiscal rule after going through this important learning period (Kopits, 2001).

The implementation of SFIs should be considered within the context of the broader PFM system. In order for SFIs to be used effectively, a robust and well-developed PFM system with strong internal controls is considered to be a prerequisite by many. In the forthcoming *International Handbook of Public Financial Management*, Corbacho and Ter-Minassian (2013) particularly emphasise: (i) the critical importance of consistency between the budget and the fiscal rule; (ii) appropriate recording and corrective action during budget execution; and (iii) adequate and transparent enforcement mechanisms. No matter how perfectly designed a rule is, the authors argue that it cannot be successfully implemented if the existing PFM institutions are not sufficiently strong, and the rule can therefore quickly lose relevance and credibility (Corbacho and Ter-Minassian, 2013). In addition, it has been argued that more advanced forms of budgeting, such as a medium-term expenditure framework, may not only help expand the investment planning horizon for RRDEs by connecting annual budgets to medium-term policies (Ossowski, 2013),[6] but also improve the effectiveness of fiscal rules, as budget horizons need to extend beyond a single year, and strong monitoring and compliance procedures are required (Schick, 2003).

That said, most RRDEs lack a PFM system and public administration competent enough to design and implement a sound fiscal strategy (Dabán and Hélis, 2010). A study that analyses the dimensions of Public Expenditure and Financial Accountability (PEFA) framework scores found that oil producing economies did not perform as well as non-resource-rich developing economies (Andrews, 2011). This situation of poor PFM performance is exacerbated in fragile states (Porter et al., 2010). In RRDEs—and particularly in fragile states—there is likely to be an issue of low human capacity, which may also affect implementation of PFM and other institutional reforms. Therefore, if SFIs are implemented in RRDEs, it is likely to be in a context where institutions and PFM systems are weak, and where the basic internal controls are not in place.

Given that SFIs ultimately constrain the parameters of policy-making, in countries where there is no genuine political will or commitment to fiscal discipline, the risk is that the rules may be broken. In such situations, it may be in the interest of an incumbent government in a RRDE to further political objectives by increasing expenditures, above and beyond what is specified in the SFI (Drazen, 2002). Therefore, in order for fiscal rules to be implemented as intended, they require broad support, as they not only act as a binding constraint for the current administration and parliament, but also for a changed political composition in these institutions over time (Ljungman, 2008).

6 Ossowski (2013) further emphasises the need for the medium-term expenditure framework to be based on a long-run sustainability assessment, including for the resources still to be exploited, as well as a long-run fiscal risk analysis.

In RRDEs, the risk of breaking rules may be particularly pervasive given the potential lack of accountability between decision-makers and citizens. Indeed, it has been observed that the incentives to break fiscal rules for natural resource wealth are greatest in societies with weak institutions, low levels of democracy, deep social divisions, and where political instability is high (Humphreys and Sandbu, 2007). This is particularly pervasive in countries where: (i) a large part of the population lives in poverty with a high discount rate; (ii) small groups can be politically powerful and affect policy choices; (iii) governments have the discretion to finance patronage networks to increase their support base; and (iv) the population has limited participation in the policy-making process due to low education levels and lack of transparency (Humphreys and Sandbu, 2007).

Based on this discussion, one could quite reasonably question whether SFIs are appropriate or relevant for RRDEs as institutional mechanisms to increase fiscal discipline. To explore this further, the discussion in this paper will consider two potential advantages specifically of fiscal rules: their importance as a 'signal' to commit to fiscal discipline, and the value of embarking on the fiscal rules 'process' even though the end objective of achieving fiscal discipline may not be fully realised. To assess how relevant these potential benefits are for the context of RRDEs, the discussion will draw on the recent debates on institutional reforms, particularly regarding 'isomorphism' and 'isomorphic mimicry'. Isomorphism has been used to describe the negative consequences of externally influenced (and donor-assisted) reform efforts to establish formal institutions in developing countries, where, instead of serving functional needs when embarking on institutional reforms, states in developing countries change in order to imitate (Pritchett, Woolcock et al., 2010, Andrews, 2009).[7] By extension, isomorphic mimicry refers to when organisational change occurs by mimicry instead of functional need.

One potential benefit, it is argued, of pursuing a SFI is for a government to 'signal' a commitment to fiscal discipline (Debrun and Kumar, 2007). Using democratically elected European Union governments as the basis of their study, Debrun and Kumar (2007) argue that rules can provide a useful signal that a government can competently achieve fiscal discipline as they reduce the risk that voters will punish it for incompetence in the event of adverse budgetary outcomes.

However, as discussed in Part 1, governments in RRDEs are less likely to be democratically elected and accountable to voters and so the extent to which a SFI should be implemented in order to serve as a 'signalling' function is questionable. Furthermore, the limitations of 'signalling' have been documented in the recent debates on institutional reform (Andrews, 2013). It is argued that developing countries actively engage in reform measures imposed by development partners to strengthen their institutions by following blueprints for reforms in other countries, even though the measures being proposed are ill-suited for the political economy environment and unlikely to be successful. They do so in order to 'signal' commitment to reform and in return receive other rewards, such as, for example, debt relief and budget support, and that while they may make governments look better in the short term, they may not make governments function better in the long term (Andrews, 2013).

A second potential benefit of fiscal rules considers the importance of 'processes' (Schick, 2003). The argument is that even though rules cannot ignore political and economic pressures, they may affect the way these pressures are processed in budget decision-making and therefore will have *some* effect even if the fiscal rules do not fully achieve the desired objective (Schick, 2003). If there is a high degree of public awareness of the fiscal rules, the cost or the implications of breaking the rules will need to be considered in terms of public perceptions, which can be a valuable process in itself.

The importance of 'processes' and public participation in the discussion over fiscal rules and SFIs more broadly, has been highlighted by initiatives such as the Natural Resource Charter, a global initiative which aims to support better governance of natural resource management, particularly in RRDEs. To this end, the Natural Resource Charter stresses the importance that developing countries go through a 'self-assessment' process to identify areas of national priority when discussing natural resource management, and take action to strengthen governance. This involves improved cooperation and partnership among key stakeholders, including government at the national and sub-national levels, companies involved in resource extraction, civil society, the legislature, donors and the international community.

The argument on the value of 'processes' does appear to have merit with regard to SFIs for natural resource wealth. To a great extent, the Chilean example demonstrates that the authorities had an opportunity to implement a fiscal rule and to learn from its implementation before formally adopting it into law. The Chilean

7 See Krause (2013) for a forthcoming ODI discussion note on these issues.

authorities were able to change the computation of the fiscal rule so that it corresponded to changes in the economy, and the methodology was designed in a transparent way. There is now also a broad public understanding on the fiscal rule. The example of Botswana also shows that the government has, over time, experimented with various fiscal rules—both formal and informal—with varying degrees of success, starting with the 'Principle of Sustainable Budgeting' in 1994, moving on to the construction of the Sustainable Budget Index (SBI), and introducing new fiscal rules in 2006 as part of the Mid-term Review of National Development Plan 9 (Kojo, 2010). In the case of Timor-Leste, a process of adaptation has also been followed. To facilitate such a process, the authorities developed a peer-learning relationship with the Norwegian government. This did not mean that the Timor-Leste authorities adopted the institutions developed in Norway. Rather, the country was exposed to how Norway managed natural resource wealth, and has now adapted its own procedures in response to the local context. Whereas Norway adopts the PIH, the Timor-Leste authorities have followed a modified version of this fiscal framework, and thus designed the fiscal rule accordingly so that investment can be front-loaded to address the current development gaps. This process of changing and revising the fiscal rule has been accomplished through a consultative and transparent process that involved key agents.

However, as there are still relatively few examples of successful implementation of SFIs in RRDEs, it would be premature to arrive at a general conclusion that SFIs, for managing natural resource wealth, are a good thing if they are implemented and designed through consultative processes and trial and error, based on the limited sample available to date. Hence, at this stage, it is useful to reflect on the recent debates on institutional reform in developing countries. Critics of 'isomorphic mimicry' emphasise the importance of real problem-oriented change. Andrews (2013) shows that where examples of reforms have had real positive impacts and led to desired changes in government, there have been three dimensions: (1) problem-driven learning; (2) action-based learning where agents can see what works and why; and (3) broad sets of mostly local actors are engaged with the reform (Andrews, 2013). Therefore, by drawing on the broader experience of institutional reform, the importance of 'processes' and undertaking an iterative learning process does appear to be relevant for RRDEs when considering the implementation of SFIs to manage natural resource wealth.

This discussion suggests that policy-makers and advisers supporting them have a number of options to consider regarding implementing SFIs in the context of managing natural resource wealth: (i) to recognise the requirements for successful implementation of SFIs and decide that this may not be the appropriate time to pursue their design and implementation; (ii) decide to follow a 'policy guideline' to enhance fiscal discipline without formally committing to a SFI until the country has benefited from a learning process; or (iii) decide to design and implement a SFI and learn about what works through an iterative process.

3 Introduction to different types of special fiscal institutions

If countries decide to implement a SFI they must consider the main objectives of the fiscal policy for managing their natural resource wealth, such as macroeconomic stabilisation, reducing revenue volatility, increasing investment, containing expenditures, and/or saving for future generations. Within the broader fiscal framework, there are different types of SFIs—fiscal rules, resource funds, fiscal responsibility laws and fiscal advisory councils—that can be implemented to meet these particular objectives. Often a combination of SFIs is implemented simultaneously and in a complementary way.

Box 1: Examples of fiscal frameworks for resource-rich countries

Permanent income hypothesis

Many resource-rich countries have typically relied on the so-called PIH for guiding their fiscal policy frameworks and establishing fiscal benchmarks. The PIH implies that, for a country with *only* resource revenues, the inter-temporal budget constraint is satisfied when the yearly spending (i.e., the non-resource primary deficit) is limited to the eternal value of resource wealth (i.e., the present value of all future resource revenue) (Baunsgaard et al., 2012). The PIH does not distinguish between current and capital spending.

In the extreme case—the so called Bird-in-Hand approach—the additional expenditure to be financed by the resource revenues is set to be equal to the accumulating financial assets (i.e., the interest earned on the financial assets generated from the resources that have been extracted), which leads to a back-loading of the spending path. A country that has successfully implemented the PIH is Norway, where the Bird-in-Hand approach is applied.

Modified PIH

The PIH approach has, however, been criticised for setting benchmarks that are too tight for capital-constrained RRDEs. As argued e.g., by Collier et al. (2009), Collier (2011, 2012), and Ghura and Pattillo et al. (2012a), standard consumption-spending/investment paths are not optimal for resource-rich, low per capita income, and capital-constrained countries. In response to this critique, two alternatives to the traditional PIH approach have been developed.

The so-called 'modified PIH' allows for an initial scaling up of spending to meet immediate demands in poor countries, including both for consumption and public investment. However, fiscal policy remains anchored to an estimate of the long-term sustainable use of resource revenue, although spending can be front-loaded and financed through a drawdown from resource revenues, thereby reducing spending in future years. This approach has been applied in Timor-Leste, where the authorities are frontloading capital spending to improve infrastructure (Ghura and Pattillo et al., 2012b).

Fiscal sustainability framework

The fiscal sustainability framework (FSF) aims to stabilise net resource wealth over a longer term than the PIH. Similar to the modified PIH, the FSF also takes into account the inter-temporal budget constraint, although it allows for an actual drawdown of government wealth accumulated from the natural resources. The rationale for this drawdown is that public spending can be stabilised at a higher level because growth-enhancing domestic public investment (e.g., in infrastructure and human capital) will have 'fiscal returns' in the form of larger non-resource revenues. Moreover, it is frequently argued that some frontloading of consumption spending to benefit the current poor may also be welfare enhancing as their marginal utility of consumption is assumed to be higher than that of future potentially richer generations. Hence, the principal challenge for RRDEs is how the depleting resource wealth can be transformed into a range of other assets that will support continued development. Therefore, attention to the quality of public investment is crucial (Ghura and Pattillo et al., 2012a) and issues related to absorptive capacity must be carefully considered.

For a poor country with a finite reserve horizon for its natural resources, the critical decision when designing its fiscal policy is how much to consume and how much to save or invest. Three distinct fiscal frameworks have emerged in the recent literature (see e.g., Collier et al., 2009; Collier, 2011, 2012; and Ghura, Pattillo et al., 2012a) to frame the policy dialogue in RRDEs: the PIH, the modified PIH, and the fiscal sustainability framework (FSF). The main rationale behind the PIH is that resource wealth should be preserved for all future generations and the country should therefore only spend at a level consistent with its expected long-term income from the natural resource wealth. However, the PIH approach has been criticised for setting benchmarks that are too tight for capital-constrained RRDEs as these countries are poor and may need to raise the level of spending on for example, infrastructure, health and education to promote growth and

improve service delivery during the early stages of resource extraction. Thus, the modified PIH and the FSF both allow for additional upfront spending. The three frameworks are presented in more detail in Box 1, broadly adapted from Ghura, Pattillo et al. (2012a).

While the three fiscal frameworks described in Box 1 take into consideration intergenerational equity, they are all based on sophisticated calculations to estimate the net present value of a country's natural resource wealth. As prices and production levels fluctuate, production techniques improve, and resource reserve estimates change, it is in practice, impossible for a country to accurately estimate the value of its resource wealth and thereby determine the optimal spending path. Nevertheless, despite their imperfections, the various approaches can still be useful for countries with finite reserve horizons to guide their fiscal policy when they are susceptible to macroeconomic volatility, have absorptive capacity constraints, and/or suffer from low levels of physical and human capital. Norway, Timor-Leste, São Tomé and Príncipe, Gabon, and Trinidad and Tobago all use various versions of the PIH approach to manage their resource revenues (Dabán and Hélis, 2009). However, for countries with very long lasting resource reserves, (e.g., Saudi Arabia) sustainability is naturally not of equal importance for their fiscal policy stance.

A range of SFIs are currently being implemented in resource-rich countries to facilitate implementation of a selected fiscal policy—with varying degrees of success. Depending on the challenges faced by a particular RRDE, some SFIs may be more appropriate than others, as deliberated upon below:

3.1 Fiscal rules

Fiscal rules are typically defined in terms of an indicator of overall fiscal performance (Kopits and Symansky, 1998). There are two distinct sets of fiscal rules: (1) restrictions or rules on the procedure by which fiscal decisions are made; and (2) quantitative constraints on fiscal policy. Many countries operate procedural and numerical rules in tandem (Schaechter et al., 2012).

The choice of fiscal rule varies according to country-specific needs, institutional capacity and exposure to external shocks. In developed economies, there appears to be a preference for flexibility—according to an IMF study (2009), more than 25% of the advanced economies had cyclically adjusted balance rules, compared to only 10% of emerging economies, and none of the developing countries. In more than 30% of the developing countries covered by the IMF study, fiscal rules excluded public investment and other poverty-reduction spending aggregates. Table 1 provides some examples of numerical fiscal rules that have been implemented in various resource-rich countries. The table also shows some of the pros and cons related to implementation of these rules.

With regard to the choice of fiscal rule, much depends on whether a pro-cyclical or counter-cyclical fiscal stance is taken. In the past, most RRDEs preferred the former, but in countries where budget institutions, fiscal rules and political and economic indicators have significantly improved, there has been a move towards the latter (Ghura, Pattillo et al., 2012b). Fiscal rules that are rigid have often been subject to change (Alaska, Alberta, Kazakhstan, Mexico, Oman, Papua New Guinea, Russia, Trinidad and Tobago and Venezuela), bypassing (Gabon), or elimination (Chad, Ecuador and Papua New Guinea), particularly during times of exogenous shocks, shifting priorities and objectives, and increased pressures to spend (IMF, 2007). These findings indicate that introducing some degree of flexibility in the design of a fiscal rule may increase the likelihood of success in RRDEs, which are often subject to shocks, shifting priorities and spending pressures.

3.2 Procedural fiscal rules

A procedural fiscal rule stipulates the principles and associated practices of transparency and accountability that should guide the design and implementation of fiscal policy. Procedural rules may cover both the general procedures by which fiscal policy is formulated and procedures to help ensure that policy rules are actually executed, with a view to establishing good practices, raising predictability, and increasing transparency of the budgetary process. Typical procedural rules include: a 'hierarchical' budget formulation process, for example, where more power is given to the Ministry of Finance than to the line ministries; transparency requirements in the budget document; and distinct amendment rules for budget formulation and approval.

While procedural rules alone may be insufficient to strengthen fiscal policies, they can play an important role in creating consensus for fiscal reforms. A procedural fiscal rule can also be instrumental to the budget process by providing power to those who have incentives to deliver fiscal discipline, identifying weaknesses

in fiscal institutions and procedures, and increasing accountability to voters (IMF, 2005).

3.3 Numerical fiscal rules

The use of numerical fiscal rules in resource-rich countries is quite widespread with varying degrees of success, as indicated in Table 1 below. However, fiscal rules that target the overall budget balance or the current balance are not suitable for RRDEs as they are pro-cyclical and the balances would be particularly affected by resource price volatility (Ossowski, 2013). The most common numerical limits in RRDEs include the non-resource primary balance rule, non-resource current balance rule, price-based rule, structural budget balance rule, expenditure rule (see Box 2),[8] and procedural rules related to the establishment and use of resource funds. Several of these rules are being anchored to the alternative PIH approaches. The performance of some of these rules has at times been incompatible with the existing PFM system (Ossowski, 2013), for example in Ecuador, extensive revenue earmarking was incompatible with a fiscal rule that mandated a gradual reduction of the non-resource deficit; and in Equatorial Guinea, a non-resource golden rule was put in place within an uncertain expenditure classification system.

Some argue that there is a risk of promoting 'creative accounting' when using numerical fiscal rules (Kopits, 2001; Drazen, 2002; and Debrun and Kumar, 2007). This refers to when policy-makers engage in fiscal accounting tricks to appear as if numerical fiscal targets are being met, when this is not the case at all. Some go as far as arguing that creative accounting can be an off-shoot of effective transparency, as there is public understanding and scrutiny of fiscal rule, such that policy-makers are compelled to demonstrate compliance when this is untrue (Drazen, 2002). This can subsequently have negative effects on trust and accountability (Debrun and Kumar, 2007). To avoid these situations, it is argued that having some flexibility in the design of a numerical fiscal policy rule is important. However, whereas a too simple or too rigid a rule (with no state contingencies or escape clauses) may lack the flexibility needed to respond to economic developments, too much flexibility may lead to loss of credibility and commitment to the fiscal rule (Drazen, 2002).

[8] As mentioned earlier, the objective of this paper is not to elaborate on the optimal design of the fiscal policy framework in RRDEs. Hence, we will refrain from discussing the detailed fiscal policy implications of the respective rules, as this is covered extensively by Baunsgaard et al. (2012).

Box 2: Distinct features of different numerical fiscal rules

Non-resource primary balance rules: This is a fiscal indicator that is equivalent to the primary balance minus (net) resource revenue, preferably measured as a share of non-resource GDP. This fiscal indicator can be anchored to the PIH (or modified PIH or FSF) and provide an explicit link to the depletion of resource revenues, or be anchored to other macroeconomic variables. This rule is particularly relevant for RRDEs with short resource reserve horizons.

Price-based rules: A resource price-based fiscal rule aims to smooth the use of resource revenues with an explicit aim to tackle resource price volatility, but it ignores the issue of resource exhaustibility and changes in production volume. Typically, the price-based rule will set commodity reference prices by using an agreed formula or a price set by an independent panel. Revenues exceeding those expected at this reference price should be saved and could be drawn on in case of a revenue shortfall. The reference price can be set by an automatic formula or by an independent council. If the reference price is set conservatively, savings could also be incorporated into the price-based rule (IMF, 2012). The formula will need to be evaluated periodically to ensure that it is generating the expected level of savings. This rule is particularly relevant for RRDEs with longer resource reserve horizons.

Structural budget balance rules: This rule could be set to equal the non-resource primary balance plus the structural component of resource revenues, so that resource revenues are smoothed over the chosen cycle (Ghura, Pattillo et al., 2012a). The purpose of such a rule is to help ensure debt sustainability over time and possibly support intergenerational equity by requiring the build-up of public assets from the proceeds of exhaustible natural resources. A structural balance rule, as e.g., is applied in Chile (see Annex 1), adjusts non-resource revenues to the economic cycle. This rule is particularly relevant for RRDEs with longer resource reserve horizons.

Non-resource current balance rules: This fiscal rule is particularly relevant for RRDEs with low levels of physical and human capital. Similar to the so-called golden rule, (which states that the government is only allowed to borrow to finance investments), both capital spending and resource revenue are excluded from the fiscal targets. This fiscal indicator can be anchored to the modified PIH or FSF and provide an explicit link to enhancing physical and human capital. As claimed by Collier (2008, 2009, 2011), the rate of return on domestic public investment in developing countries is often considerably higher than on capital markets abroad. This argument implicitly supports the implementation of a non-resource current balance rule, which will not constrain the use of resource revenues to finance capital investment. However, other types of government expenditure, e.g., current spending on health and education, may also have high rates of return, implying that a considerably wider category of growth-enhancing spending could be excluded from the fiscal target.

Expenditure growth rules: This rule sets limits on total, primary, or current spending in nominal or real terms, as a share of GDP or non-resource GDP, or measured in growth rates. With a binding ceiling on government expenditure—based on a projection of available resources—the purpose is to limit pro-cyclicality by separating the determination of overall spending from the prioritisation of individual government programmes before the negotiating process of the various expenditure proposals begins. To accommodate public investment, higher growth limits could be set for capital spending than for current spending (Ghura, Pattillo et al., 2012a). This rule is desirable in countries with a longer reserve horizon experiencing absorptive capacity constraints. It is particularly effective when combined with an overall or structural balance rule.

Table 1: Experience in the Implementation of Numerical Fiscal Rules

Choice of numerical fiscal rule	Pros	Cons	Country examples	Specific details of fiscal rule design	Success
Non-resource primary balance rule	Delinks fiscal policy from resource revenue volatility. Relevant for countries with a relatively short resource extraction time horizon.	If based on PIH, spending paths can change dramatically if resource revenue projections are volatile. Difficult to explain logic behind rule to general public.	Azerbaijan, Ecuador, Norway, Papua New Guinea, Russia, Timor-Leste	Anchored to the PIH or modified PIH, the rule provides explicit links to depletion of resource revenues.	Mixed. Successful (Norway), relatively successful (Timor-Leste), less successful (Ecuador)
Resource price-based rule	Addresses problems related to resource price volatility. Mitigates procyclical spending.	Difficult to accurately project the resource price. Ignores depletion of resource revenues and changes in production volumes.	Algeria, Chile, Colombia, Ghana, Iran, Libya, Mexico, Mongolia, Nigeria, Russia, Trinidad and Tobago,	Commodity reference prices can be calculated by formulas (using past, spot, or future prices) or independent committees. If the reference price is	Mixed. Successful (Chile), less successful (Nigeria, Venezuela)

Choice of numerical fiscal rule	Pros	Cons	Country examples	Specific details of fiscal rule design	Success
			Venezuela	set conservatively, savings could also be incorporated into the price-based rule	
Structural budget balance rule	Relatively clear operational guidance. Close link to debt sustainability. Economic stabilisation function (i.e., accounts for economic shocks). Allows accounting for other one-off and temporary factors. Can support intergenerational equity by requiring the build-up of public assets.	Correction for cycle is complicated, especially for countries undergoing structural changes. Need to pre-define one-off and temporary factors to avoid their discretionary use. Difficult to accurately project the resource price. Complexity makes it more difficult to communicate and monitor.	Chile, Colombia, Nigeria, Mongolia	Long-term fiscal sustainability objectives can be introduced through more ambitious structural surplus targets. Specific development investments can be accommodated by setting less ambitious targets for the structural balance.	Mixed. Successful (Chile), less successful (Nigeria)
Non-resource current balance rule	Focus is put on growth-enhancing public investment. Benchmarks for long-term sustainability.	May neglect importance of growth-enhancing current spending. Parallel budgets for current and capital spending may be created. 'Creative accounting' to disguise recurrent spending as capital spending. Resource boom can lead to a volatile and procyclical budget. Does not provide a clear anchor for fiscal policy.	Ecuador, Equatorial Guinea	Anchored to the PIH or modified PIH, the rule provides explicit links to depletion of resource revenues.	Less successful (Ecuador, Equatorial Guinea)
Expenditure growth rule	Clear operational guidance. Allows for economic stabilisation. Steers the size of government. Relatively easy to communicate and monitor. Useful to control spending under absorption capacity constraints.	Not directly linked to debt sustainability since no constraint on revenue side. Could lead to unwanted changes in the distribution of spending if, to meet the ceiling, a shift to spending categories occurs that are not covered by the rule.	Botswana, Chad, Ecuador, Mongolia, Peru, Venezuela	Particularly effective when complemented by an overall balance rule (Peru) or structural balance rule (Mongolia) as production volumes vary.	Mixed. Successful (Botswana), less successful (Ecuador)

Sources: Adapted from Baunsgaard et al. (2012); IMF (2007); Dabán and Hélis (2009); Dabán and Lacoche (2007); Fasano (2000); Ossowski et al. (2008); and Ossowski (2013).

3.4 Resource funds

Sovereign wealth funds are becoming increasingly popular tools for managing natural resource wealth. Out of more than 50 sovereign wealth funds identified in 2011, about 30 derived their revenues from the petroleum sector (Shields, 2013). As the bulk of these assets do not represent an increase in a country's net wealth, but simply a shift in the composition of wealth from natural resource reserves to foreign exchange assets, public sector balance sheets should reflect the current market value of these assets, including potential liabilities. A fund's annual contribution to changes in the government sector's net financial worth should also be recorded (Shields, 2013).

Common objectives for establishing a resource fund are to improve macroeconomic stability and smooth government spending when resource revenues are volatile and uncertain; save for future generations; earmark funds for priority sector spending; and strengthen transparency and credibility of fiscal policy in the management of natural resources (see Box 3). A resource fund is *not a fiscal policy per se*, but is often established to support the implementation of sound fiscal policies (Baunsgaard et al., 2012). Operational guidelines generally cover rules for the accumulation and withdrawal of resources; asset management principles; and governance, transparency, and accountability conditions (IMF, 2007). The establishment of a resource fund is often combined with fiscal rules, both numerical and procedural, which determine the volume of resources that should go in the budget. This has been demonstrated in all the case studies in this paper, i.e., in Ghana, Chile and Timor-Leste.

The fiscal rules governing resource funds vary between countries. Algeria, Iran, Libya, Mexico, Russia, Trinidad and Tobago and Venezuela have established stabilisation funds with price- or revenue-contingent deposit and/or withdrawal rules; Equatorial Guinea, Gabon and Kuwait have set up savings funds based on revenue-sharing, where a pre-determined share of oil or total revenues is deposited in the fund; and Norway and Timor-Leste have established savings funds with operational rules that are explicitly linked to the budget's non-oil deficit (IMF, 2007).

However, experience with resource funds has been mixed and success has depended on commitment to fiscal discipline and sound macroeconomic management (Fasano, 2000). Stabilisation funds aimed at stabilising budget revenue within a single year have proven more resilient than those that cover a longer time horizon (Ossowski, 2013). Davis et al. (2003) carried out an econometric analysis on the effect of resource funds on the link between changes in public expenditures and variations in revenue. They found that, while some countries with resource funds have less sensitivity of government expenditure to natural resource revenues than countries without resource funds, the advantage was already present before the countries set up their respective funds. This implies that there was no evidence that adopting a SFI in these countries contributed to the soundness of their fiscal policies. This finding has also been supported by a number of independent subsequent studies (Fasano, 2000).

Examples of countries that have established resource funds and successfully implemented the operational arrangements, at times through a process of adaptation, include Norway, Botswana and Chile. In Norway, a maximum of 4% of the resource savings over the medium-term can be used to finance the non-resource deficit. In Botswana, annual capital spending has to be equal to the amount of diamond revenue used to finance the budget. In Chile, the copper stabilisation fund operates on a structural balanced budget rule (see Annex 1). In Timor-Leste, the experience has also been relatively successful (see Annex 2). The reason for Timor-Leste's success is often attributed to the high degree of ownership by the government and the intention to use the PIH in a modified manner. Other countries that use the PIH to manage their funds include São Tomé and Príncipe, Gabon and Trinidad and Tobago (Dabán and Hélis, 2009).

Box 3: Resource funds

Resource funds are normally created when governments experience large budgetary surpluses due to important revenue inflows from the natural resources sector—funds that are not intended for immediate consumption. In RRDEs, the main reasons for creating a resource fund are normally related to the high volatility of resource prices, unpredictability of extraction and exhaustibility of resources.

There are three main types of resource funds: stabilisation funds, saving funds and financing or development funds. Stabilisation funds are created to reduce the volatility of government revenues and counter the boom-bust cycles' unfavourable effect on government spending and the national economy. Savings funds are intended to build up savings for future generations. Financing funds are mainly intended to finance the budget as the fund accumulates budget surpluses and finances budget deficits (Ossowski, 2013), while development funds are created to specifically allocate resources to priority socioeconomic projects in the national budget. Countries that have set up stabilisation funds include Chile, Timor-Leste, and Iran; savings funds include Libya and Russia; and development funds include Chad, UAE, and Kazakhstan (Ghura, Pattillo et al., 2012a). Several countries combine the use of stabilisation, savings, and investment objectives in the design of their resource funds.

Implementing countries establish specific operational rules for managing their resource funds, covering accumulation, withdrawal, and investment decisions.

Countries that have been less successful in implementing resource funds include Chad, Nigeria, Venezuela, Ecuador and Algeria. In Chad, the establishment of very complex earmarking arrangements led to separate budgets and cash management systems for oil and non-oil funded expenditures. This resulted in costly borrowing to finance the non-oil budget at the same time as savings were being generated in a low-yielding petroleum fund (Dabán and Lacoche, 2007). In Nigeria and Venezuela, the attempt to use the long-term price of oil to guide savings has not been very successful due to difficulties in accurately projecting the price of oil. In Ecuador, an excessive earmarking scheme for the use of resource revenues caused liquidity problems and weakened the quality of expenditures (Ossowski et al., 2008). In Algeria, specific oil accounts were linked to multi-year investment projects through complex cash management systems, which undermined transparency and accountability (Dabán and Hélis, 2009).

In certain countries, the lack of transparency has been particularly detrimental to the successful implementation of the resource fund. For example in Kazakhstan, Republic of Congo and Equatorial Guinea, governments have not provided basic information about their revenues from the petroleum sector. In such cases, there is a risk that these funds can be set up as a type of parallel budget that can be managed under the discretion of the Executive, and are not subject to any of the basic controls or procedures in a sound PFM system (Karl, 2006). In the extreme case of Kuwait, a resource fund was created with the purpose of protecting resource revenues and the investment strategy from transparency and public scrutiny in order to reduce public pressure to spend.

If a resource fund is established, one of the key considerations is how operation of the fund is integrated with the PFM system. RRDEs such as Chad and Ecuador specifically established resource funds to strengthen internal controls and expenditure tracking when domestic PFM systems were weak. In these particular countries—which later abolished their funds—resource revenues were allocated to the funds through predetermined ratios and used to fund off-budget expenditures (Dabán and Hélis, 2009).

To avoid the experience of, for example, Chad, it is of crucial importance that resource funds are completely integrated in the national budget. This will help ensure both the integrity of the budget as well as protect its role as the mechanism for setting spending priorities and allocating public resources (Ghura, Pattillo et al., 2012a). Moreover, as with the design of numerical fiscal rules, funds with flexible inflow and outflow rules have also proven to be more effective than those with rigid rules. Chile's stabilisation fund is an example of a fund where flexible rules have contributed to its successful implementation, while Venezuela and Oman had poor experiences with resource funds because of changes to the fund's rules and deviations from the intended purpose (Fasano, 2000). In addition, experience shows that in RRDEs with weak institutional capacity and PFM systems, it is advisable to implement only *one* resource fund, possibly with two separate portfolios to meet stabilisation and savings objectives, rather than two separate funds with different objectives and asset management frameworks (Ghura, Pattillo et al., 2012a). Furthermore, volatile resource revenue flows should not be earmarked for priority spending categories, as these expenditure priorities are likely to benefit from stability and predictability in the funding source (Ossowski, 2013). Finally, the importance of transparency in the management of the resource fund has been demonstrated in the case of both Chile and Timor-Leste (see Annexes 1 and 2), which has enabled the electorate and specialised bodies to monitor if procedures are being adhered to.

3.5 Fiscal Responsibility Laws (FRLs)

A fiscal rule can be classified as part of a broader institutional or policy framework and be embedded within stronger legal frameworks that are more difficult to reverse (IMF, 2009). Such a fiscal rule is called a fiscal responsibility law (FRL), defined by Lienert (2010) as 'a limited-scope law that elaborates on the rules and procedures relating to three budget principles: accountability, transparency, and stability in the design and implementation of fiscal policy. These laws mostly aim to strengthen fiscal discipline by forcing governments to declare and commit to a transparent, predictable and credible, fiscal policy that can be monitored and can be judged by others (IMF, 2005). The advantage of a FRL is that it is more likely to survive a change in government than a regular fiscal rule, which is important where a political change could otherwise undermine the credibility of fiscal policy (IMF, 2009). This is because legislation is difficult and costly to revert, particularly constitutional laws. However, adopting a FRL is a time-consuming and costly political process.

FRLs normally comprise procedural rules, while numerical FRLs are less common. Some common reasons for introducing a FRL to address the systemic problems for fiscal policy-making are identified by Allen (2012). These include solving problems of time inconsistency, when policy-makers intentions ex-ante differ from their ex-post incentives; short-sightedness, as policy-makers discount the long-term consequences of their current

policies; collective action, as policy-makers favour sectional over collective interests; information asymmetry, when policy-makers hide consequences of their policies from the public; principal-agent, when policy-makers have different incentives from budget agents; and exogenous shocks, as sound policies may be disrupted by unexpected events. To address these issues, many FRLs encompass: (i) legislated broad principles to guide formulation of fiscal policy; (ii) short-, medium-, and long-term formulations of rolling budget plans and fiscal projections; (iii) effective budget mechanisms and procedures designed to minimise deficit biases; and (iv) robust transparency requirements and public oversight mechanisms (IMF, 2009).

FRLs can apply to national governments in general, or specifically to supranational governments or public enterprises.[9] Some FRLs stipulate clear sanctions for non-compliance that can be either institutional (e.g., withholding transfers or imposing credit restrictions) or personal (e.g., dismissal, penal prosecution, or imposing a fine), while other FRLs rely on reputational damage to enforce compliance (IMF, 2005). In some countries, implementation of FRLs is supported by independent fiscal advisory councils in charge of providing advice and monitoring fiscal developments (IMF, 2009).

With regard to the use of FRLs, patterns differ substantially between countries—fiscal rules were accompanied by FRLs in more than 30% of emerging economies, 20% of advanced economies, and only 10% of developing countries (IMF, 2009). Most FRLs have been adopted since 2000, but only two African countries have FRLs (Allen, 2012). While there appears to be a preference for developing elaborate legislation in Latin American countries, there is a tendency to spell out the fiscal framework as an outline with emphasis on transparency in Anglo-Saxon countries (Kopits, 2001).

In some resource-rich countries, for example, Russia, Azerbaijan and Timor-Leste, legislation has been introduced to strengthen medium-term budgeting in combination with debt, price and structural balance budget rules. Mexico and Ecuador have established specific FRLs that cover balance or surplus budget rules, price-based rules to smooth expenditures, and non-resource primary balance rules (Dabán and Hélis, 2009). In some resource-rich countries, resource revenue management is governed by the general budget legislation, sometimes complemented by additional legislation, as in the case of Alaska and Norway, or by special provisions in the FRLs, as in Mexico and Ecuador. In the most extreme cases, resource revenue management has been written into the constitution, in an organic law, or in a special legislation (Dabán and Hélis, 2009). In fact, SFIs tend to be more successful when they are tailored to country-specific circumstances, including legal precedents and cultural traditions (Kopits, 2001). Furthermore, caution needs to be taken on how the introduction of new laws will complement existing institutional traditions, particularly where ‘best practice’ procedures from other countries are being considered (World Bank, 2013).

3.6 Fiscal advisory councils

In several RRDEs, including Timor-Leste and Ghana (see Annexes 2 and 3), independent fiscal advisory councils have been created to advise governments and legislators in the management of their resource wealth and related fiscal policy formulation and implementation. According to Wyplosz (2005), there is a range of options available for setting up such independent bodies, including a radical institutional solution to establish a fiscal authority by mimicking the approach adopted in the case of monetary policy. Members would be unelected officials appointed for a fixed period, accountable to Parliament, and responsible for meeting pre-determined fiscal targets. A softer approach would be to establish a fiscal advisory council, which could only issue non-binding recommendations. In general, fiscal advisory councils are established to provide additional assurances to voters and markets about the government’s commitment to fiscal discipline (Hemming, 2013). Opening up fiscal policy to scrutiny by an independent body is a good practice of fiscal transparency, which puts pressure on the government to be honest. Enshrining independence in legislation is considered an effective means of demonstrating political support for a fiscal council. However, establishing a fiscal council should only be viewed as one part of several complementary measures to improve fiscal policy implementation.

Typically, fiscal councils are government or legislative agencies mandated to provide independent advice on and/or verify[10] fiscal policies, plans and performance (Hemming, 2013). Advisory functions may specify whether the government’s fiscal policy targets are appropriate, while the verification function will check the consistency of policies, plans and objectives, analyse deviations and identify shortcomings in policy design and implementation (Hemming, 2013). In some countries, fiscal councils are also involved in economic

9 This paper only considers FRLs applied to national governments.
10 These verification functions are sometimes described as auditing functions, however they are not to be confused with those performed by the national audit office.

forecasting and costing functions; a good overview of the various functions of fiscal countries around the world is provided in Hemming (2013). Many fiscal councils must, as part of their mandates, check compliance with fiscal rules, although they cannot prevent governments from actually breaking these rules.

Some argue that fiscal councils can help ensure fiscal rules are implemented by providing guidance on how the rules should be applied and ensuring they are not manipulated (Arbatli, 2012). However, risks relate to undermining the credibility of the government and draining scarce resources from the government. Empirical evidence on the usefulness of fiscal councils is also still sparse (Hemming, 2013 and Allen, 2012). Nevertheless, some RRDEs are in the process of setting up fiscal councils, for example, Nigeria and Indonesia.

4 Implications for policy and practice

Policy-makers and advisers are encouraged to see what has worked in other countries and tailor this to the local circumstance so that it is fit for purpose (Drazen, 2002). This is also the conclusion to be drawn from more recent literature on institutional reform, including Andrews (2013), Krause (2013) and Allen, (2010). Hence, implementing what is considered a 'best practice' procedure in managing natural resource wealth may not always be a viable option for a RRDE, as the political environment is fundamentally different.

In considering what is then the 'next best practice', policy-makers and advisors have a number of options to consider. Option one could be that a RRDE recognises the requirements for successful implementation of SFIs (e.g., a robust PFM system) and decides that this is not the appropriate time to pursue their design and implementation. However, before a RRDE arrives at a conclusion that SFIs are not appropriate, it is recommended that efforts are invested in reviewing other country experiences and assessing what the implications are for its own institutional environment, both in terms of formal and informal procedures. If a decision is made not pursue a SFI, two aspects need to be considered. First, the authorities will still need to consider what the overall fiscal policy framework should be (e.g., following the PIH or frontloading spending to meet capital and labour shortages, etc.) and what the appropriate institutional mechanisms are for implementing this. This discussion is likely to require considerable input from key change agents. Second, to help avoid the risk that resource revenues are not spent irresponsibly and without consultation with relevant stakeholders, authorities are encouraged to engage in consultation with the broader public. This could involve assessing where the 'appropriate entry points' for this type of dialogue are and how it would be in the interests of decision-makers to directly engage with citizens. For example, in countries where there has been traction for transparency efforts, such as the Open Budget Initiative, engaging in substantive debate over natural resource wealth management could be incorporated as part of these discussions. Furthermore, the Natural Resource Charter provides a framework for the basis of this type of self-assessment discussion which could be explored by RRDEs.

Another option could be for a RRDE to follow a policy guideline to enhance fiscal discipline without formally committing to a SFI until it has gone through a learning process. In this case, the RRDE will still need to choose the overall fiscal policy framework, and again what the appropriate policy guideline or rule is for achieving this. A potential risk to this approach is that if the authorities do not commit to a formal SFI, such as a resource fund or a procedural rule, the basis for monitoring compliance to fiscal discipline is not as strong and it may become difficult for citizens to demand accountability. Therefore, the importance of public participation and consultation in designing the fiscal guidelines will still be an important factor.

A third option could be for a RRDE to design and implement a SFI and learn about what works through an iterative process. However, there is a risk that if a rule or commitment is broken the government could lose credibility. This could be particularly pertinent in post-conflict countries where governments need to establish trust with citizens. Therefore, there will need to be significant public consultation and investment in setting and managing expectations. If a decision is made to implement options two or three, that is, a policy guideline or a formal SFI, we suggest some factors that should be considered in their design and implementation. This takes into account the specific challenges in RRDEs and some of the key themes that have emerged from country experiences. These are discussed below.

4.1 Natural resource wealth and the PFM system

Given the intricate link between SFIs and the budget, as well as the need to have a robust PFM system in place for SFIs to be effective, there is some useful guidance in the literature on how PFM systems should be strengthened for RRDEs (see Dabán and Hélis, 2009 for a useful discussion on best practices and the minimum requirements for a PFM framework for RRDEs). However, as discussed earlier in this paper, the limitations of institutional reform and supplanting best practices from western democracies in RRDEs are unlikely to be effective (see Andrews, 2013, and Allen, 2010).

Nevertheless, some key principles are useful for considering how natural resource wealth should be integrated within the budget process and the wider PFM system. At a minimum, these include: (i) the budget should have a transparent presentation of resource revenue; (ii) if a natural resource fund is established, it should be fully integrated in the national budget process; and (iii) whether a natural resource fund is established or not, resource revenue should not be earmarked for specific expenditure items. Instead,

resource revenue should be handled as part of a unified budget preparation and execution process. It has also been suggested that to enhance oversight and transparency, a special unit should be established at the Ministry of Finance to reconcile and disseminate resource revenue information (Dabán and Hélis, 2009).

Choice and design of SFI

The evidence of whether one type of SFI should be chosen over another is inconclusive, and in many countries a combination of SFIs is used, depending on the choice of fiscal policy framework. However, it is of crucial importance that governments focus on the critical fiscal issue to be resolved (i.e. the problem that needs to be addressed) and align the choice and design of SFI accordingly.

No matter which policy stance is selected, the design of a potential SFI to facilitate policy implementation in a RRDE will involve technical expertise which will need to be acquired in a low-capacity environment. Options for accessing capacity could include: (i) contracting external expertise (e.g., in Angola, long-term experts were partnered with national officials to build internal capacity); and (ii) forging a lesson-learning relationship with countries that have been successful (e.g., as was developed between Norway and Timor-Leste, Norway and Ghana through the Norwegian Oil for Development initiative, and Chile and Mongolia). This does not imply that RRDEs should mimic how OECD countries have developed their institutions. Rather, they could consider how these experiences can be relevant or applicable for the local country context (Krause, 2013). Choosing a simple SFI structure that is easily understood and straightforward to monitor is also generally preferable to a complicated structure that is thereby less transparent (Dabán and Hélis, 2009).

Fiscal rules

As noted above, evidence shows that fiscal rules are more likely to be successful if there is some form of flexibility in their design (Fiess, 2001). However, this implies a trade-off: if a rule is too simple or rigid with no escape clauses, it may lack the flexibility needed to deal with shocks and changes in fiscal policy, and will therefore be less credible. If there is too much flexibility, there is a loss of commitment to the fiscal rule (Drazen, 2002). To address this, the fiscal rule design should have an explicit revision clause to ensure that it is assessed on a regular basis and remains appropriate for the choice of fiscal policy, for example, given changes in estimated resource wealth and domestic absorptive capacity (Baunsgaard et al., 2012). Again, in the example of Chile, the FRL does not have specific escape clauses that the authorities can apply in the case of shocks to the economy. As a result, the rule was de facto suspended during the earthquake in 2010. Nevertheless, the authorities have been able to use the FRL flexibly as it does not constrain the Government's ability to modify the structural balance target, although it does not specify the circumstances in which changes can be made. While it is not a requirement in the FRL, when changes are made to the structural balance target, the authorities provide reasons for this (Dabán, 2011).

In RRDEs, numerical rules tend to be more effective if accompanied with procedural rules. Moreover, numerical fiscal rules generally require robust PFM systems to be in place, which is not the case in most RRDEs. Therefore, it may be preferable to postpone the formal adoption of a numerical fiscal rule and instead, as a first step, initially shadow the fiscal rule for policy guidance (Corbacho and Ter-Minassian, 2013).

Resource Funds

Although experience to date shows that resource funds will not, by themselves, improve commitment to fiscal discipline, they can provide a useful tool for governments in RRDEs to accommodate safeguarding of resources for future generations and stabilisation of the macroeconomy. If a resource fund is established, it should be fully integrated with the national budget. Funds with their own mandate to invest, and with a separate legal identity, should be avoided, as this can lead to an excessive concentration of power, fragmentation of the budget process, and divert attention from ongoing PFM reform efforts (Dabán and Hélis, 2009). Funds with flexible inflow and outflow rules have proven more effective than those with fixed rules (Ghura, Pattillo et al., 2012a). When the PFM framework is weak, it is better for a RRDE to pool resources in a single fund with two portfolios than to manage both a stabilisation and a savings fund separately. Where funds specifically earmark expenditures or allow for extra-budgetary funding they become particularly difficult to manage. This was exemplified in the case of Chad (IMF, 2007).

Along with efforts to improve budget transparency, the resource funds should also be subject to transparency measures, so that compliance with the rules and procedures governing the fund can be monitored. To enhance transparency, information on the institutional structure, functions and relations between government and the private sector should also be available (Kopits, 2001). A 'signal' to demonstrate this is to abide by the IMF's Guide on Resource Revenue Transparency and its Code of Good Practice for Fiscal

Transparency, and to sign up to the Santiago Principles, a set of voluntary guidelines that assign 'best practices' for the operation of sovereign wealth funds.[11]

The operational management of the resource fund depends on the local capacity and the volume to be invested. Where there are large resource deposits for RRDEs, it is recommended that the services of an international financial institution are contracted on a competitive basis to manage the resource fund, for example Sao Tome and Principe (Dabán and Hélis, 2009). Some scholars have also suggested applying a good governance checklist for the management of a resource fund, which includes (i) people—focus on leadership, talent, resources and the possibility of performance-related pay; (ii) processes—clarity of the objectives of the SFI, accountability mechanisms, investment guidelines and appropriate communication; and (iii) politics—focus on legitimacy, mandate, authorities, board appointments and boundaries of operation (Dixon and Monk, 2011).

Fiscal responsibility law

A FRL should only be adopted if there is strong political support and a sufficiently developed PFM system, as weak institutions and poor implementation capacity may undermine credibility of the law.[12] *This implies that in most RRDEs a FRL should not be adopted.* However, if a FRL is nevertheless adopted, sufficient attention should be paid to the country-specific legal precedents and cultural traditions. Therefore, it is recommended that before adopting a FRL, an implicit policy guideline (or fiscal rule) is developed which can be later formalised in law after successful implementation during a learning period. This was the case, for example, in Chile (Kopits, 2001).

Fiscal advisory councils

The expected benefit of establishing a fiscal advisory council is that politically motivated decisions are removed, and that capacity to manage natural resource wealth is considerably strengthened. However, there are several risks with implementing fiscal advisory councils in RRDEs: (i) these separate bodies may *de facto* become increasingly powerful and undermine the credibility of the government and/or the Legislature, as well as the independence of the advisory body; and (ii) the councils may drain scarce resources from the government or think tanks. Therefore, the remit of an independent fiscal body would need to be clearly defined, it should not be involved in decision-making, and the use of separate independent oversight committees and/or audits should be encouraged. In the case of Timor-Leste, the independent fiscal council has the mandate to advise and its recommendations are made publicly available; however, it has no decision-making power (see Annex 2).

4.2 Promoting transparency in natural resource wealth management

There is general consensus that transparency can help establish and maintain credibility in the collection and distribution of natural resource wealth (IMF, 2007). Promoting transparency of natural resource revenue management through a SFI should be done in the broader context of fiscal transparency reform efforts. However, this should be considered as part of broader efforts to promote fiscal transparency, and not as a stand-alone initiative. A number of resources and initiatives are available to enhance these efforts, such as the Global Initiative for Fiscal Transparency; the Open Budget Initiative; and the IMF's Guide on Resource Revenue Transparency, Code of Good Practice on Fiscal Transparency, and Reports on the Observance of Standards and Codes.

For natural resource revenue specifically, countries are encouraged to join the Extractive Industries Transparency Initiative (EITI), which aims to strengthen governance by improving transparency and accountability in the extractives sector, and thereby limit the rentier state culture. This initiative, which is a coalition of governments, companies, civil society groups, investors and international organisations, was established in 2002.[13] Some of the anticipated benefits of becoming EITI compliant are that: (i) governments

[11] So far, 25 nations have signed onto the principles.

[12] If PFM systems and budget procedures are not sufficiently developed to help implement the procedural and numerical rules established in FRLs in a credible and enforceable manner, it is unlikely that the country will be able to monitor and effectively control the fiscal target (IMF, 2005).

[13] There are two main elements to the EITI process: (i) companies publish what they pay and governments publish what they receive in an EITI report; and (ii) the process is overseen by a multi-stakeholder group of governments, companies, and civil society (EITI, 2013). There has been wide ranging support for the EITI process, which includes 20 compliant countries, 17 candidate countries and 32 countries that have produced EITI reports. RRDEs that are EITI compliant include Liberia, Mali, Republic of Congo, Mongolia, Niger, Timor-Leste, Burkina Faso, Ghana, Mozambique, Nigeria and Tanzania (EITI, 2013).

send a signal of being committed to transparency of extractive resource revenues and anti-corruption; and (ii) citizens and civil society receive reliable information on resource revenues and are thereby in a better position to hold government and extractive companies to account in the management of these resource flows.

4.3 Public consultation and building support

Where SFIs have been successfully implemented, there has been significant investment in public consultation and building consensus. This is clear from all of the three case studies in Annex 1, 2 and 3. This experience is important for setting expectations around how the natural resource wealth will be managed, particularly regarding how much revenue will be available for current consumption and investment, and how much will be saved for future generations (Collier, 2012). This process can be complemented by a simple fiscal rule that can be widely understood. Some argue that preconditions for adopting a new SFI to support fiscal policy implementation are to: (i) conduct an outreach campaign and generate public understanding of the need for rules, and thereby support implementation; and (ii) hold a wide political debate for broad legislative consensus (Kopits, 2001). Such a process can be facilitated through the framework and methodology for public consultation and 'self-assessment' proposed by the Natural Resource Charter.

In summary, this paper does not recommend introducing SFIs as a solution to the challenges of managing natural resource wealth. Neither does it recommend implementing best practices in institutional development from other countries, including for the PFM system. In this regard, drawing from the experience of institutional reforms more broadly, approaches such as the problem-driven iterative approach may be most relevant (Andrews, 2013). This would entail ensuring participation and consultation in the optimal fiscal policy framework, and then identifying the mechanisms required to achieve this. SFIs can be implemented as part of the process.

We do not recommend implementing institutional mechanisms or 'blueprints' from other countries. However, we do see value in sharing experiences and for RRDEs to engage in discussions about what types of institutions would be most appropriate to their own political economy environment, given the formal and informal procedures that prevail.

5 Conclusions

The design and implementation of SFIs for natural resource wealth management is an emerging area of research. Unlike other areas of PFM, there is limited guidance that is widely accepted on the procedures RRDEs should undertake when implementing SFIs. This lack of guidance reflects in part the challenges in managing natural resource wealth, as well as the fact that there are limited success stories in RRDEs. This paper has illustrated some of the challenges of managing natural resource wealth from a macrofiscal perspective. There has been some selective consideration to the contextual environment of RRDEs, such as the increased likelihood of being an authoritarian state with weak institutions and low human capacity, limited accountability to citizens, and extended opportunities for patronage.

In light of these challenges, the potential role of SFIs in promoting fiscal discipline has been discussed. In general, the country examples show that there is greater compliance to SFIs in countries which already have a commitment to fiscal discipline and strong institutions. Given this, policy-makers in RRDEs have to consider the options available to them: (i) recognise the requirements for successful implementation of SFIs and decide that this is not the appropriate time to pursue their design and implementation; (ii) decide to follow some policy guideline to enhance fiscal discipline without formally committing to a SFI until there has been a learning process; and (iii) decide to design and implement a SFI and learn about what works through an iterative process.

The paper has presented a range of SFIs available to RRDEs, which include numerical and procedural fiscal rules, resource funds such as savings, stabilisation and development funds, fiscal responsibility laws, and fiscal advisory councils. Different types of SFIs can be implemented in parallel. A discussion on the advantages and disadvantages of these SFIs has been presented with illustrated country examples. Finally, drawing on common themes from the country examples, factors to consider when designing and implementing SFIs have been presented. From the small sample of success cases in RRDEs, there has been greater compliance to SFIs in countries where the SFIs were adapted to the country context in terms of addressing the fiscal objective and the local environment, there was some degree of flexibility, efforts were made to promote transparency, and there was investment in public consultation.

Bibliography

Allen, R. (2012) *Fiscal Responsibility Laws: Lessons from International Experience.* Presentation during Fiscal Responsibility Workshop, Accra, May 24-26, 2012.

Allen, R. (2010) 'Two Modest Proposals for Making Technical Assistance More Effective!' IMF Public Financial Management Blog, September 17, 2010 http://blog-pfm.imf.org/pfmblog/2010/09/two-very-modest-proposals-for-making-technical-assistance-more-effective.html

Allen, R. (2009) *The Challenge of Reforming Budgetary Institutions in Developing Countries*. IMF Working Paper. Washington D.C.

Andrews, M. (2013) *The Limits of Institutional Reform in Development*. Cambridge University Press: U.S.A.

Andrews, M. (2011a) 'Which Organisational Attributes Are Amenable to External Reform? An Empirical Study of African Public Financial Management'. International Public Management Journal 14(2): 131– 156.

Arbatli, E. C. (2012) 'Fiscal Rules and Councils: Most Effective When Used Together'. IMF Public Financial Management Blog, August 30, 2012 http://blog-pfm.imf.org/pfmblog/2012/08/fiscal-rules-and-councils-most-effective-when-used-together.html

Auty, R. M. (1993) *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. London: Routledge.

Bacon, R. and Tordo, S. (2006) *Experiences with Oil Funds: Institutional and Financial Aspects*. Energy Sector Management Assistance Program, World Bank: Washington D.C.

Baunsgaard, T., Villafuerte, M., Poplawski-Ribeiro, M. and Richmond, C. (2012) *Fiscal Frameworks for Resource Rich Developing Countries*. IMF Staff Discussion Note, SDN/12/04. Washington D.C.

Blöndal, J. R., and Curristine, T. (2004) 'Budgeting in Chile'. OECD Journal on Budgeting (4)2.

Bjerkholt, O. and Niculescu, I. (2004) 'Fiscal Rules for Economies with Nonrenewable Resources: Norway and Venezuela' in George Kopits (ed.) *Rules-Based Fiscal Policy in Emerging Markets: Background, Analysis and Prospects*. Macmillan.

Boschini, A., Pettersson, J. and Roine J. (2005) *Resource curse or not: A question of Appropriability.* Stockholm University: Sweden.

Civil Society Platform on Oil and Gas - Ghana (2011) *Ghana's Oil Boom: A Readiness Report Card.*

Collier, P. (2012) *Savings from Natural Resource Revenues in Developing Countries: Principles and Policy Rules.* Working Paper 55. Fondation pour les études et recherches sur le développement international.

Collier, P. (2011) *Savings and Investment Decisions in Low-Income Resource-Rich Countries*. Centre for the Study of African Economies, Department of Economics, Oxford University.

Collier, P., van der Ploeg, F., Spence, M. and Venables, A. J. (2009) *Managing Resource Revenues in Developing Economies*. OxCarre Research Paper 15 Oxford: Oxford Centre for the Analysis of Resource Rich Economies. Also in IMF Staff Papers (2010) 57(1): 84–118.

Collier, P. and Venables, A. J. (2008) *Managing resource revenues: lessons for low income countries.* African Economic Research Consortium 2008 Annual Conference in Nairobi, University of Oxford and CEPR.

Collier, P. (2006) *Economic Causes of Conflict and their Implications for Policy*. Oxford University: U.K.

Corbacho, A. and Ter-Minassian, T. (2013) 'Public Financial Management Requirements for Effective Implementation of Fiscal Rules' in *International Handbook of Public Financial Management* Chapter 2, Allen, R., Hemming, R. and Potter, B. (eds) Palgrave Macmillan, forthcoming.

Dabán, T. (2011) *Strengthening Chile's Rule-Based Fiscal Framework.* IMF Working Paper. IMF: Washington D.C.

Dabán, T. and Hélis, J.- L. (2009) *A Public Financial Management Framework for Resource-Producing Countries*. IMF Working Paper, WP/10/254. Washington D.C.

Dabán, T. and Lacoche, S. (2007) *Fiscal Policy and Oil Revenue Management: The Case of Chad*. International Monetary Fund, Country Report 07/28. Washington D.C.

Davis, O. J., Daniel, J. A., Barnet, S. et al. (2003) 'Stabilization and Savings Funds for Nonrenewable Resources' in *Oil Producing Countries,* Chapter 11, Davis, J. M., Ossowski, R. and Fedilino, A**.** *(*eds.) IMF. Washington D.C.

Debrun, X. and Kumar M. S. (2007) *Fiscal Rules, Fiscal Councils and All That: Commitment Devices, Signalling Tools or Smokescreens?* IMF. Washington D.C.

Democratic Republic of Timor-Leste (2005) *Petroleum Fund Law* No. 9/2005.

Devarajan, S., Le, T. M. and Raballand, G. (2010) *Increasing Public Expenditure Efficiency in Oil-rich Countries: A Proposal.* World Bank. Washington D.C.

Drazen, A. (2002) *Fiscal Rules From A Political Economy Perspective*. Tel Aviv University, University of Maryland, NBER and CEPR.

Dixon, A. D. and Monk, A. H. B. (2011) *Oil-to-Cash Initiative Background Paper, What Role for Sovereign Wealth Funds in Africa's Development?* Center for Global Development. Washington D.C.

Fasano, U. (2000) *Review of the Experience with Oil Stabilization and Savings Funds in Selected Countries*. IMF Working Paper. Washington D.C.

Fiess, N. (2001) *Chile's New Fiscal Rule*. World Bank. Washington D.C.

Fuentes, J. R. (2009) *Managing Natural Resources Revenue: The Case of Chile*. Oxford Centre for the Analysis of Resource Rich Economies. Oxford: UK.

Gillies, A. (2010) *Giving Money Away? The Politics of Direct Distribution in Resource Rich States.* Center for Global Development. Washington D.C.

Ghura, D., Pattillo, C. et al*.* (2012a) *Macroeconomic Policy Frameworks for Resource-Rich Developing Countries.* IMF. Washington D.C.

Ghura, D., Pattillo C. et al*.* (2012b) *Macroeconomic Policy Frameworks for Resource-Rich Developing Countries*—Background paper 1—Supplement 1. IMF. Washington D.C.

Havro, G. and Santiso, J. (2008) *To Benefit from Plenty: Lessons from Chile and Norway*. OECD Policy Brief No. 37. Paris, France.

H.E. Prime Minister Mari Alkatiri (2003) Statement Presented on the occasion of the Extractive Industries Transparency Initiative (EITI) Multi-stakeholder Conference, London, 17 June 2003.

Hemming, R. (2013) 'The Role of Independent Fiscal Agencies', in *International Handbook of Public Financial Management* Chapter 38, Allen, R. Hemming, R. and Potter, B. (eds) Palgrave Macmillan, forthcoming.

Humphreys, M. and Sandbu, M. E. (2007) 'The Political Economy of Natural Resource Funds', in Macartan Humphreys, Sachs, J. D. and Stiglitz, J. E. (eds) *Escaping the Resource Curse,* New York: Columbia University Press.

IMF (2005) *Fiscal Responsibility Laws.* IMF Fiscal Affairs Department. Washington D.C.

IMF (2007) *The Role of Fiscal Institutions in Managing the Oil Revenue Boom*. IMF Fiscal Affairs Department. Washington D.C.

IMF (2008) *Chile: Selected Issues Paper*. IMF. Washington D.C.

IMF (2009) *Fiscal Rules—Anchoring Expectations for Sustainable Public Finances*. IMF Fiscal Affairs Department. Washington D.C.

Karl, T. K. (2006) *Ensuring fairness? The case for a transparent fiscal social contract*. Initiative for Policy Dialogue Working Paper Series. Columbia University.

Kojo, N.C. (2010) *Diamonds Are Not Forever: Botswana Medium-term Fiscal Sustainability*. Policy Research Working Paper 5480. Washington D.C.

Krause, P. (2013) *Of Institutions and Butterflies: Is isomorphism in developing countries necessarily a bad thing?* ODI Discussion Note, forthcoming.

Kopits, G. and Symansky, S. (1998) *Fiscal Policy Rules*. IMF Occasional Paper 162. Washington D.C.

Kopits, G. (2001) *Fiscal Rules: Useful Policy Framework or Unnecessary Ornament?* IMF Fiscal Affairs Department. Washington D.C.

Lienert, I. (2010) *Should Advanced Countries Adopt a Fiscal Responsibility Law?* IMF Working Paper, WP/10/254. Washington D.C.

Ljungman, G. (2008) 'Fiscal Rules – Beneficially Binding?' IMF Public Financial Management Blog, 8 February, 2008 http://blog-pfm.imf.org/pfmblog/2008/02/fiscal-rules--.html

Mehlum, H., Moene, K. and Torvik, R. (2005) *Cursed by Resources or Institutions?* Norwegian University of Science and Technology, Working Paper Series. Trondheim: Norway.

Monk, A. H. B. (2008) *Recasting the Sovereign Wealth Fund Debate: Trust, Legitimacy and Governance.* Stanford University. Global Projects Center: U.S.A.

Ossowski, R., Villafuerte, M., Medas, P.A. and Thomas T. (2008) *Managing the Oil Revenue Boom: The Role of Fiscal Institutions*. IMF Occasional Paper No. 260. Washington D.C.

Ossowski R. (2013) 'Managing Non-renewable Resource Revenues' in *International Handbook of Public Financial Management.* Chapter 24, Allen, R., Hemming, R. and Potter, B. (eds) Palgrave Macmillan forthcoming.

Pires, E. (2011) *Avoiding the Resource Curse: Managing Extractive Industries for Human Development* presented at the United Nations Development Programme and Government of Mongolia, International Conference Ulaanbaatar, Mongolia, 20-22 October 2011.

Prempeh, H. K. and Kroon, C. (2012) *The Political Economy Analysis of the Oil & Gas Sector in Ghana: the Implications for STAR-Ghana*. Ghana.

Rasmussen, T. (2009) *IMF Selected Issues Paper: Democratic Republic of Timor-Leste.* IMF. Washington D.C.

Robinson, J. A., Torvik, R. and Verdier T. (2006) 'Political foundations of the resource curse', Journal of Development Economics 79.

Rodríguez, J., Tokman, C.R. and Vega, A. C. (2007) 'Structural Balance Policy in Chile', OECD Journal on Budgeting, 7(2).

Ross, M. (1999) 'The Political Economy of the Resource Curse', World Politics 51.

Rosser, A. (2006) *The Political Economy of the Resource Curse: A Literature Survey*. Institute for Development Studies. Sussex: U.K.

Porter, D., Andrews, M., Turkewitz, J. and Wescott, C. (2010) *Managing Public Finance and Procurement in Fragile and Conflicted Settings*. World Development Report 2011 Background Paper. World Bank: Washington D.C.

Sachs, J. D. and Warner, A. M. (1995) *Natural Resource Abundance and Economic Growth.* Development Discussion Paper no. 517a. Cambridge: Harvard Institute for International Development.

Sandbu, M. E. (2005) *Natural Wealth Accounts: A Proposal For Alleviating the Natural Resource Curse*. Wharton School of Business. University of Pennsylvania: U.S.A.

Schaechter, A., Kind, T., Budina, N. and Weber A. (2012) Fiscal Rules in Response to the Crisis—Toward the "Next-Generation" Rules. A New Dataset. WP/12/187. Washington D.C.

Schmidt-Hebbel, K. (2007) *Chile's Growth and Development: Leadership, Policy-Making Process, Policies, and Results*. Central Bank of Chile, Working Paper, N° 507.

Shafer, D. M. (1994) *Winners and Losers: How Sectors Shape the Developmental Prospects of States*. Cornell University Press.

Shields, J. (2013) 'Sovereign Wealth Funds' in *International Handbook of Public Financial Management* Chapter 29, Allen, R., Hemming, R. and Potter, B. (eds) Palgrave Macmillan, forthcoming.

Ter-Minassian, T. (2007) *The Role of Fiscal Institutions in Managing the Oil Revenue Boom*. IMF Fiscal Affairs Department. Washington D.C.

World Bank (2012) *Public Financial Management Reforms in Post-Conflict Countries: A Synthesis Report*. 69964. Washington D.C.

Wyplosz, C. (2005) *Fiscal Policy: Institutions vs. Rules*. National Institute Economic Review No. 191.

Annex 1: Chile country case study

1. Background

Chile is presently the world's largest copper producer, contributing to one-third of total output, and is considered to be a leading example in the fiscal management of natural resource wealth. Even during copper price booms, Chile has successfully avoided the resource curse, and is instead regarded as a 'paragon of plenty' that can share experiences with other countries (Havro and Santiso, 2008). Chile has maintained strong macroeconomic stability and growing living standards, due to a well-designed policy framework based on inflation targeting, a flexible exchange rate, and a fiscal rule for managing the copper resource wealth (Ghura, Pattillo et al., 2012b).

The Chilean government has two sources of copper revenues. The first comes from profits from the state-owned company, CODELCO, and the second from specific and general taxes from mining companies, including concession agreements (Fuentes, 2009; Dabán, 2011). To manage copper revenues, the Chilean government has applied a structural balance policy through the use of a fiscal rule, which is fully integrated with the national budget process. The structural balance rule became legally binding in 2006 through the Fiscal Responsibility Law (Ghura, Pattillo et al., 2012b). Expenditure is based on structural, rather than actual, revenues and takes into account estimates of potential GDP to calculate non-mining tax revenue, and long-term average prices for copper and molybdenum (a by-product of copper) to estimate structural mining revenues (Blondal and Curristine, 2004). While improvement can be made to the rule (Dabán, 2011), the authorities have been largely commended for maintaining fiscal discipline.

To understand how the Chilean government was able to realise these achievements, the following sections will consider steps in the adoption of the fiscal rule, the political process in fiscal rule design, and operational challenges.

Box 4. Chile's sovereign wealth funds

The focus of the structural balance rule is how to allocate fiscal surpluses through the establishment of two sovereign wealth funds: (i) the Pension Reserve Fund; and (ii) the Economic and Social Stabilization Fund, which acts as an economic buffer. The Pension Reserve Fund aims to cover future (after 2016) commitments on minimum pensions. The Economic and Social Stabilization Fund aims to compensate for drops in revenue during periods of slow growth and/or lower copper prices. Resources from the Economic and Social Stabilization Fund can also be used to fund contributions to the Pension Reserve Fund when the overall central government balance is negative (Dabán, 2011).

2. Steps in the adoption of fiscal rules

Since the late 1980s, the Chilean government has engaged in prudent fiscal management by keeping public debt low and cushioning revenue shocks related to copper price volatility (Ghura, Pattillo et al., 2012b). The Copper Stabilization Fund was established in 1987. One of the main aims was to partially isolate available revenues from cyclical fluctuations in the price of copper. This means that when the price of copper goes above a certain target, the additional revenue is deposited in the Copper Stabilization Fund. Likewise, when the price of copper falls, the revenue shortfall is compensated by making withdrawals from the Fund (Blondal and Curristine, 2004).

In 1999, the structural balance showed a deficit for the first time in ten years. After this, the Chilean government decided to implement a new approach to fiscal policy (Fiess, 2001). A structural balance rule was introduced, which set an annual structural balance target at a surplus of 1% of GDP, and had two main objectives. The first objective was to promote fiscal and macroeconomic stability by protecting public spending from the effects of cyclical variations in copper prices and economic activity. The second objective was to improve the net asset position of the Chilean Central Bank to meet contingent obligations and cover the Central Bank deficit (Ghura, Pattillo et al., 2012b). The authorities decided to introduce a structural balance rule, which superseded the Copper Stabilization Fund (Blondal and Curristine, 2004).

The structural balance rule was initially implemented on a voluntary basis. In 2006, the Chilean government decided to legalise this through the Fiscal Responsibility Law (FRL) for three main reasons. First, there was a view that fiscal discipline was overly dependent on the commitment of a few actors. Second, the formal rule aimed to increase transparency and predictability in the implementation of fiscal policy. Third, this allowed Chile to operate a counter-cyclical fiscal policy within an overall framework of fiscal responsibility (Blondal and Curristine, 2004).

The Chilean FRL states that each administration must announce a structural balance target for four years within 90 days of taking office, and also provides guidelines for calculating the structural balance. This provides for the establishment of two resource funds: (i) the Pension Reserve Fund; and (ii) the Economic and Social Stabilization Fund, which acts as an economic buffer (Ghura, Pattillo et al., 2012b). The Central Bank of Chile manages the resource funds, as a fiscal agent of the Ministry of Finance according to the recommendations of an Independent Advisory Financial Committee (Fuentes, 2009).

The structural balance rule has been applied with flexibility, conditional on the macroeconomic forecast (Ghura, Pattillo et al., 2012b). Initially, the structural balance rule was calculated based on potential GDP and the long-run copper price. However, in September 2005, this calculation was modified to include the cyclical effects of the copper price, in order to incorporate the cyclical effects of revenue from private mining. In 2006, two further changes were introduced. First, the estimation of tax revenue from private mining changed to capture the cyclical effect of the recently approved royalty on mining activities. Second, the revenues from CODELCO were adjusted to separate copper revenues from molybdenum, as its price dramatically increased (Fuentes, 2009).

Even though there are not explicit escape clauses, the Chilean government has made changes to the structural balance target and provided justifications for this (Dabán, 2011). For example, during the global financial crisis in 2009, the structural balance target was reduced from 0.5% of GDP to 0% of GDP. Moreover, in the aftermath of an earthquake in 2010, the rule was temporarily suspended. Therefore, the rule has been flexibly implemented in response to the shocks, with justifications provided to the public even though this is not formally required in the FRL.

During the first year of implementing the structural balance rule, there was scepticism from the opposition and other commentators over how the calculations on potential GDP and long-run copper prices were done internally in the Ministry of Finance, and it was difficult for non-specialists to understand the process (Blondal and Curristine, 2004). To enhance credibility, two panels of experts were established with fourteen experts on each panel: one for potential GDP, and the other for long-run copper process. The panels are appointed by the Minister of Finance, who requests estimates for relevant variables for a period of five years ahead. The two extreme calculations on either end are discarded and the average expert estimates are then used for the construction of the structural balance (Fiess, 2001). There is no consensus sought among panel members, and uncertainty in the calculations is not given much attention (Blondal and Curristine, 2004). The expert panels comprise individuals from the government and the opposition, and each estimate is published anonymously. The experts also provide advice on the investment portfolio of the sovereign wealth funds. It has been observed that this has helped protect the operation of the rule from political interference and increased transparency and credibility (Ghura, Pattillo et al., 2012b).

Overall, the FRL has been judged to be consistent with its objectives, through improving fiscal and macroeconomic performance, and by increasing the government's net asset position. Fiscal discipline has been reinforced, and the government has implemented a counter-cyclical stimulus financed by the resource funds during the 2009 recession. The credibility of the fiscal framework has also increased, which is reflected by lower sovereign bond premiums (Ghura, Pattillo et al., 2012b), although, as mentioned earlier, there is still scope to strengthen the rule (see Dabán, 2011 for a detailed discussion on this).

3. Political process in fiscal rule design

(i) How was support created for the fiscal rule?

Two major factors have been important for creating support: (i) the collective memory of the costly high-conflict period (1969-1988); and (ii) the large unprecedented influence of professional economists in politics and policy design implementation (Schmidt-Hebbel, 2008). It was widely appreciated that fiscal responsibility would be a cornerstone for the successful transition to democracy (Fuentes, 2009). The initial socialist experiment was not successful, and the economy was performing well under the liberalisation policies implemented by the military government, including the protection of property rights. Hence there was a

broad-based commitment to a market-oriented approach underpinned by strong fiscal discipline (Blondal and Curristine, 2004).

A number of other factors have contributed to increased cooperation. The political system itself encourages cooperation as the many different political parties are grouped as either right wing (*Alianza)* or left wing (*Concertación).* This means that negotiation must first take place within each group and then between the groups, and so there are only a few leading actors, which reduces transaction costs (Fuentes, 2009). Other actors were relatively less influential, such as the armed forces, trade unions, Catholic Church and business associations (Schmidt-Hebbel, 2008).

In Chile's political system, most fiscal powers are vested in the President and the executive branch, and the constitution limits Congress from increasing proposed expenditures (Dabán, 2004). In this context, the opposition political parties had an incentive to support the fiscal rule to curb growth in public spending (Blondal and Curristine, 2004). It is argued that the Chilean political system encourages politicians to have a long-term perspective on decision-making, as Senators are elected for an eight-year term and Deputies for a four-year term, with a possibility for immediate re-election (Fuentes, 2009). This means that political decisions affect the future of the politician, whereby demonstrating commitment to fiscal discipline would strengthen the position of the incumbent. Furthermore, it has been argued that during the first democratic government after 1989, reaching consensus among political actors was the only available strategy for managing the economy during political transition (Fuentes, 2009).

The increasing role of transparency has also had an influence in consensus building and cooperation. The authorities have committed to publishing information on the sovereign wealth funds, and there are high levels of public understanding in how the structural balance rule is calculated. As a result, in 2008, the Fund for Economic and Social Stabilization was ranked eighth among 34 non-pension sovereign wealth funds in 28 countries by the Peterson Institute for International Economics (Fuentes, 2009). The high levels of transparency mean that deviations from political agreements are easily observed (Schmidt-Hebbel, 2008). Furthermore, the importance of the quality of institutions has been noted in the successful implementation of the fiscal rule, and avoiding crowding out of productive parts of the economy (Havro and Santiso, 2008).

(ii) How did the introduction of fiscal rules lead to a shift in the roles of different actors?
The roles of different actors in the implementation of the fiscal rule are discussed below:

Budget Office
Importantly, it should be noted that the structural balance rule requires available financing to be spent through the budget process. The Budget Office is a powerful institution based in the Ministry of Finance which enjoys strong support from the President. After the independent panels of experts have calculated the structural budget balance, the Budget Office finalises the level of resources available for the coming year. This is used to set the ceiling for the amount available in the 'Bidding Fund', which is used to finance new spending proposals from ministries and agencies. The bids are assessed by the Budget Office based on technical quality and consistency with the political priorities of the President. The staff of the President will hold meetings with ministers to discuss priorities for the budget only once they have been discussed with the Minister of Finance and the Budget Director. While ministries and agencies can challenge the maximum amounts they are issued, this is rarely successful (Blondal and Curristine, 2004). Thus, the structural balance rule has reaffirmed the position of the Budget Office by facilitating the setting of ceilings, which is used to discuss priorities.

Congress
Congress has limited powers, and this is widely accepted across the political spectrum, due to the perceived risk that they would act irresponsibly if they had substantive power (Blondal and Curristine, 2004). The structural budget surplus rule was approved by Congress as part of the 2005 budget approval process, and, given the broad-based support for advanced fiscal discipline, Congress was widely perceived to be supportive of the initiative (Rodriguez et al., 2007). The Chilean Government has committed to conform to the *OECD Best Practices for Budget Transparency* and signed a formal agreement in 2002 to make improved accountability to Congress a priority (Blondal and Curristine, 2004).

Private sector
The introduction of the fiscal rule and political stability provided incentives for increased foreign direct investment for copper mining. Given the high level of public understanding of the fiscal rules, there were

debates on whether the state receives fair compensation from copper extraction. This led to the introduction of a tax on mining activities through the approval of the mining law in 2006 (Fuentes, 2009).

Interest groups
Since the Chilean government enjoys large participation in the ownership of copper through the state-owned company CODELCO, there has been pressure by interest groups to share the benefits. Nevertheless, by fostering a strong institutional environment, based on respect for property rights, transparency and accountability, the government has been able to successfully use the fiscal rule and the resource funds to resist these pressures from rent-seeking groups. Importantly, the position of the government has been enhanced through the strong fiscal stance, and has developed the reputation and credibility of the government, and promoted the neutrality of policies (Fuentes, 2009)**.**

In summary, the successful implementation of the fiscal rule and the commitment to transparency and public understanding of the rule has strengthened the position of certain actors. Within the Chilean political economy environment this is underpinned by a highly hierarchical institutional environment in which there is a strong Executive, a powerful Budget Office, and a relatively weak Congress. There are also a number of high-calibre economists in Chile. As a result, the authorities have been in a position to resist pressure from interest groups, and to generate debate regarding taxation policies for the private sector.

4. Operational challenges

The authorities have been assessing options for strengthening the fiscal rule. In May 2010, the government established a high-level commission to recommend reforms that could make the rule even more effective. When benchmarked against 'best practices' a number of shortcomings have been identified in the practical implementation of the rule (Dabán, 2011). Some of these limitations include: (i) the computation of the rule is very complicated (nevertheless, public understanding is quite high); (ii) there is no quantitative long-term target of the government's net wealth – in recent years there has been some pro-cyclicality of government spending due to upward revisions of the long-term copper price; (iii) there are no specific escape clauses, which led the rule to be temporarily suspended after the earthquake in 2010; (iv) lack of mechanisms to deal with ex-post deviations of the rule has led to end-of-year adjustments; and (v) the design of the FRL is generic and it lacks provisions on transparency, accountability, exceptional clauses, and ex-post deviations, even though some of these are implemented in practice.

There have been a number of suggestions to strengthen the rule in line with best practices and OECD country experiences which include: (i) simplify the way the structural balance is calculated; (ii) avoid unintended pro-cyclicality; (iii) add a medium-term fiscal anchor; (iv) incorporate escape clauses; (v) strengthen monitoring and transparency mechanisms; and (vi) enhance enforcement and accountability procedures (Dabán, 2011). Overall, it is recognised that while these measures would strengthen the rule even further, the authorities on the whole have been successful in implementing a fiscal rule with a high degree of public understanding in order to preserve fiscal discipline (Dabán, 2011).

5. Conclusion

In summary, the Chilean authorities have maintained macroeconomic stability and fiscal discipline, and implementation of the fiscal rule, and the two resource funds have been core to this. Some of the key messages from the Chilean experience include: high-level political commitment to fiscal discipline, the authorities first learning from the process of implementing a rule before committing it into legislation, and flexibility in applying the FRL in response to changes in the economy. The fiscal rule was initially designed in the aftermath of a costly conflict and with high-calibre economists present and active in government. Key features of the political economy environment highlight the role of a hierarchical institutional structure where there is a strong Finance Ministry, and moreover, a powerful Budget Office, a relatively weak Congress and a commitment to transparency with high levels of public understanding.

Annex 2: Timor-Leste country case study

1. Background

Timor-Leste gained independence in 2002 and is one of the g7+ group of fragile countries. The country became an oil exporter in 2004 and petroleum accounts for almost 80% of GDP (2010), making Timor-Leste more oil dependent than Kuwait.[14] In January 2013, the estimated present value of the oil wealth was US$26.2 billion. GNI per capita was US$2,908 in 2010, but the petroleum sector masks a country moving out of conflict where poverty is still prevalent. Non-oil GDP per capita was, at the same time, only US$821, yet this represents a nearly 50% increase in real incomes since petroleum exports began. While petroleum is temporary and volatile, it does provide an enormous potential to develop the economy and increase living standards in Timor-Leste (Ghura, Pattillo et al., 2012b).

To manage the natural resource revenue, a resource fund, the Petroleum Fund, was established in 2005. The objectives of the Petroleum Fund include to: (i) stabilise the volatility of revenue flows and to prevent 'Dutch disease'; (ii) ensure resources are available for the current generation; (iii) keep savings for future generations; and (iv) provide transparency and accountability for the management of oil revenues. Withdrawals from the Petroleum Fund can only be made to finance the state budget, which ensures that all revenue is properly accounted for and that the government budget remains the primary vehicle for public policy (Rasmussen, 2009).

The experience to date with management of the Petroleum Fund has largely been viewed positively. The Revenue Watch Index scored Timor-Leste 70.5/100, based on a relatively high level of disclosure practices in the extractive sector (RWI, 2010). Timor-Leste is compliant with the Extractive Industries and Transparency Initiative (EITI). It is also a member of the International Working Group on Sovereign Wealth Funds, and subscribes to the Santiago Principles, a set of 24 voluntary guidelines that assign best practices for the use of sovereign wealth funds.

To understand how these achievements have been made, this case study will consider steps in the adoption of the fiscal rule, the political process in fiscal rule design, and operational challenges.

2. Steps in the adoption of fiscal rules

In 2005, the Petroleum Fund Law was introduced which established the Petroleum Fund. Initially, spending petroleum revenue was conservative; up until 2008 transfers to the state budget were less than the so-called Estimated Sustainable Income (ESI)[15] (Ghura, Pattillo et al*.,* 2012b). The assessment process for the ESI is presented in Box 6 below. The ESI is a fiscal rule but it is not a legal obligation. Timor-Leste has increased transfers from the Petroleum Fund to the budget substantially above the ESI since 2008. This is to finance large capital development projects that are part of the Strategic Development Plan, with the objective of developing the non-oil private sector and enhancing growth potential (Ghura, Pattillo et al., 2012b).

Box 6. Timor-Leste's Petroleum Fund

In 2005 Timor-Leste established a resource fund, called the Petroleum Fund, to manage petroleum revenue. All petroleum revenue goes into the fund, which is managed by the Central Bank, and the funds are invested in assets abroad. Withdrawals from the Petroleum Fund can only be used to finance expenditures of the state budget. The amount that is transferred is linked to the Estimated Sustainable Income (ESI), which is defined by law as 3% of the value of petroleum wealth (i.e., the present value of net petroleum revenues to the government). The formula requires forecasts of oil prices, production, and operational and capital costs, and the Timor-Leste government has taken a conservative view on these projections. The ESI is updated annually and can change over time. The calculation of the ESI is based on the Norwegian model, which may understate the returns on public investment in a post-conflict setting. Consequently, with the approval of Parliament, the Government has received transfers from the Petroleum Fund considerably in excess of the ESI. Some international partners and civil society have criticised this approach, particularly because of concerns about the capacity to implement projects and the inflation and corruption that can occur when public expenditure is in excess of absorptive capacity.

[14] Figures are from Timor-Leste's 2013 State Budget Book.
[15] See Text Box for detailed explanation.

3. Political process in fiscal rule design

(i) How was support created?
There was considerable public consultation and a commitment to transparency and institution building by the Timor-Leste government. The Prime Minister issued a public consultation paper in October 2004, supported by an extensive public education campaign. The paper outlined the broad principles for the design of the Petroleum Fund. Comments were invited and were made public on the Ministry of Finance's website. This included feedback from the World Bank, IMF, several major NGOs and individuals. Based on this, the final version of the Petroleum Law was approved unanimously by Parliament in July 2005, and the first quarterly report was available in September 2005 (Bacon and Tordo, 2006).

The commitment to transparency and the management of the Petroleum Fund has helped secure the public's trust in how petroleum revenues are being administered. Reports are publicly available on the Petroleum Fund, including quarterly reports, audited annual reports, and all advice provided by the Investment Advisory Board. Parliament is required to publish advice from the Consultative Council, and the Investment Advisory Board's meeting minutes have routinely been posted on the Banking and Payments Authority website (IMF, 2009).

(ii) What was the role of different actors in the implementation of the fiscal rule?
The Petroleum Law clearly specifies the roles and responsibilities of different actors, with the aim of ensuring checks and balances.

Parliament
The Petroleum Law limits transfers from the Petroleum Fund to the national budget as no more than the ESI, unless Parliament agrees after being informed of the consequences on long-term petroleum wealth. If government proposes to spend more than the sustainable income from petroleum wealth, it must give a separate justification to Parliament and also estimate the long-term effect on petroleum wealth. This must be certified by an independent auditor. The aim is to constrain government spending (Ghura, Pattillo et al., 2012b). The final decision rests with Parliament, which consists of several parties to form a governing coalition, based on a multi-party proportional representation electoral system. This requires a formal debate on the issue and the opportunity for reflection on the impact of budget proposals (Bacon and Tordo, 2006). The debate on increasing transfers to the budget in excess of the ESI has been undertaken as part of the annual budget submissions to Parliament, which set out detailed calculations on petroleum wealth, ESI and the projected resources of the Petroleum Fund. Parliament has approved the transfers as part of the budget since the 2009 budget.

Ministry of Finance and the Central Bank
The Ministry of Finance, on behalf of the Government, has overall authority for the Petroleum Fund. The Ministry is responsible for setting the rules for investing the fund's financial resources, which are managed by the Central Bank. The Central Bank employs several firms to manage the Petroleum Fund investments abroad, around three-quarters of which are invested in low-risk government bonds; the remainder are now permitted to be in global equities after an amendment to the Petroleum Fund Law in 2010. The investment portfolio is published.

Advisory Council and Advisory Board
A Petroleum Fund Advisory Council has been established to advise Parliament on the performance and operation of the Petroleum Fund, appropriations from the Fund, and whether these appropriations are being used effectively for the benefit of current and future generations. The council comprises former government and Parliamentary leaders, senior officials *ex officio* and appointees of the Parliament. Membership is also reserved for representatives of civil society, the private sector, and religious organisations. There are legal requirements for regular reporting and auditing. Reports have been of a high quality (McKechnie, 2013).

An Investment Advisory Board advises the Minister of Finance on the investment strategy and makes recommendations for change. Its members have expertise in finance, and three of the five members are foreign nationals. The Advisory Board is responsible for developing performance benchmarks and instructions that the Minister provides to investment managers, and its advice and records of meetings are available to Parliament and the public (Ghura, Pattillo et al., 2012b).

Independent Auditor

Petroleum fund transactions are required to be audited by the internal auditors of the entities involved every six months (Petroleum Fund Law, Art. 22). An external auditor is appointed by the Government and the auditor's report is included in the annual report of the Petroleum Fund, which is available to Parliament and the public (Petroleum Fund Law, Art. 34). The Law requires the external auditor to be an internationally recognised firm appointed on a term contract.

In summary, as the Petroleum Law was established during a post-conflict period in a newly formed state, there was an opportunity to establish new roles and responsibilities of different actors, which placed particular emphasis on transparency measures. However, easy access to petroleum revenue does alter the balance between governments and taxpayers and reduces the pressure for accountability (Rasmussen, 2009). This is something that will have to be closely observed over time as there are changes in leadership in Timor-Leste.

4. Operational challenges

In establishing the Petroleum Fund, advice was sought from the Norwegian government, and this process was facilitated through technical assistance provided by the IMF. In particular, Norway has been providing support to Timor-Leste on capacity building, macroeconomic advice, advice on petroleum taxation, and an extensive education programme. The Timor-Leste Petroleum Fund is considered to be a 'Norway Plus' model. The 'plus' aspect refers to the guideline that only sustainable income from petroleum wealth is supposed to be spent, and that a range of transparency and accountability mechanisms are required to be implemented (DRTL, 2005). However in practice transfers from the Petroleum Fund to the budget have considerably exceeded the ESI. This is due to strong demand for high-return public investment in Timor-Leste, where infrastructure is under-developed.[16]

In addition, there are a number of technical issues in estimating petroleum wealth, involving, for example, when to include new petroleum discoveries in the Fund and what forecasts of future petroleum prices should underpin the calculation. Timor-Leste has taken a conservative approach to estimating its petroleum wealth, but a probability-based approach would likely result in higher petroleum wealth and a higher ESI (McKechnie, 2013). A different set of parameters for operating the Petroleum Fund might have led to transfers to the budget closer to current levels, at least for a few years.[17]

Absorptive capacity constraints have been a challenge. Timor-Leste has received technical assistance to strengthen administrative capacity and a PFM system that had constrained budget execution (Ter-Minassian, 2007). The Government has since established new institutions to better manage large public investment programmes, which are responsible for project appraisal, procurement and monitoring against the budget. An Infrastructure Fund has been established to facilitate large, multi-year projects. The Ministry of Finance has a Secretariat of Major Projects which is responsible for reviewing projects submitted by line ministries. Depending on the cost of the project, approval rests with the Board of the Infrastructure Fund (for projects less than US$5 million) or the Council of Ministers (for projects more than US$5 million). The National Development Agency is responsible for supervising project implementation (Ghura, Pattillo et al., 2012b). A Human Capital Development Fund has also been established.

A further challenge relates to maintaining macroeconomic stability. As the economy is completely dollarised, fiscal policy is the only option available for economic management. This requires matching public expenditure to the absorptive capacity of the economy, particularly the efficiency in implementing public projects. Too high a rate of investment can generate inflation. Although consumer price inflation was in single digits during the period 2006-2010, it surged to 17.3% in 2011 and then decreased to 11.7% in 2012.[18] This situation will need to be closely monitored; it will have implications for future transfers from the Petroleum Fund to the national budget, and whether it remains in line with the ESI (Ghura, Pattillo et al., 2012b).

[16] An ESI of 3% of petroleum wealth may be appropriate for a capital surplus industrialised country where the marginal project may have a return similar to low-risk investment in financial assets abroad.
[17] This shows that the design of a petroleum fund is important, particularly if an objective is to provide strong incentives for a current government to balance the needs of present and future generations, avoid missing short-term investment opportunities, and prevent excessive spending beyond the absorptive capacity of the economy that can lead to inflation and corruption.
[18] Data for December CPI over December in previous year from Banco Central de Timor-Leste website. http://www.bancocentral.tl/en/inflation.asp

5. Conclusion

Timor-Leste is an oil-dependent fragile state. Unlike other countries that fall under a similar category, the authorities have had some success in the management of natural resource wealth, and the adoption of SFIs has been an important part of this process. A number of key features are noteworthy in the Timor-Leste case, including: a commitment to transparency and public consultation in how the resource revenues should be used; the development of a Petroleum Fund Law, which clearly defines roles and responsibilities and emphasises checks and balances; a fiscal rule that is integrated in the national budget process; and a learning relationship with the Norwegian government.

However, some argue that the initial design of the fiscal rule did not sufficiently adapt the Norwegian approach (where the fiscal framework follows a permanent income hypothesis) to the country context of a post-conflict society, which is labour and capital constrained. As a result, in practice there have been several deviations from the fiscal rule to finance critical investments, which have been approved by Parliament. Hence, Timor-Leste is said to follow a modified permanent income approach. The Timor-Leste experience highlights how processes have had to be adapted through ongoing iterative learning processes. In this context, the adoption of the fiscal rule is important as a 'process' for the authorities to deliberate their expenditure requirements and justify deviations that must be approved.

Annex 3: Ghana country case study

1. Background

In March 2007, Ghana celebrated its 50th anniversary of independence; later the same year a consortium of foreign oil companies announced that they had discovered oil in the country. Since independence, Ghana has achieved significant economic and political success: the country is peaceful and has held six successive elections; and at US$1,580, the country has one of the highest GDP per capita in West Africa (2011).[19] In 2011, Ghana's economy grew by 14.4%, one of the fastest growth rates in the world. Moreover, the government has taken visible steps to control corruption over the past two decades.

The discovery of crude oil in significant quantities in the Jubilee field in 2007 positioned the oil and gas sector as a major foreign exchange and revenue earner. Jubilee is estimated to hold recoverable reserves of about 800 million barrels of light crude oil, with an upside potential of about three billion barrels. In addition to oil, Ghana has estimated gas reserves of about 1.6 trillion cubic feet (Tcf). Petroleum production commenced in December 2010. In 2011, crude oil exports amounted to US$2.5 billion with an average production of 70,000 barrels per day (bpd) and petroleum revenue amounted to 5.5% of total revenue, or 1.2% of GDP.

According to World Bank projections (2009), the first phase of production at the Jubilee field will generate government revenues of US$19.4 billion, averaging just over US$1 billion annually and peaking at US$1.8 billion in 2016. The development of the second phase is, however, expected to expand production to 250,000 bpd of oil at peak, with a field life of about 25 to 30 years, commencing some two to three years after the completion of Phase I. In addition to the Jubilee field, a number of additional discoveries have been made and most appraisals suggest that Jubilee is just the beginning of an oil boom in Ghana. Construction of pipelines to convey gas from the Jubilee fields onshore has reached an advanced stage; it is anticipated that gas would flow through the pipelines by the end of 2013.

Ghana has enacted new laws to enhance and strengthen the existing legal framework, and to institutionalise a prudent and transparent petroleum revenue management regime to ensure the optimal collection and use of petroleum receipts. The passage of the Petroleum Revenue Management Act (PRMA) gives Ghana a strong legal basis to regulate the receipt and expenditure of its petroleum revenues. The objectives include to: (i) stabilise the volatility of revenue flows; (ii) ensure resources are available for the current generation; (iii) keep savings for future generations; and (iv) provide transparency and accountability for the management of oil revenues.

The PRMA comprises provisions in line with international best practice and provides a good basis for compliance with the Santiago Principles, a set of 24 voluntary guidelines that assign best practices for the use of sovereign wealth funds. Ghana joined the Extractive Industries Transparency Initiative (EITI) in 2003, has since produced seven reconciliation reports, and became EITI compliant in 2010. In 2009, the government announced that it was going to fulfil its manifesto pledge to extend the initiative to the oil and gas sector. Nevertheless, the Revenue Watch Index scored Ghana 32.3/100, based on the scant availability of revenue transparency in 2010.

To understand the Ghana case further, this case study will consider steps in the adoption of the SFIs, the political process in SFI design, and operational challenges.

[19] Yet, one-quarter of the population still lives below the poverty line.

Box 7. Ghana's Petroleum Revenue Management

A Petroleum Revenue Management Act (PRMA) was adopted in 2011. The PRMA establishes the Ghana Petroleum Holding Fund, a Stabilization Fund, and a Heritage Fund at the Bank of Ghana, and governs the withdrawal of resources from these funds. As required by the Act, the Ministry of Finance & Economic Planning (MoFEP) is required to establish benchmark revenues and ensure proper revenue management in this sector. The PRMA also tasks the Ghana Revenue Authority to assess, collect and account for all petroleum revenue as defined in the PRMA.

The PRMA provides a model for forecasting petroleum revenues, revenue collection, allocations to the allowable sectors, and how the amount to be spent through the national budget should be allocated. The Government's share of petroleum revenues is allocated to three primary destinations: Ghana National Petroleum Corporation (GNPC), Annual Budget Funding Amount (ABFA) and the Ghana Petroleum Funds (GPF).

The PRMA stipulates that ABFA—the petroleum revenues that are spent through the national budget and which should not exceed 70% of net petroleum revenues—should be spent in accordance with Ghana's long-term development plan. Spending allocation is reviewed every three years and may be used as collateral for government debt or liability.

The remaining 30% goes into the GPF, which is made up of two sub-accounts: a Stabilization Fund and a Heritage Fund. The Stabilization Fund, which attracts 70% of the GPF allocation, is established to cushion the impact on, or sustain, public expenditure capacity during periods of unanticipated revenue shortfalls in any particular quarter. The Heritage Fund, on the other hand, will provide an endowment to support the welfare of future generations after the underground petroleum has been depleted. This Fund can be accessed after 15 years with parliamentary approval and the PRMA establishes a committee—the Investment Advisory Committee—to advise the Minister of Finance on viable external investment instruments into which the funds can be invested. The Bank of Ghana is responsible for the operational management of the GPF. Every form of borrowing against the amount in the Holding Fund earmarked for transfer into the GPF is prohibited.

The PRMA states that the management of petroleum revenues and savings shall always be carried out with the highest internationally accepted standards of transparency and good governance, and extensive and detailed transparency requirements are embedded in the Act. The Act makes it mandatory for the government to regularly publish extensive details on petroleum revenue collection and the management of these revenues.

2. Steps in the adoption and implementation of SFIs

In 2008, the government of Ghana organised a National Forum on Oil and Gas, declaring that its priorities lay with the maximisation of state revenues and local content. In 2011, two new Acts were introduced: the PRMA, which established the Ghana Petroleum Holding, Stabilization and Heritage Funds; and the Petroleum Commission Act, which established the Petroleum Commission, providing it with a mandate to regulate and manage the utilisation of petroleum resources and to coordinate policies in relation to them (Section 2 of the 2011 Petroleum Commission Act).

However, for the 2011 budget, the authorities came under scrutiny from civil society groups as they did not publish information on the assumptions it used to establish a benchmark oil price to use for oil revenue projections (Civil Society Platform on Oil and Gas – Ghana, 2011). The calculation of the ABFA has also been a challenge. An upward adjustment was made to the ABFA in 2011, due to forecasting errors regarding expected revenues from carried interest and production volumes. These errors led to petroleum revenues being overestimated in the 2011 and 2012 budgets, resulting in a funding gap that had to be compensated for (Prempeh and Kroon, 2012).

3. Political process in SFI design

(i) How was support created?

Delays, political wrangling and a change in government at the beginning of 2009 hampered Ghana's development of the legal and regulatory framework for the petroleum sector. Hence, Ghana embarked on oil production without a revenue management law in place.

Subsequently however, MoFEP arranged nationwide forums to discuss with citizens the proposals for managing petroleum revenue. In addition, the Ghanaian Parliament held three public forums to discuss the petroleum bills, thereby providing platforms for citizens to contribute to the policy and legislative developments for the sector and to manage expectations (Ghana Oil Readiness Report Card, 2011). Radio and television discussions of the subject provided important inputs to the debate, including on the establishment of a Public Interest and Accountability Committee (PIAC). The World Bank made broad consultations for the two Bills, conditional for its lending.

The intense debate in Parliament on the PRMA delayed its passage into law and sometimes overshadowed the substance of the debate over sustainable management of petroleum resources. However, Parliament overcame its division, and voted in consensus on the transparency provisions and the proposed establishment of the PIAC. Both the PRMA and the Petroleum Commission Act benefitted greatly from the broad countrywide consultations with inputs of civil society organisations, development partners and the general public.

(ii) What was the role of different actors in the implementation of the fiscal rule?
Ghana's PRMA clearly specifies the roles and responsibilities of different actors in the collection and management of petroleum revenues, including the President, Revenue Authority, GNPC, MoFEP, Bank of Ghana, Investment Advisory Committee, Auditor-General, Parliament and PIAC. The President appoints the members of the main institutions that play a role in the oil and gas sector, including the PIAC.

Parliament
Over the past years, the role of Parliament has mainly been focused on law making. Parliament has relied on civil society organisations for analysis of the tabled legislation and, except for the clause on the PIAC, voting has taken place along party lines (Prempeh and Kroon, 2012). However, parliamentary oversight of Executive conduct and performance is considered to be weak (Prempeh and Kroon, 2012). The process of making the detailed rules and regulations necessary to implement a given statute is driven and controlled by the Executive.

As per the PRMA, Parliament must approve the ABFA every year. The Public Accounts Committee could also play an important role in overseeing the petroleum sector through its role in reviewing the budget and the GNPC accounts based on the Auditor General's reports.

Ministry of Finance and Economic Planning
The PRMA requires MoFEP to establish benchmark revenues[20] and ensure proper revenue management in the petroleum sector. MoFEP is responsible for spending the ABFA in accordance with the Medium-term Development Strategy (MTDS), aligned to Ghana's Long-term Development Plan (LTDP). Allocations should be reviewed every three years and spending may be used as collateral for government debt or liability for less than 10 years.

GNPC
GNPC's allocation of petroleum revenues enables the government to settle its cash calls with respect to its share of the equity financing costs, as well as capitalising it to build its capacity to undertake petroleum exploration on its own.

Effective lobbying of Parliament by both the Ghanaian civil society and international donors ensured that adjustments were made to the Petroleum Commission Act. The GNPC lost some of its power, as it was prohibited from serving on the Petroleum Commission, which now reports directly to the Ministry of Energy and Mines. However, since the Petroleum Commission is newly established and regulations for the Petroleum Commission Act still need to be developed, it remains to be seen if the GNPC will indeed focus mainly on commercial activities (Prempeh and Kroon, 2012). An amended version of the Petroleum Exploration and Production Act—with more details on the powers of the GNPC—is expected to be reintroduced in 2013 to clarify and regulate the role of the GNPC further.

Regulatory body
The Petroleum Commission is mandated to issue new contracts and licenses, as well as to regulate and manage petroleum resources. The ability and powers of the Commission to regulate the petroleum sector,

[20] Expected revenue is calculated using a seven-year average of the oil price, i.e., the benchmark price.

including the influence of GNPC on regulating the sector, remains to be seen in practice (Prempeh and Kroon, 2012).

Oversight bodies
The citizen-based PIAC shall monitor and evaluate the Government's management of the GPF, facilitate public debate, and provide an independent assessment about the use and management of the petroleum revenues, in particular to ensure that petroleum revenues are used for the benefit of both current and future generations.

Thirteen organisations experienced in the oil and gas sector currently serve on the PIAC. However, as the PIAC regulations have not yet been approved, PIAC's budget, staffing and access to information rights are yet to be determined (Prempeh and Kroon, 2012). Until now, its activities have focused on building the capacity of its members and preparing the regulations. The PIAC receives its main support from the Revenue Watch Institute.

Consultative Council
As per the PRMA, the Investment Advisory Committee, comprising seven members, shall advise the Minister of Finance and Economic Planning on the investment policy and monitor the performance of the GPF. The Minister shall not make any decisions in relation to the investment strategy or management of the Funds without first seeking advice from the Investment Advisory Committee and the Governor of the Bank of Ghana.

Independent Audits
The PRMA provides for four different types of audits of the petroleum accounts: internal audits, external audits, annual audits and special audits. However, the PRMA has no jurisdiction to audit the GNPC. There have been no recent disclosures of audits of GNPC. The last time such an audit was conducted was in 2011, when the Public Accounts Committee wanted insights into why the GNPC was continuously making losses.

Unfortunately, oversight by the General Auditor is significantly delayed, and the general audit of the 2011 budget is not expected to be completed until 2014/2015.

4. Operational challenges

For Ghana's new petroleum revenue management system to be implemented as intended, a number of operational challenges need to be addressed. On the technical side, forecasting mechanisms for the petroleum revenue are generally weak and need to be strengthened. This was illustrated by the petroleum revenues being overstated in the 2011 and 2012 budgets, which led to a funding gap. Since the Act specifies that no more than 70% of net petroleum revenues should be spent through the national budget, this still leaves the authorities susceptible to oil price volatility. During times of large revenue inflows, the investment focus for the ABFA may lead to absorptive capacity challenges if suitable and viable projects have not been identified.

In terms of transparency and accountability there are a number of challenges. Data on the GPF have so far not been published and the investment strategies for the funds are not known. The PIAC lacks financial resources and technical support to perform its role effectively. The role of citizens in monitoring to ensure transparency in the management of the oil revenues is limited to the availability and understanding of relevant information on the petroleum sector (Civil Society Platform on Oil and Gas – Ghana, 2011). Parliament lacks the technical capacity to scrutinise petroleum contracts and requires significant technical support to play its oversight role effectively. According to the Ghana Oil Readiness Report Card (2011), Parliament also lacks the strength to check abuses in the management of petroleum revenues, as parliamentary enforcement of its resolutions is very weak.

Some of the procedures and processes required for the effective implementation of the fiscal rule have also not been established. For example, there is no procedure for providing forecasts of quarterly cash requirements and a schedule for withdrawals from the Stabilization Fund is not in place. The MDTS has not yet been adopted, although it is in a final draft stage. While no medium- or long-term development plan is in place, the Minister of Finance can allocate the ABFA to his selected priority spending areas. Hence, the government may lack incentives to develop such a long-term plan, which has the potential to create space for corruption and mismanagement (Prempeh and Kroon, 2012).

Finally, PFM in Ghana is generally weak, manifested through wide deviations between budgeted and actual spending, significant leaks in allocated funds between the disbursing agency and their intended destinations, and weak oversight over state-owned enterprise finances (Prempeh and Kroon, 2012).

5. Conclusion

As a peaceful country with high rates of economic growth, the discovery of oil wealth has presented significant opportunities and challenges for Ghana. In some respects, it is still too early to draw concrete lessons in the implementation of the SFI. However, one important lesson from the Ghana case is the investment in consultation with all sections of society in how the petroleum revenues should be managed, albeit after extraction had commenced. Overall, a number of challenges have been identified in the early stages of implementing the SFI: the technical capacity to forecast petroleum revenues needs to be strengthened; greater efforts are needed to promote transparency, as this currently limits the monitoring and oversight role of the PIAC and citizens; and some of the processes and procedures required for effective implementation of the SFI are not in place. This suggests that as Ghana's experience with the management of natural resource wealth evolves these issues will need further deliberation and adaptation to the local country context.

Overseas Development Institute
203 Blackfriars Road
London SE1 8NJ
UK
Tel: +44 (0)20 7922 0300
Fax: +44 (0)20 7922 0399
Email: publications@odi.org.uk
Website: www.odi.org.uk
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