Artificial Fiscal Intelligence

Working Paper:
Estimating the Costs of Corruption and Efficiency Losses from Weak National and Sector Systems

Development Policy Paper

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Summary

Corruption and inefficiency are problems in every government – some more than others. In this paper we argue that measuring the costs of corruption and inefficiency is important for any serious effort to deal with these problems. We note, however, that estimates of the costs of corruption and inefficiency at the country and sector (i.e. government function) levels are not readily available. To fill this critical information gap, we present a new costing model available online that draws on publicly available data, the aim of which is to help governments and stakeholders understand, benchmark and track performance in tackling these problems.

The conceptual framework that underpins the model is that weak public finance systems increase risks, which creates the conditions for inefficiencies and opens up opportunities for corruption and mismanagement and compromises good policy decision making at the national, sub-national and sector levels. The scope for corruption and how corruption works in these sub-systems is also explored. Under this framework corruption is a sub-set of inefficiency. This provides a much broader scope for debate on fiscal policy and reform priorities so that more resources can be freed up for new policies and implementation improved for existing ones.

An important innovation in this approach is to provide cost estimates from different perspectives, such as global, national, sub-national, sector and public finance systems. We present estimated losses across the various components of public financial management systems to allow for a policy discussion about the relative impact of corruption and inefficiency based on the weakness of sub-systems and impacts on public services (e.g. health and education). Sixteen (16) sub-systems are identified using the "*follow-the-money corruption cycle*" to cost the losses (e.g. budget, commitment control, procurement, contract management, verification & payment, etc). Losses at different levels of government are also explored such as at the general, central, state and local government levels. The aim is to promote country level debate of where and how corruption and other inefficiencies operate in different parts of public finance systems and what works to address these challenges.

The model presents global estimates for the costs of corruption and efficiency losses at US$4.5 trillion at the general government level (or 5% of global GDP or more than four times the annual gap needed to fully finance the Sustainable Development Goals). At the budgetary central government level (i.e., excluding sub-national governments) the figure is $1.7 trillion. The differences are driven by much larger flows of reported funds through the general government sector compared to budgetary central government, rather than differences in risk. In the general model, national and sub-national risks parameters are assumed to be the same.

The biggest losses within public finance systems were in the budget sub-systems, often over 30% of all losses for a country. This is much larger than losses from weak procurement or accounting sub-systems for example. This supports the idea that corrupt budgeting (the allocation of resources to vested interests – something we have described as an auction) is a major driver of inefficiencies / losses in high-risk environments. The audit sub-system is another significant source of efficiency loss, as it is a crucial part of the oversight mechanism that supports institutional learning, which can become a tool to obfuscate evidence of the budget auction.

The inclusion of these upstream and downstream corruption throughout the follow the money corruption cycle is intended to help reformers strengthen the case for targeting institutional reforms and anti-corruption efforts in a more systematic way.

The methodology presented in this paper is the first approach that (that we are aware of) that can estimate losses in all the different government functional sectors. Under the model, the size of functional sector losses is determined by the amount of funds flowing in the different sectors. These amounts are unique to each country context. The parameters are sourced from the IMF government expenditure database on the Classification of the Function of Government (COFOG) but could also be applied using country specific data collected on the ground. Under the general model, national risks are assumed as a proxy for sector level risks. Under country specific analysis sector risks would usually be different. Size of losses on average, however, do reflect the amount of funds flowing through the sector. Comparing low- and high-income countries with COFOG data, we find that low income and lower-middle income countries have relatively more money flowing through the biggest three sectors of economic affairs (21% of expenditures between 2014-20), security (19%) and education (12%), compared to high income countries biggest sectors of social protection (28%), health (16%) and education (11%). Estimates of losses in the security sector in different countries are provided. E.g. The model produces loss estimates in the security sector at the budgetary central government level for Afghanistan at US$765m p.a. (31% of security expenditures or 4% of GDP), Argentina at US$2.2b p.a. (25% & 0.4%), Philippines at US$1.5b per annum (23% and 0.4%).

Country income status matters. On average, lower income countries were found to have larger losses in terms of percent of budgetary central government expenditure (30%) compared to high income countries (23%). As a % of GDP, low-income countries (5.5%) have lower levels compared to high income countries (7.4%). This can be driven by the effect that poorer countries generally have smaller governments. That is, losses in rich countries were relatively high because they are rich not because systems are weaker. However, the model infers that there are bigger costs incurred for rich countries resulting from weaknesses in their systems. This also highlights the importance of poor countries strengthening systems as they increase in size and wealth.

Regional results are also driven by country income status. Sub-Saharan Africa had the highest losses as percent of budgetary central government expenditure at 27.8%, while North America had the lowest at 18.9%. As a percent of GDP North America had a particularly low level of losses at 2.6% of GDP compared to the region with the highest estimated losses in East Asia, and the Pacific at 9.0%.

Highly resource dependent countries were found to have the biggest problems in all key inefficiency measures (% of expenditure, revenue, and GDP and per capita).

Fragile states groupings had similar profiles to income status, but at higher levels for the top ten most fragile (e.g., 35% of budgetary central government expenditure).

There are data gaps which, if corrected, could increase these estimated costs further. Some countries (e.g. China, Zimbabwe and Somalia) do not have enough data on the IMF fiscal databases used for modelling. This meant the losses in these countries were not calculated or may be under-estimated. Corruption and efficiency losses in public corporations are also excluded from the model. Collection of country specific data from field work would make the model more accurate. Comments are currently being sought from interested stakeholders.

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Acronyms and Abbreviations

AC	Anti-Corruption
AFI	Artificial Fiscal Intelligence
AML	Anti-Money Laundering
b	Billion
BC	Before Christ
BCG	Budgetary Central Government
Bk	Book
BTI	Bertelsmann Stiftung's Transformation Index
CBA	Cost-Benefit Analysis
CG	Central Government
Ch	Chapter
COFOG	Classification of the Functions of Government
CPI	Corruption Perceptions Index
CPIA	
CRF	Corruption Risk Forecast
CSIS	Center for Strategic and International Studies
DAI	Development Assurance Index
DFRA	Development and Fiduciary Risk Analytics
DR	Development Risk
DRI	Development Risk Index
EGDI	E-Government Development Index
FAI	Fiduciary Assurance Index
FR	Fiduciary Risk
FRA	Fiduciary Risk Assessments
FRI	Fiduciary Risk Index
FTM	Follow-the-Money
GCI	Global Corruption Index
GDP	Gross Domestic Product
GFS	Government Finance Statistics
GG	General Government
GG	General Government
IMF	International Monetary Fund
IP	Intellectual Property
m	Million
MAPS	Methodology for Assessing Procurement Systems
OBI	Open Budget Index
PEFA	Public Expenditure and Financial Accountability
PEM	Public Expenditure Management
PFM	Public Financial Management
POs	Purchase Orders
PPPF	Public Production Possibility Frontier
QA	Quality Assurance
RoLI	Rule of Law Index
SPI	Statistical Performance Index
TADAT	Tax Administration Diagnostic Assessment Tool
TBPM	Team-Based Performance Management
tr	Trillion
UCI	Unbundled Corruption Index
UK	United Kingdom
UNCAC	United Nations Convention Against Corruption
UNODC	United Nations Office on Drugs and Crime
US$	US Dollars
VFM	Value for Money
WGI	Worldwide Governance Indicators

> ***"Galileo … asserts that in all these phenomena we must … try to make measurable all that is not directly measurable."***
> *Thomas-Henri Martin - in*
> *Galileo: The Rights of Science and the Method of Physical Sciences (1868)*

1. Introduction

1. **Understanding the cost of inefficiency and corruption in government systems is something that is a challenge for all countries.** For developing countries whose needs are the greatest and resources are the smallest, increasing the amount of public investment flowing to priorities and reducing the losses from waste, mismanagement and corruption are first order issues. Reducing corruption without quantitative measures of the costs to frame the discussion makes the political and policy challenge of achieving reform even greater. This paper sets out a new methodology to measure efficiency and corruption losses in a format that is aligned with government systems, relatable to policy makers and comparable across countries. The aim of this work is to help senior government officials and stakeholders understand, benchmark and track performance in tackling these problems.

2. **Estimating the costs of corruption, and more broadly efficiency losses, for individual countries and globally, is technically difficult to do with any degree of credibility.** Presenting estimates can create political sensitivities and challenge entrenched vested interests who will tend to cast doubts on the veracity of any numbers. The challenge of creating the space for meaningful policy reforms is evident in the relatively few publicly available estimates of the costs of corruption and efficiency losses at country, regional and global levels. The adage that what gets measured gets managed is true for corruption, if it remains hidden from view it is very difficult to root out. For developing countries with high dependencies on international development assistance, there is the added pressure from their development partners who tend to put the risk of their aid being affected by corruption at the top of their concerns. This creates perverse incentives for governments not to be open and honest about the level and impact of corruption in their systems. For donors it means shying away from hard decisions about the use of country systems, and a preference for parallel systems and contracted implementing partners for their programs. We believe a key first step to improving this policy landscape is a robust and consistent way to estimate the risk of efficiency losses, including from corruption, to provide a foundation for a policy discussion about how to address the underlying issues.

3. **The most common approaches to tracking progress of reform efforts and improved efficiency are generally through some form of index or benchmarking system** on quality of systems. Approaches include the Public Expenditure and Financial Accountability (PEFA) framework, Bertelsmann Stiftung's Transformation Index (BTI), which are based on a conceptual frameworks and rigorous rating and verification systems. Log frames of expected outputs, outcomes, and impacts are also used. There are also purely subjective assessments based on peoples' preferences or opinions, such as the Corruption Perceptions Index (CPI). Then there are composite indexes, which are indexes of indexes, such as the Corruption Risk Forecast (CRF) Global Corruption Index (GRI), the Anti-Money Laundering Index (AMLI) and the E-Government Development Index (EGDI). While very useful for their

particular purpose, they do not translate well into systems and processes used by policy makers to make decisions about where and how resources are invested. We believe that quantifiable measures of the costs of corruption and other inefficiencies, which are clearly linked to national public finance systems will help policy makers push for reforms that lower corruption, increase efficiency and improve resource allocation for better development outcomes.

4. **In designing a methodology to measure the costs of corruption and efficiency losses there are both theoretical and practical constraints**. There are plenty of measures of corruption[1] based around surveys (e.g., Corruption Perceptions Index (CPI)), prosecution numbers, index of indexes (e.g., CRF), and indirect measures, such as transparency under the Open Budget Index (OBI), and procurement and bribery "red flag" methodologies. These all have their limitations, but three key general criticisms are that:

i) they are not easily tested empirically;

ii) causality is difficult to draw out; and

iii) they tend to appear to overestimate problems[2].

5. **Relying on perceptions rather than empirical measurement can introduce additional bias.** Countries with more open media discussion, for example, may appear to be more corrupt, because there is more debate about corruption, whereas in some countries, it is very difficult to raise the topic at all without severe consequences. Perceptions of citizens can be influenced by these discussions and the absence of such discussion.

6. **Corruption is also as they say, in the eye of the beholder:** one person will see corruption as a failure of moral leadership and a direct threat to good economic and social outcomes, while another person will see it as a political reality based on well-established "rules of the game" that allows the wheels of government to keep turning in an otherwise difficult operating environment.

7. **Tackling corruption through traditional means can have adverse impacts.** There are many examples of reformers that see their efforts to clean up corruption through accountability measures such as increasing arrest and prosecution rates and/or broad-based disclosure policies result in policy inertia that erodes political capital. There are many other examples where people have claimed to manage a system with "efficient corruption" that has a minimal impact on resource allocations and builds rather than draw on political capital.

8. **Implicit in existing corruption measures are ideas of moral failings and unfairness, and hence, they can be thought of as morality measures.** For example, a poor score on a corruption index only

[1] See UN Office of Drugs and Crime (UNDOC) 2nd Task Force on the Measurement of Corruption which led to the 2018 publication of the Manual on corruption surveys: Methodological guidelines on the measurement of bribery and other forms of corruption through sample surveys (UNDOC, 2018). See also a recent paper "Advances in measuring corruption and agenda for the future" (Fazekas & Ferrali, 2023) and the International Anti-Corruption Academy's Global Programme on Measuring Corruption (iaca.int) (IACA, 2023).

[2] For a discussion on the limitations of corruption measures see Measuring Corruption: Still Hard after All These Years | Center for Global Development | Ideas to Action (cgdev.org) (Kenny, 2022). See also a recent article (12 March 2023) from The Atlantic on the use of unreliable corruption statistics; "The Statistics That Come Out of Nowhere" (Ray, et al., 2023)

says that corruption is possibly a bigger problem compared to another country[3]. Common morality measures, like perceptions-based indices, while very useful in certain contexts, make it difficult to apply measures routinely within fiscal policy and reform settings. They can be very useful as a "name and shame" method to drive improvements and social change, but there is little evidence that over the short-to-medium term they can improve how public resources are allocated. The problem with morality measures is not that they cannot drive change, but that morality is difficult to quantify or turned into useful metrics, though they can still open doors for discussion, debate and pressure.

9. **The model in this paper merges system quality and morality measures with fiscal evidence to produce a new metric for efficiency loss.** By focusing on the costs that corruption and inefficiency creates and where the costs are generated, opens up opportunities to do something more about the problems. Not just from making the costs more explicit, it also offers the ability to save real money (creating more fiscal space for investment), which has the potential to increase political capital creating more space to: i) implement reforms; ii) close loop holes; and iii) improve institutional cultures.

"By focusing on the costs …offers the ability to save money … which can increase political capital and create space for reform."

10. **There have been a few attempts at producing global estimates of the costs of corruption with total estimates ranging between US$1.0-2.5 trillion[4] per annum**. The estimates for developing countries are around US$0.5-1 trillion p.a. [5] or two-to-three times the level of annual official aid to low-and middle-income countries. Consistent and credible country-level estimates, however, are not publicly available, though some methodologies are described under various frameworks, and so country level estimates can and have been produced on a case-by-case basis.

11. **This paper presents for comment a new methodology that combines established public finance concepts with available data in a new online model[6]** that produces quantified results on the costs of corruption and other efficiency losses for every country in the world. With this model we essentially use an indirect method for estimating losses, which ***we believe puts a defendable number on the potential costs of inaction in the face of weak systems and institutions***. While we acknowledge this approach has its limitations, it is not intended to be a forensic audit of corruption. Its potential is that it helps decision makers to act on corruption, by for example, highlighting where and how the different types of efficiency losses (including corruption) operate in different parts of the government's national systems.

12. **Having a measure that is consistent and comparable across countries, even with some margin of error, can arm those in leadership positions** with new tools to argue for policies that do something about corruption and waste in a systematic way. This paper is primarily intended to help senior

[3] More granular indexes may point to certain areas where corruption might originate such as weak judiciary, opaque government operations or laws that provide too much discretion to officials.
[4] A common estimate is $1 trillion estimated (upper bound 1.76) in 2005 by Daniel Kaufmann in "Myths and Realities of Governance and Corruption" (Kaufmann, 2005). In 2021 dollars it is equivalent to $1.4 trillion (upper bound = $2.5 trillion). A regional example is that from RAND Europe, which had a couple of goes at estimating costs of corruption in procurement within Europe with €1 trillion in lost GDP and €5 billion in direct costs estimated in 2016 (RAND, 2016) with another estimate of €5 billion in 2023 (RAND, 2023).
[5] In 2012 US$ as estimated a CSIS publication "The Costs of Corruption – Strategies for Ending a Tax on Private-sector-led Growth" (Hameed & Magpile, 2014). (In 2021 US dollars it is $0.6 -$1.2 trillion).
[6] See https://artificialfiscalintelligence.com/powerbi/costs-of-corruption-and-efficiency-losses/ (AFI, 2022)

government officials optimize political capital to strengthen their systems and institutions to get better budgetary outcomes.

13. **Dealing with the costs of corruption and efficiency losses can have profound impacts in key areas of international and national interests.** For example, by reducing corruption and efficiency losses through public finance reform and improvements to institutional cultures, there are direct benefits that flow to various public policy areas including poverty reduction, climate change, gender equality, conflict reduction and prevention, and attainment of the Sustainable Development Goals (SDGs). All these challenges become more achievable as corruption / inefficiency reduces, fiscal space increases, and evidence-based decision making improves.

14. **There are some weaknesses in our approach that we have made efforts to address in the methodology.** Firstly, the quality of the estimates of the costs varies across countries. Estimates are determined by the availability and quality of the risk and fiscal data used, including for model parameters. The data needs to be tested to minimise the impact of poor-quality raw data.

15. **Like most analysts we also use information from non-public sources** (such as confidential interviews) to improve the accuracy of parameters. That process should be repeated and refined at a country level using the model outputs as the baseline moderated by a system of third-party validation of outcomes. Of course, it can be challenging to secure unbiased testimony and to triangulate data from different sources, but it is by no means impossible and would be incentivised by published estimates as people seek to either validate or invalidate the estimates produced by the model. That validation data could be used to strengthen the model.

16. **Secondly, the problem of causality is dealt with through the conceptual framework.** In the model, the underlying theory is that weak systems and institutions means more opportunities for corruption, incompetence and mismanagement, leading to quantifiable efficiency losses, of which corruption can be a major driver. In this model, the outputs are primarily a measure of efficiency loss, not just corruption, in recognition of the complex and numerous factors at play. While the model can drill down on corruption risks, the standard approach provides much broader scope for policy debate on reform priorities and the strengthening of systems and institutions[7].

"The underlying theory is that weak systems and institutions means more opportunities for corruption, incompetence and mismanagement leading to quantifiable efficiency losses, of which corruption can be a major driver"

17. **Finally, the issue of the tendency for existing models to overestimate corruption** is dealt with through the methodology, by setting up a system that allows empirical testing to feed back into the model to refine parameters and improve the estimates over time. The use of sensitivity analysis can help assess the impacts of uncertainty and over estimation problems as part of the empirical testing process.

18. **This paper is presenting a model for validation rather than definitive estimates of costs by country.** As such we are testing the methodology using readily available and comparable data. All countries used the same methodology for calculating losses. Estimates are produced only for countries that have fiscal data on the IMF-GFS databases as well as risk data, drawn from a range of global

[7] Losses based on corruption risk alone, can be produced by the model, but doing so reduces the reform options available to reduce the losses.

databases (e.g. PEFA, CPI and BTI)[8]. The costing model can estimate the costs of corruption and efficiency losses at global, regional and income status levels, while also being able to drill down to the country level or other country group levels (e.g. small island states, landlocked, resource dependent etc), and importantly, down to the public finance sub-system level, such as budgets, procurement, accounting, and payroll etc.

19. **The baseline estimates of the annual costs of corruption and efficiency losses following this methodology is almost $2 trillion at the budgetary central government level**. This is consistent with other global estimates. The level of government, however, is particularly important as the methodology is built around how much public money flows through different systems within a government, whether that be at the central government level or the general government (national) level, which includes all state and local governments (sub-national)[9].

20. **At the general government level, the annual efficiency losses produced by the model are a lot higher at around US$5 trillion in 2015 US$ (c5% of GDP).** It is worth noting that less than a quarter of the US$4.5 trillion would more than cover the estimated annual financing gap of US$1 trillion still needed to reach the Sustainable Development Goals (SDG) (Kharas & McArthur, 2016). This is significantly more than previous global estimates of corruption and is a result of measuring other efficiency losses, not just the costs of corruption[10]. It is important to be mindful that the methodology first and foremost costs efficiency losses, of which corruption is a subset.

21. **How much is due to corruption has not been estimated in this paper, though the methodology allows the user to easily drill down on corruption risks only**. The methodology can also be adapted to focus only on the effects of corruption risk or use of corruption-to-efficiency loss parameters. The model is already designed to produce estimates of losses driven from corruption focused risk data only, like CPI, CPIA.D5-Transparency, Accountability and Corruption, and WGI.6– Control of Corruption, and AML Index. But under this use, it is likely that the impact parameters would need to change, and that information had not been sought specifically. Another option that can be explored is for corruption focused risk data to be used dynamically to feed into impact parameters rather than risk parameters. This would have the effect of reducing loss estimates for low-risk countries while increasing the loss estimates for high-risk countries if existing impact parameters were not changed. More research is warranted on the relationship between efficiency losses and corruption, including through the use of different forms of the equation, corruption focused impact parameters, and use of corruption risk data. (See also the discussion on linear equation issues raised at page 34.)

[8] See Attachment G: Data Sources and Updates on page 136.

[9] The full public sector, which is defined as the general government plus public corporations, is not covered due to data limitations.

[10] A 2018 WEF cost of corruption forecast had higher estimates of around 5% of GDP. See Global Cost of Corruption at Least 5 Per Cent of World GDP (UN, 2018)

2. Background

The Relationship Between Inefficiency and Corruption

> ***"All corruption is an efficiency loss, but not all efficiency losses are corruption."***

22. **There are exceptions to the common-sense rule that almost "all corruption is an efficiency loss, but not all efficiency losses are corruption".** Short term corruption might represent improved efficiency when, for example, grand corruption gets important infrastructure built. The classic example is when a corrupt process to build a bridge that corrects past government policy failures and cost-effectively delivers a relatively more efficient and effective transport system. This is the idea of efficient corruption, which has been around for decades and has been shown to be accurate in some contexts over some periods[11].

23. **When viewed over the longer term, however, the efficiency gains from those forms of corruption may well be swamped by the consequential losses**. For example, where a culture of corruption prevents better evidence-based policy decision making and stifles performance focused management styles. But the common-sense rule underscores that the cost of corruption is a subset of the costs of efficiency losses from weak public finance and anti-corruption systems.

24. **This can be compounded with the pendulum swinging to overly engineered administrative accountability systems that slow down public investment** to the point of complete inertia. In extreme examples, systems are made so safe that not only is no money stolen, but no money is spent at all. In some worse case scenarios, fake accountability is used to distract citizens and donors and used to facilitate corruption, where a policy or procedure provides officials with discretion over budget allocations in the name of "controls" that are then used to extract rents.

Is a New Measure of Corruption and Inefficiey Useful?

25. **An important question emerges when evaluating corruption costs and efficiency losses: *Is it helpful or not to construct quantitative estimates at the country level*?** This paper argues that it is. In the past, we have generally taken the view that from a technical assistance and professional development perspective, the focus should be on securing genuine reform efforts, helping to build stronger systems, and improving institutional cultures incrementally over time[12].

26. **This is in recognition of the idea that development is sequential, adaptive and opportunistic.** And so, the focus has been more on sequentially improving the quality of systems, management and institutional cultures and reducing risks in a way that solves public policy problems, rather than quantifying efficiency losses and leakages to use as some form of benchmarking and public awareness tool.

27. **Fiduciary Risk Assessments (FRA) are a commonly applied tool for both donors and governments to assess risk and some have tried to estimate the costs of corruption.** Typically, these FRA's are supplementary (a precondition for some other event), are not made public and vary in

[11] In 2010 Méon and Weill found some evidence that corruption can be efficiency improving in countries where institutions are ineffective. Corruption here can be seen as "greasing the wheels" that are jammed from broken institutions. See Is Corruption an Efficient Grease? (Weill & Pierre-Guillaume, 2010)

[12] This was the approach AFI directors took in a number of countries that we worked using methods such as Team-Based Performance Management (TBPM) and Development and Fiduciary Risk Analytics (DFRA).

methodology. Moreover, they have not been used routinely in engagements between governments and their international development partners for policy dialogue or fiscal performance benchmarking.

28. **Risk and reform are not enough.** After many years of field experience in this area, we now realise that the general approach to focus on reform, system strengthening and institutional culture, without a rigorous quantitative baseline to work from, may in practice be constraining reform efforts. Without a clear-eyed assessment of the challenges facing the government from efficiency losses and corruption, it is unlikely that resources will get channelled efficiently and effectively. A frank and fair discussion within governments upfront, and with trusted partners/honest brokers might well be a necessary condition for genuine and lasting reform in many country contexts. Without it, the more likely outcome is slow and unsteady reform at best and fake reform to cover up corruption at worst.

29. **The approach underpinning the model is intended to help understand how political capital can be best used.** A quantitative baseline on corruption and efficiency losses can help government leadership decide how they create and use political capital. A common situation is where genuine reformers are tightly constrained by powerful vested interests. Knowing where and how to prioritize interventions would allow for more effective design and targeting of reforms. Maybe it is time to be franker and fairer about how corruption/inefficiency and reform operate in public finance systems to facilitate more viable and enduring solutions.

"Genuine reformers are tightly constrained by powerful vested interests …
Maybe it is time to be franker and fairer about how corruption/inefficiency and reform operate in public finance systems"

30. **In 2019, we presented our first conceptual paper[13] looking at corruption through a public finance lens.** It introduced a "follow-the-money corruption cycle" to demonstrate in theory how corruption works at each stage of the public finance management system. This paper builds on that work to present the costs of corruption and efficiency losses at each point of the "follow-the-money corruption cycle" for every country in the world with comparable risk and fiscal data. Box: 1 below reveals how the very systems designed to control corruption are used to facilitate corruption.

31. **The conceptual framework that underpins this public finance and risk-based approach to estimating corruption costs and efficiency losses** is that: *weak public finance systems increase risks[14], which creates the conditions for inefficiencies, opens up[15] opportunities for corruption and mismanagement and compromises good policy decision making*. Our FRA methodology has been to estimate the amount of money flowing through the public finance system that was at risk and apply a quantified risk index to work out the losses (or risk of losses) based on the amount of funds linked to and flowing through that part of the public finance system.

[13] See Laing's post in IMF PFM blog: How Corruption Works in the Public Sector—One Easy Lesson (Laing, 2020)
[14] In this paper fiduciary and development risks are used. Development risk is defined here as the risk that the national systems do not adequately support the development objectives of the Government and the country. Fiduciary risk is defined as as the risk that funds are not used for authorized purposes (i.e., not corrupt purposes); do not achieve value for money; or are not properly accounted for (e.g., corruption covered up).
[15] Or does not close existing corruption pathways and practices.

Box: 1. Corrupt Budgeting – Using National Systems To Facilitate Corruption

"The budget process is a theatre that masks the real distribution and spending."[16]

Viewing corruption through a public finance lens can be illustrated by looking at one point on the "follow the money cycle" – the budget. Corrupt and corrosive budgeting is about how corrupt or corrosive deals are managed using the very systems that are designed to promote efficiency and reduce corruption. For corrupt budgeting to work, deals done in the budget have downstream impacts in all public finance sub-systems:

Allotment System: Allotments are prioritized for corrupt budget deals on projects or programs – rather than being used for true cash management purposes or genuine public interest gatekeeping functions. The allotment system can easily become a gatekeeping system for corruption rather than prevention.

Procurement System: Grand collusion on deals allow non-competitive procurement to ensure the "preferred" supplier is awarded the contract – this can be through various means, including unjustified single source selection, inside information on bidding or outright manipulation of documents.

Contract Management System: Further money can be made on the budget deals during contract management – even if the procurement process was fair – by changing the terms of the contract to one, which is far more favourable, shifting benefits to the supplier and shifting the risks to the public. This can be achieved in different ways such as through bribery and revolving doors (officials go to work for a firm then back to government).

Verification and Payment: When it comes to getting paid on the corrupt contract, rents are extracted by paying officials to verify that the good or service was delivered to satisfaction when it was not, or corrupt officials do not process the payment until a facilitation payment is made. Once this payment is made, the supplier will then be required to pay again to get paid.

Audit System: To cover the tracks of the upstream deal in the budget and the corrupt steps taken throughout the process, audits need to be clean, so any irregularities that get discovered are easily cleared through bribery, threats and/or informal administrative penalties.

The Personnel and Payroll System: The deals done during budget discussions in parliament, for example, can include deals for the placement of "friends and family" in key positions throughout the follow-the-money corruption cycle. These can be through advanced ghost worker, pay for position schemes, and illegal garnishee systems, where a share of employees' wages is shared amongst an elite network. "Pay for position" and "pay to retain" positions are common in most patronage systems.

Revenue System: Deals done in parliament can flow directly into the revenue system, whether they be on tax related matters (e.g. certain forms of deregulation, direct theft and fraud, and tax evasion schemes), natural resources (e.g. unfair contracts on royalties and contract management); and other non-tax revenue (e.g. fees and fines for authorized or unauthorized reasons).

Balance Sheet Management: Deals done during budget discussions can also be related to corrupt and corrosive plans to influence government assets and liabilities. For example, plans can include: i) corrupt acquisition and disposal of government assets (which can be worth billions); and ii) awards of guarantees, loans and debt write-offs not in the public interest.

Service delivery is impacted due to corrupt budgeting, including money going to the wrong programs and projects in critical areas like health and education. Deals are made, for example, on whom are to win contracts for school textbooks, school meals, pharmaceuticals, new schools and new health clinics and hospitals. Corrupt deals can result in textbooks and pharmaceuticals being purchased well above market prices, and if they do actually get purchased, they never get delivered to front-line operations, often getting diverted to vested interests in the private sector (e.g. pharmacy supply cartels).[17] The impacts on citizens can be massive, including poor education and health outcomes and the consequential economic and social impacts.

See also Attachment C: Scope for Corruption at All Points of the Follow-the-Money Cycle on page 70.

[16] See The budget as theatre - the formal and informal institutional makings of the budget process in Malawi. Final report (Rakner, et al., 2004)

[17] See also A World Bank paper on "The Many Faces of Corruption" (Anon., 2007)

32. **We use global fiscal databases (i.e. IMF GFS database) and AFI's development and fiduciary risk indices[18] to estimate potential losses.** The losses are estimated for each part of the public finance system. In aggregate they form estimates of whole-of-government systemic losses for every country that has risk and fiscal data on global databases for a reference year.

Pros and Cons of Estimating Costs of Corruption and Other Losses

33. **There are benefits and problems of producing quantitative estimates of efficiency losses and the costs of corruption.**

34. **Benefits of producing estimates of losses** include:

- ***a much more powerful communication tool*** than fiduciary risk or corruption indexes as the estimates can be more meaningful to the public and other critical stakeholders and be more effective "pressure points" (Mason, 2019) to incentivise governments to act;
- ***a broader foundation to understand fiscal space*** and create opportunities to free up more resources for government policy priorities, offering more fiscal options to finance officials and cabinet minicrsters; and
- ***a way to emphasize where corruption and efficiency losses come from specifically*** and to direct problem-solving efforts to those areas, allowing a broader debate on how corruption works in public finance systems.

35. **One area that can benefit is influencing how aid for is allocated for reform and institutional strengthening.** Having estimates of corruption and inefficiency in different parts of the "follow the money corruption cycle" provides a basis to assess how effective reform efforts are – in this case how effective they are in reducing the costs of corruption and other efficiency losses. And more importantly, how cost-effective they are. What this analysis reveals as presented later in the paper is that donor resources are almost certainly going to areas where reforms cost the most rather than where reforms are most cost-effective. There are interesting opportunities to do a lot more on the cost-effectiveness of aid interventions using this type of data.

> ***"Donor resources are almost certainly going to areas where reforms cost the most rather than where reforms are most cost-effective "***

36. **The counter challenges are, however, significant** and include:

- ***Accuracy and therefore the reliability and applicability*** of estimates in policy settings (i.e. model estimates are difficult to verify);
- ***Reform minded government officials are generally sensitive*** to local political dynamics when discussing corruption in their country, which can easily compromise engagement***;*** and
- ***Areas where corruption might be the greatest (e.g. during resource allocation) is an inherently political process*** making it challenging for technical reforms to have much impact in the absence of a supporting political consensus or strategy.

37. **On accuracy, we agree that it can be challenging to secure unbiased testimony and to triangulate data from different sources to strengthen model parameters, but it is not impossible**.

[18] AFI's Development and Fiduciary Risk Analytics (DFRA) methodology is a specialised index of indices drawn from other international databases like PEFA, CPI and BTI. See also "Who Cares About Development Risk?" (Laing, 2016).

Accuracy would be incentivised by having published estimates, which people could seek to either validate or invalidate. Sensitivity analysis on key parameters can also be used to help deal with uncertainty issues. Field testing could also a range of different methods to verify assumptions.

38. **Probably the biggest challenge is the sensitivity of both leaders and officials to the local political context and the resulting threat to constructive engagement** between governments and their donors if a spotlight is shone on corruption as a driver of inefficiency. Our approach in the past has been to consider that the political issues are something that can only really be discussed and resolved by reformers within government leadership circles in close but private consultation with their peers and some trusted partners. But from experience, particularly in contexts where corruption is pervasive (the accepted norm) this might not be the approach that works best to help reformers within government leadership to leverage reform opportunities given the political realities.

39. **Having a frank and fair discussion around the costs of corruption in both rich and poor countries can help improve the effectiveness of technical cooperation**. However, herein lies a conundrum for both reformer governments and donors**.** Technical advisers are rarely in the room when politically sensitive decisions are made, but the vested interests working against reforms almost always are. The purpose of this quantitative approach is to raise the cost of inaction by making it easier for officials, donors, and the public to understand the dollar cost of the decisions that allow or at times encourage corruption. Moreover, better, analysis-based data gives genuine reformers a more powerful tool to support their case.

"Technical advisers are rarely in the room when politically sensitive decisions are made, but the vested interests working against reforms almost always are."

What Do We Mean by Efficiency and Corruption?

Efficiency

40. **This section provides a review of what we mean by efficiency and corruption before moving on to the methodology for estimating the costs of corruption**. It summarises the different views of efficiency from different fields such as economics, public finance and auditing and accounting. It then reviews the definitions of corruption and different views of its impact.

41. **Efficiency means different things to different people.** The specialized fields of microeconomics, public finance, and auditing all have their own take on what efficiency means. They also have different ways to explain it, measure it, increase it, and prevent it from decreasing.

Economics Version of Efficiency

42. **In economics there are a few different forms of efficiency.** Economic efficiency in microeconomics draws on two related ideas, both forms of efficiency themselves: Pareto Efficiency and Productive Efficiency. Pareto efficiency is based on individual preferences in that a Pareto efficient outcome is one where no-one could be made better off by redistributing resources differently. Productive efficiency on the other hand is based on the idea that no other mix of inputs could produce more outputs. A productive efficient outcome may not necessarily be a Pareto efficient one (CFI, 2022).

43. **There are many other types of efficiency in economics** (Pettinger, 2019) and (Pettinger, 2019): Five of the most common are:

- ***Allocative efficiency*** – which is where goods and services are produced to satisfy demand. In public economics, it is about allocating public resources in a way where government can achieve its policy priorities (or have the biggest impact) with the lowest level of public resources (lower taxes, lower expenditure, lower investment).
- ***Distributive efficiency*** is when consumption of goods and services is by those who need them the most. It is based on the idea of equitable distribution of resources. In public economics, it is about ensuring resources allocated reach the people who can benefit the most or can produce the biggest impact with those resources.
- ***Technical efficiency***, where outputs are produced at least cost or use the minimum amount of inputs (e.g., labour, capital, and technology) - it is the effectiveness with which a group of inputs produces an output.
- ***Dynamic efficiency*** brings in the time dimension, where technology, culture and work practices impact on input costs and output production capabilities. In public economics, it is about fiscal effectiveness and fiscal sustainability.
- ***Social efficiency*** incorporates social costs and social benefits (externalities[19]) to the resource allocation and production calculations and specifically accounts for the failure of competitive markets to deal with these types of costs and benefits.

Public Finance Economists Version of Efficiency

44. **The public finance perspective of efficiency differs from the standard approach in economics as government policy is what determines allocative preferences** not individuals' aggregated preferences/utilities. It also differs in that the political environment is inextricably linked to the machinery of government, where for example, political commitment or will is also "a function of the quality of the advice provided to politicians and the base of support for reform" (World Bank, 1998, p. 4).

45. **The leading public finance view of public sector efficiency is the one based around the three levels of budgetary outcomes**: i) aggregate fiscal discipline; ii) strategic allocation of resources; and iii) efficient service delivery (World Bank, 1998, pp. 27-30)[20]:

1. ***Aggregate fiscal discipline*** measures reveal if allocative, distributive, dynamic and technical efficiency are being achieved in the public sector through budget prosses. A core indicator that aggregate fiscal discipline is being achieved is when announced budget targets are consistently met. Under this principal, budgets should be the result of explicit and enforced decisions; they should not merely accommodate demands[21].
2. ***Strategic allocation of resources*** (or allocative and dynamic efficiency) is about allocating public resources to the highest priority areas or areas that have the greatest social and economic impact and doing so over time – from a fiscal perspective it means taxing where it has the least impact, and spending where it has the most; and

[19] Externalities where the action of one person or entity, has an impact on another without the costs or the benefits being incorporated in the market price. Pollution is a classic example of a negative externality, while riding a bike to work that reduces traffic is an example of a positive externality.
[20] See also Original PEFA (PEFA, 2005, pp. 66-68) and 2016 PEFA p 2 (PEFA, 2019)
[21] Aggregate fiscal discipline refers to the control of the key measures of fiscal performance, including total spending, total revenue, the financial balance, and public debt.

3. ***Operational performance/Efficient service delivery*** (or technical and distributive efficiency in economics terms) is about producing a given set of public sector outputs or outcomes for the least possible cost.

46. **2. There are important links between corruption and the three levels of budgetary outcomes.** Weak aggregate fiscal discipline (as a budgetary outcome in itself, as a performance measure, and as an institutional behavioural trait), can be a product of corruption at the two lower levels. Level 2 on the strategic allocation of resources is primarily concerned with effectiveness and (in the economist's version of) allocative efficiency. This also links back to level 2 on aggregate fiscal discipline, as level 2 is where policy and investment decisions occur. Level 3 is then where the economist's definition of technical efficiency becomes most prominent. In this context the fundamental point is that this ***technical efficiency is driven by how corruption free level 2 decision making is and how disciplined level 1 is from an institutional behaviour perspective***.

Auditors Version of Efficiency

47. **The audit profession focuses on Value for Money (VFM)** where VFM is defined as the contribution of economy, efficiency, and effectiveness. VFM audits in the UK, for example, focus on the assessment of the three Es: Economy, Efficiency and Effectiveness (NAO, 2011).

- **Economy**: minimizing the cost of resources used or required (inputs) – ***spending less*** (similar concept to the economists operational or technical efficiency);
- **Efficiency**: the relationship between the output from goods or services and the input resources to produce them – ***spending well*** (similar concept to productive efficiency); and
- **Effectiveness**: the relationship between the intended and actual results of public spending (outcomes) – ***spending wisely*** (similar concept to distributional efficiency).

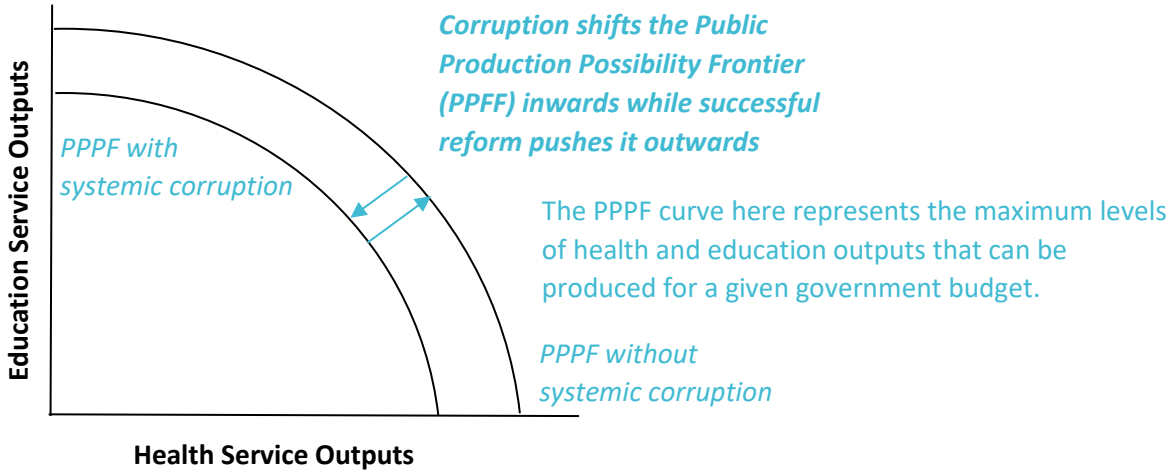
Impact of Corruption on Efficiency

48. **Corruption can have an impact on any of the different versions of efficiency including a reduction in the level and quality of public services**. In the economist's simplified world, corruption reduces productivity in the public sector (Salinas-Jimenez & Salinas Jimenez, 2007) and reduces the amount and quality of goods and services produced by the public and private sectors. In economics this idea is represented by having the "Public Production Possibility Frontier (PPPF)" shift downwards and to the left (see Figure 1 below). The curve in the figure illustrates a simplified example of the possible quantities of two services that can be produced by a government based on a given level of public resources for their delivery. The frontier shows how much health services need to be given up to increase education services (moving up and to the left on the PPPF), given the total budget available. Corruption in a system causes misallocations, misdistributions, increases costs and risk premiums, brings volatility over time, and creates government failures including government's role to tackle market failures (i.e., externalities and public goods). All these corruption costs shift the corruption free PPPF curve down and to the left.

49. **Similarly, in the public finance world**, corruption can cause: i) service delivery to be more costly and less effective; ii) a misallocation of resources by moving decision making away from strategic policy setting to auction-based allocation of resources; and iii) failures of fiscal discipline, where there is divergence of announced targets and real targets.

50. **In the auditor's world**, corruption: i) reduces economy by increasing costs for any planned output (actual cost to budget indicators); ii) supplies the wrong mix of inputs producing the wrong outputs (costs benchmarked against others); and iii) does not produce the right outputs and so does not deliver the planned outcomes (as revealed by outcome performance indictors).

Figure 1. Corruption and the Simplified Public Produciton Possibility Frontier



51. **There are many ways to measure efficiency in economics.** The most common ways are through some form of economic appraisal such as Cost-Benefit Analysis (CBA), cost-consequence analysis, cost-effectiveness analysis and data envelope analysis. These approaches generally focus on the costs, impacts and/or productivity measures.

Efficiency in the Model

52. **The definition of efficiency most applicable for this model is the public finance view.** While the other definitions still apply, the public finance version has direct implications for how to go about reducing the losses from inefficiency. The relationship between the three levels of budgetary outcomes underlying the public finance view is closely connected to one of the major sources for understanding levels of risks of inefficiency within government systems, which is the PEFA approach. The corruption centric risk metrics used in the model also help to take account of the impact of corruption on public sector efficiency. Hence, it is also important to have a clear understanding of what we mean by corruption.

Corruption

53. **It has been said that "corruption is a persistent feature of human societies over time and space"** (Aidt, 2003, p. F632) with accounts of corruption going back to the fourth century B.C. when Kautilya described forty ways of embezzlement by public servants in much detail (Bardhan, 1997). ***But what is corruption****?*

"Corruption is a persistent feature of human societies over time and space"

54. **The idea of corruption has its roots in philosophy.** Plato (the Republic), Aristotle (The Politics), Machiavelli (The Prince and the Discourses) and Montesquieu (The Spirit of the Laws) were concerned more about the corruption of the citizenry, rather than the corruption of institutions or government leadership. The early philosophers had rulers governing in their own self-interest rather than the public good in accordance with established and respected laws. The debasement or corrosion of virtues was at the heart of the early definition of corruption, and virtues for rulers could be different to the those for the citizenry. The focus then was much more on the forms and ways governing (Miller,

2018). Hobbs also made it clear that the greater horrors and suffering lay in not the corruption of government institutions but in their absence (Hobbs, 1651, pp. Ch18 80-85).

55. **Adam Smith pivoted away from private to public corruption** by arguing that "Great nations are never impoverished by private, though they sometimes are by public prodigality and misconduct." (Smith, 1776). In 1995, the idea of institutional corruption in the public sector took Adam Smith's point much further and (Miller, 2017; Thompson, 1995).

56. **A modern definition of corruption set by the World Bank in 1997 is: "the abuse of public office for private gain"** (World Bank, 1997, p. 8). This definition is founded on the principal agent problem (Rose-Ackerman & Palifka, 1999, p. 9) first raised by institutional economists in the 1970's (Jensen & Meckling, 1976). The idea being that the agents who have been given delegated authority from a principal can act in a way that is not in the interest of the principal. The problem persists because there is asymmetric information between the principal and the agent, or in other words, the principal doesn't know what's going on. In applying the principal-agent idea to a monarchy government, the agent is the group of public servants working for the king as the principal, while in a democracy, the whole government (executive, judiciary, and legislature) is an agent for the people as the principal.

57. **While there have been criticisms of this definition[22], The World Bank identified five (5) types of corruption that make things clearer**: i) bribery; ii) theft; iii) political and bureaucratic corruption; iv) isolated and systemic corruption; and v) corruption in the private sector. Transparency International has a similar definition: "the abuse of entrusted power for private gain". In 2001 Jain presented a more granular definition with corruption referring "to acts in which the power of public office is used for personal gain in a manner that contravenes the rules of the game" (Jain, 2001). Ang elaborated further making an important new distinction between different categories of corruption involving different types of participants (elites and non-elites) dealing in corruption that involves some sort of exchange, classified as speed or access money, or standard theft, classified as petty and grand theft (Ang, 2020)[23].

58. **In 2003 Aidt made the point that there are key conditions that allow corruption to become a problem** for society: i) ***discretionary power***– a public official has authority to act on policy and legislation based on his/her judgement rather than verifiable rules; ii) ***extractable economic rents*** - use of discretion allows rents to be extracted; and iii) ***weak institutions*** – incentives are established in political, administrative and legal institutions that allow officials to exploit discretionary power, including systems that reduce transparency, accountability and evidence-based decision making, thereby creating institutional cultures of corruption in the extreme (Aidt, 2003, p. F633).

59. **Aidt also presented four key categories of analytical approaches to corruption:** i) ***efficient corruption***, where corruption facilitates trade and corrects other pre-existing government failures; ii) ***corruption with benevolent principals***, where benevolent leaders delegate power to non- benevolent people (or benevolent leaders use corruption as a political tool intended for public benefit with no private gain[24]); iii) ***corruption with non-benevolent principals***, where non- benevolent officials purposively misuse public office to extract rents from the public and private sectors; and iv) ***self-***

[22] For example, Sparling argued that the definition "*raises more questions that it answer, leaving to its users the duty of determining , among other things, what constitutes abuse, and what is the right relationship between public and private (and political)"* (Sparling, 2016, pp. 157-184)

[23] See also the section: "Scope for Different Types of Corruption in Government Systems" at page 21.

[24] Other than staying in power.

reinforcing corruption, where weak political, administrative and legal institutions establish a history and culture of corruption.

60. **Prior to Aidt, Kiltgaard adopted a modelled approach to corruption** having corruption being a function of: i) discretionary powers; ii) monopoly powers; (akin to Aidt's extractable rents); and iii) accountability (akin to Aidt's weak institutions) (Klitgaard, 1988). The dynamics of corruption in the public sector was presented using this equation presented in the Box: 2 below:

Box: 2. The Kiltgaard Equation

C (corruption) = M (monopoly) + D (discretion) - A (accountability).

61. **Under this model the opportunity for corruption is a function** of the size of the rents controlled by an official, the discretion that the official has over those rents, and the level of accountability that the official faces for decisions made (Klitgaard, 1988). Both Aidt and Kiltgaard establish a theoretical approach on how to deal with corruption, by focusing on the drivers established in their models, such as reducing discretion, making extraction of rents harder (enforcement and regulation), increasing transparency and accountability and strengthening institutional culture.

62. **The problem with Kiltgaard Equation is that while the formula is elegant and it had a big influence on mainstream thinking about anti-corruption, the benefits to policy makers is limited**. Estimating the costs from corruption with such an equation is very difficult, proven by the lack of costing models using it. Moreover, reform debate arising from the use of it constrains the focus to reducing discretion and increasing accountability and competition in a general non-specific sense since the details were missing from the formula. Consequently, it does little to help genuine reformers tackle the "underbelly of public finance systems". As Hayward pointed out that the application of the Kiltgaard formula did not lead to any reduction in corruption or more effective incentives for policy makers to do something about the problem (Heywood, 2016).

63. **There are alternatives to the principal agent theory for corruption** (Mungiu-Pippidi, 2011). The common pool problem is one alternative theory. A "common pool problem" (Sweeney, et al., 1974) emerges when costs are borne by many, thereby diluting them, but the benefits are enjoyed by a few, and where there is uncertainty over property rights. Under this explanation, corruption emerges because of a government's "common pool" of tax resources[25]. The large pool incentivises officials to steal from the pool, safe in the knowledge that the costs borne by individual taxpayers are relatively negligible compared to the benefits enjoyed by the corrupt officials.

64. **Solutions driven from the common pool theory are similar to the principal agency theory underpinning the Kiltgaard equation**. These include raising the costs of corruption (increase sanctions), increase the likelihood of detection (higher risk of getting caught), and increase transparency to reduce asymmetric information problems. But these solutions are not intrinsic to the theory.

[25] Can also include resource rents (e.g. royalties). Aid is also another common pool in aid dependent and large donor countries and has been linked aid-induced resource curse (Laing, 2017).

65. **Game theory has also been used to explain corruption and give it some meaning to how systemic corruption emerges.** Through the prisoners' dilemma (a Nash equilibrium), corruption has been shown to be the dominant strategy for rational and reasonable people to adopt and can be a more dominant outcome when both the judge and the jailer are corrupt (Macrae, 1982). Game theory reveals that corruption is not a problem of moral failure but a perfectly predictable outcome from the rules of the game and "rational opportunism" (Rose, 2011).

"Game theory reveals that corruption is not a problem of moral failure but a perfectly predictable outcome from the rules of the game"

66. **Solutions for the game theory explanation are the same also**: change the incentives and pay offs by increasing the costs of corruption, increasing the likelihood getting caught and being prosecuted successfully, and reduce asymmetric information to get a different outcome. But again, the theory does not provide much more direction as the detail is missing also from this theory.

67. **On the question of whether corruption is efficiency enhancing or not**, the consensus appears to be that while there are plenty of examples where corruption can be efficiency enhancing in the short run, over the longer run those gains a highly likely to be lost by the costs incurred (World Bank, 1997, p. 1).

68. **In contrast, the field of political science presents an important view of corruption as a manifestation of political power**, which is contested and exercised over time. In this area, corruption is determined by things like the legitimacy of the state, power dynamics and the strength of civil society and the citizenry. Political science also takes a historical view of how systems and laws have developed over time to counter various forms of corruption (e.g., merit-based systems, competitive procurement and transparency rules) (World Bank, 1997, p. 16). Under this view, there are limits on how much efficiency can be achieved and corruption can be avoided, within the constraints of the political process.

69. **This manifestation of power provides an extension to the principal agent theory for the cause of corruption** - but rather than asymmetric information being the reason corruption persists – as everyone knows what's going on in many country contexts – it is ***power asymmetry that is the driver of persistence not information asymmetry***. Under this scenario the principals (e.g. the weak but benevolent king, genuine reformers or citizens) do not have enough power to do anything about it, which appears intuitive. ***Solutions under this scenario point to the common-sense idea of empowering the principals including weak but benevolent kings, genuine reformers and the citizens.***

70. **Public management views the problem of corruption as a major driver of modern bureaucracies** and the foundation of the public management field. It is argued that the response to systemic corruption of the 19th century created modern bureaucracies that were better able to deal with corruption. New systems were introduced to protect organisations from corruption and promote transparency and accountability (e.g., merit-based civil service, auditors, ombudsman, inspector general's etc).

71. **It was essentially a form of "natural selection on military capacity" or competition that led to governments that were better able to run more efficient and effective bureaucracies** that could ultimately help win wars (Gorski & Sharma, 2017). Tilly, for example, argued that: *"War and preparation for war involved rulers in extracting the means of war from others who held the essential*

resources … who were reluctant to surrender them without strong pressure or compensation" (Tilly, 1990, pp. 13-14).

72. **Later, New Public Management, went deeper in other areas** such as the idea of risk management within a framework of strong financial management and ethics (World Bank, 1997, p. 17). The focus on ethics appears to not have worked well either to get a shift in corruption problems.

73. **We cannot expect ministers and senior officials to change the way government is run simply because a corruption or a transparency indicator says there's a problem** in one country compared to another, or because ethics legislation says that corruption is bad. For leadership to act, and act genuinely in both their self-interest and the public good, there needs to be a much clearer link between what the evidence is saying about government systems, what the costs from those weaknesses are and what can be done to improve things. The model presented here presents that clearer link. Forensic red-flag algorithms can be very useful to help with the prosecutions of individuals, but they do little to help fix systemic problems, at least over the medium term, other than the standard method by increasing the probability of getting caught. As such, the red-flag forensic models are unlikely to be embraced by cabinets and senior officials busy running a government.

Anti-Corruption Systems and United Nations Convention Against Corruption.

74. **The United Nations Convention Against Corruption (UNCAC) is the only legally binding universal anti-corruption instrument**. It was adopted by the UN General Assembly on 31 October 2003 and became effective on 14 December 2005. Only two countries[26] have not signed or ratified the convention (UNODC, 2021).

75. **UNCAC has a useful framework for assessing the quality and effectiveness of anti-corruption systems** built around its 5 key themes:

- **Preventative measures** dealing with policies and practices; anti-corruption bodies, public sector and codes of conduct for public officials; public procurement and PFM; public reporting; judiciary and public prosecution; private sector participation by society; and money laundering;
- **Criminalization and enforcement** dealing with: *bribery* of national public officials, foreign public officials and officials of public international organizations; *embezzlement*, *misappropriation* or other diversion of property by a public official; *trading in influence*; abuse of functions; illicit enrichment (unexplained increases in assets of an official); bribery in the private sector; embezzlement of property in the private sector; laundering of proceeds of crime; concealment and *obstruction* of justice; liability of legal persons; participation in and attempt at corruption; knowledge, intent and purpose as elements of an offence; statute of limitations; prosecution, adjudication and sanctions; freezing, seizure and confiscation; protection of witnesses, experts, victims and reporting persons; consequences of acts of corruption; compensation for damage; specialized authorities; cooperation with law enforcement authorities; cooperation between national authorities; cooperation between national authorities and the private sector; bank secrecy; criminal record; and jurisdiction;
- **International Cooperation** including on extradition, transfer of sentenced persons, mutual legal assistance, transfer of criminal proceedings, law enforcement cooperation, joint investigations, and special investigative techniques;

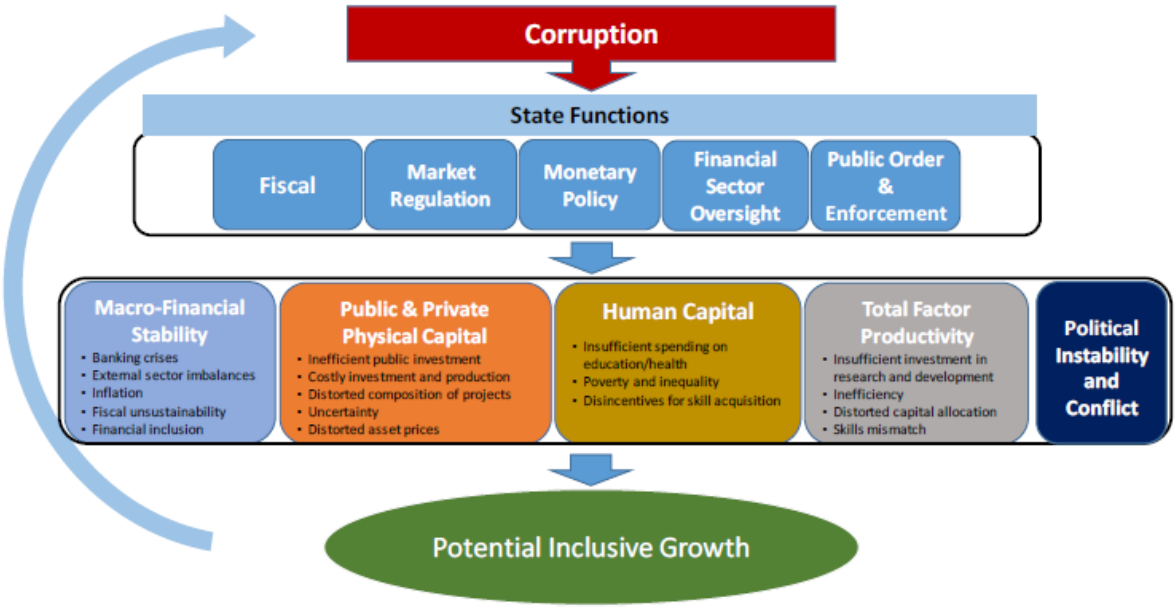
[26] Eritrea and North Korea (UNODC, 2021)

- **Asset Recovery** including on prevention and detection of transfers of proceeds of crime; measures for direct recovery of property; mechanisms for recovery of property through international cooperation in confiscation; international cooperation for purposes of confiscation; special cooperation; return and disposal of assets; and financial intelligence; and
- **Technical assistance and information exchange** including on training and technical assistance; collection, exchange and analysis of information on corruption; and implementation of the Convention.

76. **A county's public finance system and anti-corruption system are self-reinforcing, and both promote efficiency**. An effective public finance system helps detect and deter corruption, while an effective anti-corruption system helps make the public finance system work better and allows it to work closer to its full potential. Moreover, an effective anti-corruption system is arguably a binding constraint to how quickly a public finance system can improve and how effective it is in reducing development, fiduciary and corruption risks and increasing public sector efficiency.

Impacts of Corruption.

Figure 2. IMF View on the Corruption-Growth Connection



Source: 2016 IMF Staff Discussion Note: Corruption: Costs and Mitigating Strategies p6.

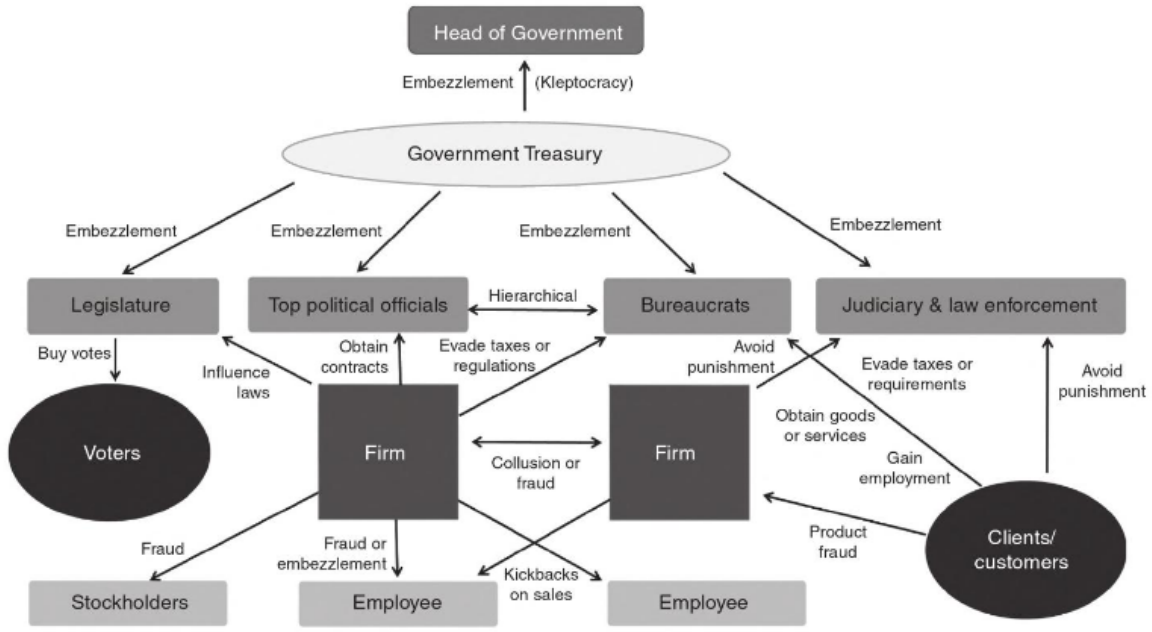
77. **The broader effects of corruption have been extensively studied.** Corruption has been shown to impact many different areas. Figure 2 above provides the IMF view of the impact of corruption on growth. The negative impacts that have studied include macroeconomic stability, inequality, prices, innovation, economic growth, service delivery, and foreign investment. In 1997 the World Bank found that macroeconomic stability is undermined by corruption (World Bank, 1997, p. 18). The IMF showed that corruption increases the cost of doing business making it more difficult for small businesses to operate and increasing barriers to enter public procurement markets (UNWOD, 2021). Gupta et al showed that corruption increased inequality (Gupta, et al., 1998). Corruption has also been shown to increase prices and reduce quantities and qualities, including by establishing corrupt contracting cartels and monopolies (Mirzayev, 2021). Foreign investment is generally lower in the presence of

corruption (Habib & Zurawicki, 2002), but corruption can also be a stimulus in certain circumstances (Egger & Winner, 2005). Innovation is stifled by corruption in the management of Intellectual Property (IP) and impacts on trust and research and development (Wagle, 2009) and (Anokhin & Schulze, 2009), though stolen IP in one country can easily be efficiency enhancing if it is brought into a different country for exploitation. Economic growth is impacted by corruption in various ways including through reduced capital accumulation (Mauro, 1995) and political instability (Mo, 2001) and (Fredriksson & Svensson, 2003). Service delivery is impacted negatively by increasing the costs and reducing the quality of health and education (IMF, 2016). The environment is also negatively impacted through corruption in the environmental policy setting and enforcement (World Bank, 1997, pp. 18-19).

Corrupt Government Networks

78. **Traditionally, the network of corrupt government networks has focused on relationships between the public and private sectors.** The public sector included heads of government, the treasury, representatives in the legislature, political officials and bureaucrats and the judiciary and law enforcement. While the private sector included firms, customers, citizens and voters. Rose-Akerman's diagram provided at Figure 3 below shows the traditional view of corrupt networks and highlights the levels of corrupt interactions between these different actors. This figure essentially has treasury at the centre of the corrupt government network, with the heads of government at the top.

Figure 3. Rose-Ackerman and Palifka's Corrupt Ineractions



Source: (Rose-Ackerman & Palifka, 1999, p. 13)

79. **The problem with the traditional view of corrupt government networks is that it misses the systems in which corruption operates, thereby making it difficult to reverse the problems** of inefficient corruption. The systems that are supposed help allocate resources efficiently, make sure funds are raised and distributed and spent in accordance with purported intent and control rules, etc are missed completely. This omission effectively allows the public finance system to be mistargeted, allowing it to be persistently misused, and in some situations, almost entirely for corrupt purposes. And in a development setting, the lack of a government systems approach to dealing with the

corruption problem, allows an unintended and informal "aid for fake reform" deal between donors and corrupt aid recipients (Laing, 2020).

80. **Another problem with the traditional corrupt network representation is that it ignores the differences between formal and shadow networks, and importantly, ignores the different corrupt networks in a country** that work together and/or fight each other in some form of corruption competition. A public finance systems approach can capture these competitive corruption forces more systematically allowing a more strategic approach to anti-corruption and reform - politically and technically. The formal networks can be seen in formal organigrams of government agencies, as well as process maps of various public finance systems. The corrupt shadow networks that operate behind the formal networks are often the mechanism that allows sophisticated and systemic corruption schemes to operate effectively for years or even decades without disruption, even if there is common knowledge of how things are operating, and even when a few players are removed through successful prosecution (as there's a usually a long line of people willing to take the vacant place in any shadow network).

81. **Corruption networks in a country can easily be in competition with each other, or even a war.** These networks can be based around political parties and factions, ethnic groups, ideological coalitions and the like. Especially in a systemically corrupt environment, these groups can end up in a corruption war fighting for resources for their groups private agenda – which serves themselves as well.

82. **This is one of the issues with the common definition of corruption being "the abuse of entrusted power for private gain" as it misses the situation where corruption is not being used for private gain** of the corrupter or corruptee but is being used for the benefit of the corruption network, whether it be for an ideological or criminal purpose or both. There are plenty of examples of this. A simple example is the informal corrupt garnishee schemes (i.e. "pay to retain" employment demands), where a share of an employee's salary is withheld for network purposes.

83. **This helps grand corruptors make the case that corruption is not corruption at all, but a contribution to the greater good of the group**. We received many reports from low-ranking officials on receiving "pep talks" from certain country leaders explaining that "corruption is good" and "this is for the good of the country and your family". Or in other situations, it's often said "that's not how it's done here". This private gain focus helps clear the way for public finance sub-systems to be compromised by the different corruption networks all claiming some form of the "greater good" argument.

Measuring corruption

84. **The United Nations Office on Drugs and Crime (UNODC) distinguish between two different methods to measure corruption**: Direct and indirect. Direct methods measure actual incidents of corruption (e.g., cases, prosecutions and experience-based surveys). Indirect methods focus on perceptions of corruption (UNODC, 2019, pp. 23-24).

85. **The public finance approach to measuring corruption and other inefficiencies in this paper is an indirect method.** It uses quality of systems (e.g., PEFA and OBI) and other indirect measures of corruption (e.g., CPI and WB control of corruption indices) to quantify fiduciary, development and corruption risks. This is different to perception-based approach being more a strength of system approach. It's an approach that in essence assesses how bad the holes in the system are that prevent

the efficient detection, deterrence, and prosecution of corruption and given how much money is flowing through those systems, how much can potentially fall through those holes.

Scope for Different Types of Corruption in Government Systems

86. **This paper also identifies the scope for six different types of corruption based on YY Ang's "Unbundled Corruption Index" (UCI)** (Ang, 2020). The UCI measures the perceived prevalence of Ang's four types of corruption: access money, speed money, grand theft, and petty theft. These categories are defined along two axes: whether they involve some form of exchange and whether they involve elite actors. An additional type of corruption – "covering tracks" – is added as it relates to public finance and public accountability. It is also split between elites and non-elites. While it too can be considered a form of exchange it is separately identified to underscore areas where cover ups operate in public finance systems. The six types of categories are presented at Table 1 below.

Table 1. Ang's Unbundled Corruption Index Categories (Plus Two)

	With exchange	With theft	*Covering tracks*
Non-elites	**Speed money** Citizens pay police bribes to avoid penalties; tips to receive basic medical services; private payments to expedite medical services; small bribes to speed up licensing process; excessive regulations to extract bribes	**Petty theft** Street-level bureaucrats privately pocket illegal fees; extort street vendors for protection money; agencies coerce companies to pay for their services; take group vacations on public funds	**Petty coverups** Street-level bureaucrats pay-off low level auditors, investigators to ignore wrongdoing and destroy evidence.
Elites	**Access money** Businesses directly pay massive bribes for deals; pay for politician's family expenses for deals; allocate corporate positions to family members of politicians; politicians build clientelist network for indirect bribe-taking; lobbying for favourable regulations; revolving door; loosen oversight and bailouts with impunity	**Grand theft** Top officials' illegal siphons of public funds into private account; create ghost payroll for family members; illegally keeps state-subsidized properties for oneself; executives in state-owned companies collude to embezzle funds	**Grand coverups** Top officials and politicians influence high ranking auditors, investigators, prosecutors, donors and parliamentarians to ignore grand corruption and destroy evidence including on accounting systems and other data warehouses.

Source: With exchange, access money, petty and grand theft: Drawn from (Ang, 2020).

87. **Ang's framework was used to help assess the scope for the different types of corruption in different parts of government systems**. The assessment is provided at Attachment C: Scope for Corruption at All Points of the Follow-the-Money Cycle on page 70. The attachment goes into more detail on how corruption works in the different parts of the "follow the money corruption cycle" (discussed in the next section). It provides an initial assessment on the degree to which Ang's different types of corruption could be a problem in different sub-systems. This is considered important background information as the costing methodology used in this paper estimates the costs of corruption and inefficiency in the public finance sub-systems, and so it is useful to have some discussion on how corruption can operate in them.

88. **Another reason for reviewing the different types of corruption is that Ang argues that "access money" may well be efficient over the medium to long term, being pro-growth and even pro-poor**, albeit at the expense of equity and institutional culture. The theory is used to explain how China can be both systemically corrupt, economically successful with one of the best records of pulling people out of poverty quickly (World Bank, 2022). Ang argues that China under Deng Xiaoping's reforms of

the 80's set up China as an "autocracy with partial liberalisation and effective governance … (but it) had an expiration date" (Ang, 2023).

89. **Access money can be efficient, especially if it is the dominant form of corruption.** The idea is that if most of corruption is in the form of access money, which pays out on well thought through and supervised projects and under a strong (even if corrupt) oversight group, then this will ensure that budgets deliver on policy objectives and achieve positive socio-economic outcomes. On the other hand, access money used on projects that are badly thought through and poorly supervised, or simply undertaken for the purposes of theft, will not deliver socially or economically desirable outcomes (i.e. it is grant theft rather than access money form of corruption). The fairness of access money and the longer-term impacts on institutional and moral culture is uncertain and is an important question that requires more research. A key question in country contexts, however, is to what extent corruption is grand theft or access money as it can be difficult to tell the difference.

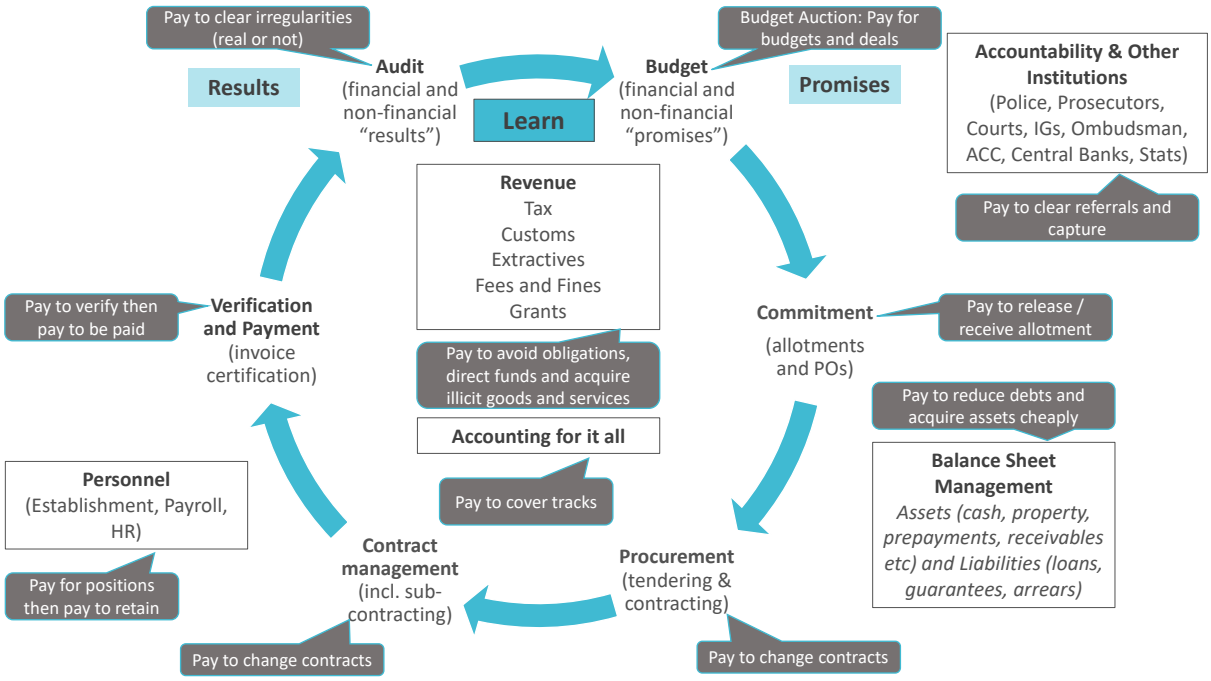
3. A Risk-based Approach to Estimating Efficiency and Corruption Losses from Weak Systems

91. **This section presents the conceptual framework and methodologies used in the data model** (AFI, 2022). The conceptual framework for assessing risk, risks of corruption and efficiency losses at different parts of public finance systems is presented first. That is then followed by the methodology used to estimate the cost of corruption and efficiency losses.

The Conceptual Framework

92. **To estimate the costs of corruption and efficiency losses within a public finance system it is helpful to be clear about how corruption works in different parts of the system.** In 2020, we presented a paper on the "Follow-the-Money Corruption Cycle: Revealing National Accountability Failures" (Laing, 2020). Discussion in the paper around the "follow the money corruption cycle" is very frank about how corruption can work in any public finance system. By being clear on where and how corruption works in the public finance system we believe that corruption can be better targeted where it matters most to strengthen public accountability and improve government efficiency and effectiveness. Figure 4 below provides an overview of the "follow the money corruption cycle".

Figure 4. Follow-the-Money Corruption Cycle and the Budget Cycle



Drawn from: ISE Development Practice Note 2020 "Follow-the-Money Corruption Cycle: Revealing National Accountability Failures"

93. **The "follow-money corruption cycle" shows how all parts of the budget cycle work and where the risks are for corrupt activities**. The scale of the problem becomes clearer as each corruption risk point is highlighted throughout the cycle. To keep things simple the following describes the basic corrupt objective at each one of the eleven (11) points of the "follow-money corruption cycle":

1. ***Starting at the first corruption point*** **of the follow-the-money cycle – the budget – we can say that** *people pay to get their budgets or their preferred policy,* including under an auction like arrangement, rather than having the budget allocate resources based on policy and evidence (Laing, 2017).

2. **At the commitment phase** corruption works by *people paying to get access to their allotment* or approval to spend the budget, rather than using the commitment system to manage cash and ensure appropriations (legal authorities) are not breached.
3. **At the procurement stage** *people pay to win contracts,* rather than using it to support competition to keep costs down and quality up.
4. **At the contract management stage** *people pay to change contracts* in a favourable way for themselves, rather than ensure contract terms are complied with.
5. **At the verification and payment stage** *people pay to falsely verify that goods and services were delivered on time and to specification, and then pay again to get paid*, rather than ensuring payments are made in accordance with contracts.
6. ***At the audit stage*** *people pay for audit irregularities to be cleared*, whether those irregularities are real or otherwise (i.e., made-up to get more bribes or to punish), rather than audit providing assurances that financial information is accurate and believable and auditing is a reliable mechanism to support institutional learning.
7. ***At the personnel and payroll stage*** *people pay for positions and pay to retain positions* through family connections or outright bribes or cashing in old debts and favours, rather than promoting merit-based recruitment and retention.
8. **At the accounting stage** *people pay to facilitate licit and illicit movement* through the accounting systems and to cover tracks, rather than ensuring accounting, classification and reporting rules are followed.
9. ***At the revenue collection stage*** *people pay to facilitate favourable treatments of what they owe or what they are paying for* (including for illegitimate/illegal goods or services) or speed up intentional or unintentional slow administrative processing, including in service delivery areas, rather than ensuring revenue is assessed and collected in accordance with the rules.
10. **During balance sheet management phases** *people pay to secure favourable treatments* of assets and liabilities, rather than ensuring assets and debts are managed well.
11. If then, at any point in the cycle evidence of malfeasance emerges and results in ***referrals to any or all the accountability institutions*** (like the police, anticorruption commission, prosecutors, inspector generals, and auditors), *people just pay again to clear the allegation, investigation, prosecution, finding or sentence*, rather than ensuring checks and balances are working as intended and the rule of law is respected.

94. **In a country with systemic corruption throughout the "follow the money corruption cycle", it can clearly be seen that *there is little public money left to finance good quality fiscal policy*** aimed at improving the efficiency and effectiveness of core public services like health, education, public works and defence.

95. **This paper takes the "follow the money corruption cycle" structure of public finance sub-systems** to provide greater clarity of where and how corruption works in government systems and ultimately to estimate the costs of corruption and efficiency losses at the sub-system level.

The Methodology

96. **The model uses a risk-based approach to quantify the costs of corruption and efficiency losses because of weak public finance systems**. The methodology adopted is the same we have used in various Fiduciary Risk Assessments (FRAs) but is adapted to enable assessment of risks and losses at all points in the "follow-the-money corruption cycle".

97. **UK FRA guidance requires that the possible financial impact of weaknesses in public finance systems be considered with a view to quantifying the impact** on and risks to all funds managed by partner country systems (DFID, 2011). Specifically, "how weaknesses identified in PFM systems could translate into leakage or inefficiency". Guidance recommended against predicting losses or inefficiencies from Public Financial Management (PFM) systems based on "subjective risk assessments". This paper, and previous FRAs, adopted an more objective based approach to quantify risks rather than a subjective one[27], meaning the same methodology could be applied to any country context. Quantifying financial impact under this basis became not only possible but desirable. Guidance also advised that additional studies to dive deeper into high risk, high value PFM systems.

98. **While it has been said that there is a "false dichotomy" between objective and subjective metrics a rapid objectivity assessment of metrics used in the data model was undertaken** (Kaufmann, et al., 2008, p. 3). A "subjective" status was used to classify metrics that were based on opinions and preferences collated in surveys, such as in Transparency International's CPI or the BTI. Objective status was used to classify metrics that had an objective framework, such as PEFA, where it is based on fact (e.g. does the budget look into the future or not, are international accounting standards applied or not). The assessment applied four categories overall: i) objective (factual – and verifiable); iii) subjective (opinions or preferences); iii) Index of indexes; and iv) a mix of opinions, preferences and facts.

99. **An assessment of the scope for bias was also undertaken** of underlying metrics in terms as a framework can be objective (e.g. are international accounting standards applied or not) but the interpretation has much room for discretion (e.g. financial statements say international accounting standards are applied, but alternative evidence indicates that most of the standards are not complied with). Ratings of none, minor, moderate or high were assigned based on opinion, though this can be explored in more detail in the future using analytical approaches to assessing bias. The assessment focused on how much discretion there was within a framework to change scores either directly or by changing weights (and use of sensitivity analysis) or how survey questions could be asked and what could happen if there was pressure applied to surveyors. The type of objective/subjective metrics was also categorised into three main types as those backed by: i) accounting-type standards (e.g. GFS); ii) statistical standards (e.g. OECD-DAC); and iii) standards set by a conceptual framework (e.g. PEFA, OBI, BTI etc). The results are provided at Attachment H: Objectivity Assessment of Underlying Metrics at page 137.

100. **Overall, the finding was that much of the core risk related metrics were backed by objective and fact-based systems such as PEFA** and OBI, though there was some potential for bias in ratings. The more subjective indicators like BTI, CPIA, RoLI and WGI were backed up by rigorous conceptual frameworks, though there was potential for rating bias also. CPIA results for example were often found to be quite "sticky", not changing much over time, while other more responsive diagnostics did change over the same period. Survey backed conceptual frameworks were considered more subjective and less objective than deep dive assessments like PEFA, though deep dive assessments are vulnerable to significant bias also (e.g. who pays for the assessment can easily introduce a conflict of interest).

[27] Subjective risk assessments here are considered to be those that are based on expert opinion or "gut feel" of the environment rather than on a rigorous quantitative analysis of the fiscal systems data, which is considered much more objective.

101. **The model is designed to be able to quickly assess the impact on risks and costs by adding or removing source data**. For example, corruption only metrics (e.g. CPIA, WGI – control of corruption, CPIA – D Transparency and corruption, and CPI) can be easily chosen to assess corruption risk driven losses. Or only PEFA assessments can be chosen (2011, 2011 Annex and 2016 frameworks) to establish a sub-system comparable source dataset, in order to do cross country comparisons of sub-system losses.

The Costing Equation

102. **The methodology builds on methodologies used elsewhere** including on estimating costs of corruption in procurement[28]. The quantitative approach used in the paper differs in important ways from the Klitgaard equation (see Box: 2 on page 15) as it allows reformers and policy makers to dive much deeper into the underbelly of public finance and anti-corruption sub-systems, thereby facilitating a much more robust debate on what reforms are needed to close loopholes, strengthen institutions and improve policy outcomes and value for money, while appreciating the political constraints of running a government at the same time.

103. **A simplified version of the formula used to quantify financial impact of weak PFM systems … or in other words … the costs of corruption and inefficiency** is as follows:

Box: 3. The Costing Equation

$$c = f \times i \times r$$

c = Cost of Systemic Inefficiencies and Corruption from Weak Public Finance Sub-Systems
f = Financial flows in sub-system (US$)
i = Impact factor for sub-system
r = Risk in sub-system

104. **The costing equation is described in more detail in the following seven sections.** The first describes the three key parameters, the second looks into the how risk is quantified, the third covers the impact factors, the fifth section explains the financial flows component, while the sixth provides a summary the dynamic weighting system, impact factors, and financial flows and summarises it in a table format. The final section provides a dozen caveats on the methodology.

The Three Key Parameters

105. **In applying this formula three parameters were established in the model**: i) ***Quantified development or fiduciary risks*** representing a good enough proxy for likelihood of risks materialising, including inefficiency and leakage (the current model uses development risk[29]); ii) ***Impact factor*** is based on assessed importance of the public finance sub-system to efficiency and leakages; and iii) ***financial flows through the financial sub-system***. The financial flows and pecuniary significance rates for every country were drawn from GFS data on components of fiscal flows and stocks. Likelihood (or risk) multiplied by impact factor multiplied by financial flows in the sub-system gives an approximate

[28] The formula for the costs of corruption in procurement was Pr = G x gs x proc where Pr = corruption in procurement, G = government expenditure, gs = % of government expenditure spent on procurement of goods and services, and poc = survey weighted mean of the value of government contract expected in bribes. See (Hameed & Magpile, 2014, p. 34)

[29] See Box: 7 in Attachment D: Methodology for Quantifying Development and Fiduciary Risks on page 77 for definitions of different forms of risk including development risk.

financial estimate for inefficiencies and corruption in the sub-system. The formula is effectively a simple linear equation where r and i form the slope parameter with variables f and c.

Quantifying Development, Fiduciary and Corruption Risk

106. **An existing methodology to quantify development, fiduciary and corruption risks** was used for the risk parameter in the above formula (Laing, 2016). The risk quantification methodology uses a standard risk quantification approach of *performance score multiplied by risk factor*, where risk factors are associated with the system generally - not the country context (see Box: 4 below). Calculated development and fiduciary risks and impact parameters were set between 0 and 1.

Box: 4. Equation for Quantify Development, Fiduciary and Corruption Risk

Risk Score = Score for System Performance x Risk Factor (Fiduciary, Development, or Corruption)

107. **The methodology to quantify risk has now been automated using a range of publicly available databases on public finance system performance**. The are thirteen (13) sources used: Anti-Money Laundering (AML) Index, Bertelsmann Stiftung's Transformation Index (BTI), Corruption Perception Index (CPI), Country Policy and Institutional Assessment (CPIA), Open Budget Index (OBI), PEFA 2011, PEFA 2011 Annex, PEFA 2016, PEFA Gender, Rule of Law Index, Statistical Capacity Index (SCI), Statistical Performance Index (SPI), and Worldwide Governance Indicators (WGI). Additional sources such as the Corruption Risk Forecast (CRF) are being considered for inclusion. The complete list of the 318 indicators that are used in the full model is provided at Table 2 below, though some of these can are only used for country specific analysis, such as the OECD Methodology for Assessing Procurement Systems (MAPS) and Tax Administration Diagnostic Assessment Tool (TADAT).

108. **The distribution of quantified risks for all years is a normal distribution.** The distribution for development risk (DR) for all years are presented at Figure 5 below. The figure reveals a normal type of distribution and intuitively correct results with: i) high income countries having a distribution around a lower average development risk, compared to other groups; ii) regional disparities following country income group status; and iii) highly resource dependent countries having a distribution around a higher average risk.

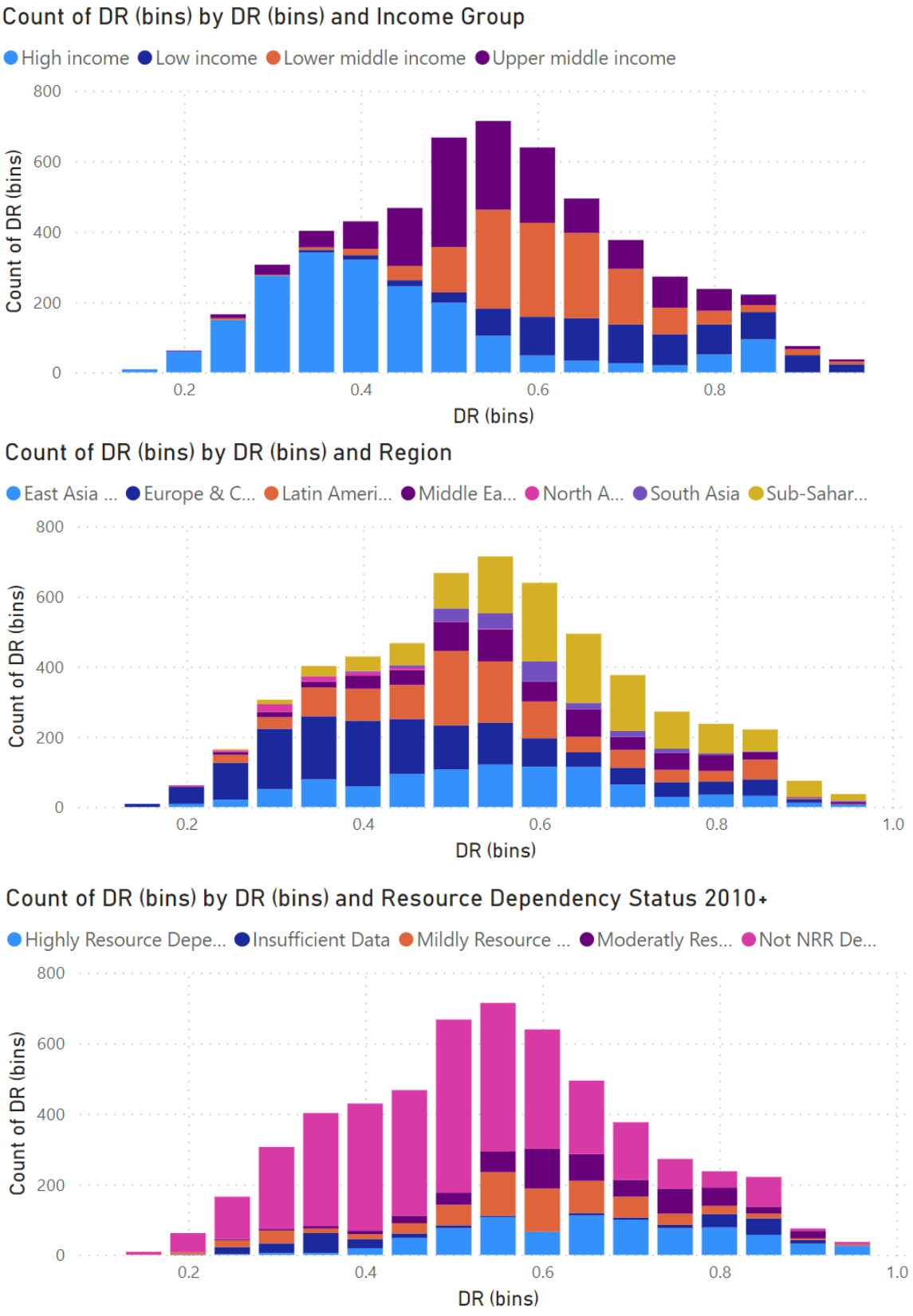
109. **The risk quantification methodology was adapted to derive risk at the sub-system level, and, for all eleven (11) points in the "follow-the-money corruption cycle".** Public finance system performance indicators were mapped to the different points. For example, PEFA performance indicators were mapped to different sub-systems like budget, treasury, accounting, and personnel and OBI performance data was mapped to the budget point. All points of the cycle had only 1 risk parameter, except for revenue and the accountability institutions, where revenue was split between grant and non-grant revenue, and accountability institutions, had five (5) risk parameters for: i) anti-corruption systems; ii) banking supervision systems; iii) statistics systems; iv) systems for granting to general government units; and v) communication systems[30]. For a more detailed description including the risk factors see Attachment D: Methodology for Quantifying Development and Fiduciary Risks on page 91.

[30] At the time of writing there was no publicly available data on quality of vertical and horizontal communications systems in the public finance field, which is used for country specific assessments. There is consideration to use certain parts of OBI and PEFA to feed into the communications systems point.

Table 2. Source Data for Risk Parameters Used in the Model

L1 Code	Count of L4 Code
⊟ PEFA2011	75
⊞ A PFM-OUT-TURNS: Credibility of the budget	6
⊞ B Comprehensiveness and Transparency	10
⊞ C (i) Policy based Budgeting	7
⊞ C (ii) Predictability and Control in Budget Execution	29
⊞ C (iii) Accounting, Recording and Reporting	9
⊞ C (iv) External Scrutiny and Audit	9
⊞ D D. Donor Practices	5
⊟ PEFA2016	97
⊞ 1. Budget reliability	6
⊞ 2. Transparency of public finances	12
⊞ 3. Management of assets and liabilities	13
⊞ 4. Policy-based fiscal strategy and budgeting	17
⊞ 5. Predictability and control in budget execution	28
⊞ 6. Accounting and reporting	10
⊞ 7. External scrutiny and audit	8
⊞ 8. Predictability of Transfers from Higher Level of Government	3
⊟ PEFA-Like	146
⊞ AC Anti-Corruption	10
⊞ AML Anti-Money Laundering	1
⊞ BS Banking Supervision	3
⊞ BTI BTI Political and Economic Transformation	5
⊞ CBE Controls in budget execution	8
⊞ Coms Communications	4
⊞ CPI Corruption Perceptions	1
⊞ CPIA IDA resource allocation index (Risk Adj)	16
⊞ FS Fiscal Space	1
⊞ GF Grant Funding Systems	5
⊞ OBI Open Budget Survey	1
⊞ OECD MAPS MAPSv 2009	4
⊞ PI-GRPFM Gender	12
⊞ RoL Rule of Law Index (Risk Adj)	45
⊞ SC Statistics	3
⊞ SPI Statistical Performance	5
⊞ TADAT Taxation	9
⊞ WCO WCO Checklist for SAFE	7
⊞ WGI Worldwide Governance Indicators	6
Total	318

Figure 5. Development Risk Distibution: Income Group, Region & Resource Dependnecy



Determining Impact Factors

110. **The impact factor sub-systems in the costs of corruption and inefficiency equation was determined in two steps.** First was the assessed generic significance/impact factor which was based on expert opinion (column 2 of Table 3 below) with an adjustment parameter (column 3 of Table 3 below) to help improve the accuracy of modelled outcomes. These were based on interviews of actual corruption and efficiency losses in high corruption environments[31]. Uncertainty associated with impact factors was assessed through sensitivity analysis, which can also be used to help improve accuracy through verification and triangulation methodologies[32].

Bringing in the Financial Flows

111. **The second step was to then multiply the share of funds flowing through the sub-system for a particular country**. For example, for the procurement systems the share of expenditure on goods and services (excluding salaries, grants, subsidies etc) and non-financial asset acquisitions compared to total consolidated expenditure was used. GFS data was used to calculate shares. This establishes an objective country specific impact factor for various sub-systems. From this, country level sub-system-based risk and impact indices can then be used and displayed in different ways including league tables and quadrants for risk-impact analysis. Applying the financial flows is the final step to calculate financial risks and losses or the costs of corruption and efficiency losses.

Summary of Impact Factors, Financial Flows and Dynamic Weighting

112. **When viewing leakages at the country level, an adjustment was made to calculate "systemic losses" to account for differences between sub-system views and aggregate views of losses.** At the sub-system level, the algorithm was considered appropriate at the lower level, though given the interdependency of all the sub-systems working together, simply adding the leakages and losses together would dramatically overstate the losses in aggregate. The thinking being that some losses in one system were still related to other parts of the system – essentially the upstream and downstream effects.

113. **The example in a systemically corrupt country are the bribes paid in the legislature for a particular project is not where things end.** Bribes also need to be paid all through the follow-the money cycle including at the allotment, procurement, contract management, verification and payment and audit stages. Consequently, impact parameters were weighted dynamically based on whether data was available. This enabled the system to produce systemic impact parameters based on whatever data was available, while also allowing aggregated impact factors to still be between 0 and 1 allowing risk x impact calculation to still be between 0 and 1 (column 5 of Table 3 below) – and thereby ensuring that the sum of all losses do not multi-count losses and total losses do not exceed the amount of actual funds at risk flowing through the system.

114. **A summary of all the impact parameters used, including for sub-system impacts, the systemic version of impacts, the significance factors and the GFS-based number is provided** at Table 3 below.

[31] More research is warranted in this area to link empirical results of corruption and efficiency losses with model designs and parameters.

[32] Sensitivity analysis of impact factors is straight forward given the nature of the linear equation for costing model. As an example, halving all the impact factors results in halving the predicted costs.

Table 3. Dynamic Impact Factor Parameters and Financial Flows

Category	Sub-System Impact Parameter (Raw)	Sub-System Impact Parameter (Adj)	Significance Factor	Systemic* Impact Parameters - Weighted	Base number Source
1 Budget	1.000	0.600	Assessed Importance	0.083	Total Expenditure
2 Treasury	1.000	0.600	% of non-centralized payments - proxy same as procurement	0.083	Total Expenditure
3 Procurement	1.000	0.600	% goods and services and non-financial asset acquisition (consolidated) compared to total consolidated expenditure	0.083	Total Expenditure
4 Contracts	1.000	0.600	Proxy: same as procurement	0.083	Total Expenditure
5 Verification and Payment	1.000	0.600	Assessed Importance	0.083	Total Expenditure
6 Audit	1.000	0.600	Assessed Importance	0.074	Total Expenditure
7 Payroll	0.900	0.540	% payroll compared to total expenditure	0.083	Total Expenditure
8 Accounting, Recoding and Reporting	0.750	0.450	Assessed Importance	0.062	Total Expenditure
9 Revenue					
9.1 Revenue	1.000	0.600	% of Non-grant revenue compared to total revenue	0.083	Total Revenue
9.2 Grant Revenue	0.750	0.600	% of Grant revenue compared to total revenue	0.083	Total Revenue
10 Balance Sheet Management	0.500	0.300	Assessed Importance BS Adj	0.041	Total Assets and Liabilities
11 Accountability and Other Institutions					
11.1 Anti-Corruption	0.250	0.150	Assessed Importance	0.021	Total Expenditure
11.2 Banking	0.500	0.300	Assessed Importance	0.041	Total Expenditure
11.3 Stats	0.250	0.150	Assessed Importance	0.021	Total Expenditure
11.4 Granting	0.750	0.450	% SNG grants comparted to total expenditure	0.062	Total Expenditure
11.5 Coms	0.200	0.120	Assessed Importance	0.017	Total Expenditure
Total	**na**	**7.26**	**na**	**1**	**na**

** These are weighted based on percentage of the of the sub-system impact parameter compared to the total of all sub-system impact parameters in the table. Note that the systemic impact parameter is dynamic and not static. Where a country does not have sufficient data for the calculation of risk for certain sub-systems, the systemic impact weights change according to what sub-systems risks are quantifiable.*

Methodology Caveats

115. **There are a dozen methodological issues** that readers should be aware:

1. **Impact parameters and weighting methodology are key components of the model and currently rely on a partially subjective, though verifiable, assessment.** Impacts are effectively used to reduce the size of the losses, which are driven by risk and the amount of funds flowing through the sub-system. The impact parameters set the scope of how much flows through subsystems but also the importance to efficiency. For example, audit is very important for accountability and learning and audit failures can have serious impacts on the accuracy of end-of-year results and hence the reliability of evidence used. Moreover, corruption in audit or poor audit skills can have a big impact on overall efficiency and corruption. Conversely, statistics has a relatively lower impact but is still important for good evidence-based decision making. Some corruption is possible, but not to the same degree as in audit. Uncertainty with impact parameters is dealt with using standard systems such as sensitivity analysis, triangulation and verification methods.
2. **Grant revenue uses risk for revenue in aggregate.** A risk parameter for grant revenue is not available as the new 2016 PEFA framework did not retain the grant revenue related

performance indicators. Aggregate revenue risk parameters are still considered a reasonable proxy. The separation of grant and non-grant provides visibility on the relative size of efficiency losses and corruption costs linked to on-budget donor funds compared to domestic revenue sources.

3. **Annual averages v's Period averages:** There is a difference between annual averages and period averages. Annual analytics used require fiscal and risk data to be in the same year. Period averages can be used to get around these gaps to get average results over a period allowing more granular data to be used to work out annual average losses over a period. But care must be taken when there is partial data over more than one year.
4. **Sub-system losses v's Systemic losses:** Sub-system losses simply apply unweighted impact parameters to the risk parameters and the amount of funds applicable at the sub-system. Aggregating these to get total losses would grossly overstate losses as aggregates would be more than the annual fiscal activity. While this approach overstates efficiency losses in aggregate, it still makes theoretical sense at the sub-system level as it includes related upstream and downstream losses. The aggregated amount would, however, be double counting losses from these downstream and upstream effects. The Systemic losses approach uses a simple weighting methodology[33] to effectively remove upstream and downstream losses at the sub-system level.
5. **The average per year uses constant 2015 US$.** Rather than averaging current losses which are derived from GFS fiscal data, averages are of constant 2015 US$ to remove the effects of inflation on fiscal data. The methodology used is to convert domestic currency to US$ using foreign exchange rates from the WDI database. Constant figures are then created using US CPI figures in the WDI database, which the base year at time of writing was 2010. Conversion to 2015 was done to align with constant GDP figures used (also from WDI).
6. **Some countries' currencies change.** A full review of all the currency changes for a country has not been performed yet. Currency changes for countries can occur, which can adversely impact on conversions since there are sometimes misalignments of GFS domestic currency specification in the IMF database and the foreign exchange rates disclosed in the WDI database. An example is Congo DRC and Zaire and the Franc which changed in 1997.
7. **Risks in a particular year are affected by the amount of source data.** There are different sources that are used to quantify risk at the sub-system level[34]. PEFA is the most granular, being able to quantify risk in many different systems, while other sources are blunter, like OBI which primarily impacts on budget and audit sub-systems, or CPI which impacts on audit and the anti-corruption sub-systems. While it is shown in this paper that PEFA is correlated to the other sources used, it has been found in this model that a year that includes PEFA assessment data can bring down risk scores for a particular year (meaning PEFA-based risks are generally lower than other source data risks like OBI, CPIA etc). To assess losses based on different sources the user of the model can simply choose which sources to use in the model/view.
8. **Different levels of the public sector can be chosen**, meaning the user can choose to look at fiscal data from the general government level, central government, and extra-budgetary levels

[33] i.e. Impact parameter of sub-system divided by sum of all sub-system impact parameters

[34] Sources include Anti-Money Laundering (AML) Index, Bertelsmann Stiftung's Transformation Index (BTI), Corruption Perception Index (CPI), Open Budget Index (OBI), PEFA 2011, PEFA 2011 Annex, PEFA 2016, PEFA Gender, Rule of Law Index, Statistical Capacity Index (SCI) and Statistical Performance Index (SPI), and Worldwide Governance Indicators (WGI).

right down to the local government level (if the IMF GFS database has the data). The data does not include data on the public corporations' side of the public sector. So, estimates are affected not only by the completeness of the IMF-GFS database but also by the fact that corruption and efficiency losses in public corporations are not assessed at all (other than subsidies and funding for public corporations reported in central government operations). Corruption in public corporations can be significant. Risk factors are used for every level of government. This is because availability of sub-national risk parameters is very limited (e.g. sub-national PEFA assessments). In countries with sub-national PEFA assessments it is possible to see the impacts using different risk parameters, thought this would be a separate exercise.

9. **Service sector-level estimates of losses can be created using COFOG data.** Users of the model can choose to look at the losses from a sectoral perspective. A simple methodology is adopted based on calculation of the percentage of expenditures in a particular sector. This is done by using COFOG data on the IMF GFS website. To look at transport losses for example, the user chooses the transport sub-function and clicks the COFOG losses box and then chooses the relevant sectors/sub-functions. It should be noted that functional classification fiscal data is less complete than economic classification data in the IMF GFS databases, so when users choose to look at losses from this perspective, less data will be available for calculations, resulting in more data gaps (blanks) in the "follow-the-money corruption cycle" loss estimates. A reconciliation of the differences between COFOG and economic classification expenditures is at Attachment E: Reconciliation of Economic COFOG Classification Data on IMF GFS/COFOG Databases by Government Sector (on page 129)[35].
10. **Estimates of losses are based on risks.** The development risk concept implies that a high risk increases the likelihood or probability of a poor outcome (e.g., more efficiency losses and/or corruption). The estimates are just estimates and there is a degree of uncertainty associated with them. That said the estimated losses are likely to reflect an upper bound of the losses in most instances. In other words, a non-zero result does not necessarily mean that corruption is happening, or efficiency is being lost, just that there is a likelihood of a loss of a certain amount given the data. It is noted that one of the most important missing parameters is institutional culture. Strong cultures can limit the losses in notionally weak systems, while weak cultures in notionally strong systems can have the opposite effect. Institutional culture can be captured in the impact or risk factors but has not specifically been included here. For this model, institutional culture is at least notionally captured by the diagnostic indicators used for risk, as these can be considered a reasonable but imperfect proxy. For example, strong institutional cultures should see consistently improving outcomes and higher scores in the diagnostics. Second round costs of the impact of ongoing corruption and/or mismanagement further impacting on the weakness of institutional cultures are also important costs to consider, however these are not currently estimated under the current methodology.
11. **Cost estimates associated with balance sheet, tax revenue, non-tax revenue risks can be much more variable than in other public finance sub-systems**. For example, corruption on balance sheet items in the real world can have huge impacts. Writing off billion-dollar loans and selling billion-dollar assets for well below market value is an example where a risk-based estimate might be much lower than in an actual country setting in a particular time period.

[35] For more detailed review of the methodology to check consistency on GFS databases see AFI Technical Working Note (AFI, 2023) and data analytics (AFI, 2022)

Similarly, tax revenue losses can be much higher because of illegal non-tax revenue payments to officials for illegal services (e.g., to support certain tax break legislation and/or write-offs of tax arrears). The risk-based approach to estimating the costs of corruption notionally covers these types of corruption, but the degree of variability could be much higher. More work is required to establish additional parameters to get more accurate estimates in these areas.

12. **The costs of corruption and inefficiency formula is a linear equation.** There is a stable linear relationship between risk and losses – though made more complex by the sixteen public finance sub-systems. Other forms of the equation may deliver more accurate results, though this would require more confidential field testing. Exponential, logarithmic or sigmoid equations are possible candidates. Exponential has losses eventually becoming incrementally bigger as risks increase (e.g., all money is lost in an all-risk scenario). A linear equation would overstate losses in low-risk countries and understate losses in high-risk countries if the true distribution was exponential. Logarithmic has losses eventually becoming incrementally smaller as risks increase and there is a limit to losses under all risk scenarios. A linear equation would understate losses in in low-risk countries and overate losses in high-risk countries if the true distribution was logarithmic. A sigmoid equation has an S-shape form. A linear equation would overstate costs for lower risk countries and understate costs for higher risk countries. A sigmoid equation might be more accurate, but at this stage of development a linear equation was chosen for its simplicity, pending more field testing. An option that can be explored in future versions of the model is to have corruption focused risk data (e.g. CPI, CPIA.D5-Transparency, Accountability and Corruption, and WGI.6– Control of Corruption, and AML Index) feed into impact parameters. This would have the effect of reducing loss estimates for low-risk countries and increase loss estimates for high-risk countries. More research is also warranted, including on the use of different forms of the equation, the relationship between efficiency and corruption, the use of corruption focused impact parameters, and broader use of corruption risk data.

Model Results

116. **This section presents the results of the model at country and aggregate levels**. The results have not been adjusted for countries that have incomplete fiscal or risk data, (such as China, Vietnam and Somalia), as understanding data issues remains an important part of the assessment of the costs of corruption and efficiency losses. This section starts with risk results at the country level using the follow the money corruption cycle to help visualize the losses by public finance sub-system. It then goes on to the results of the model in terms of the costs of corruption and other inefficiencies, initially for the whole of Government, then at the sectoral level, with the security sector used as an example. It then moves away from the country level and provides league tables comparing losses across different countries, and then different groups of countries such as by region, income group, natural resource dependency and fragility. It then ends with a short discussion on correlations of the parameters and source data variables used in the model.

Country Level Risks by Follow-the Money Cycle

117. **The calculated development (efficiency/corruption) risks at each point of the "follow the money corruption cycle" are provided at the country level**. We use Afghanistan as an illustrative example with six (6) years of data (2013-18). Figure 6 below provides a summary of the development risk results for the country by public finance sub-systems as demonstrated by the "follow-the-money corruption cycle". Model users can choose any country of interest, or they can aggregate risk of by selecting multiple countries directly or choose an "income group" (e.g., low-income countries or land locked etc) ,"region" (e.g., South Asia) or a specialized grouping (e.g. SIDS, landlocked, and resource dependency). Data sources for risk calculations can also be selected and used to assess impact on risks, as well as performance indicators measures.

Figure 6. Follow-the-Money Cycle: Development Risks (E.g. Afghanistan 2013-18)

Loss Estimates by Follow-The-Money Cycle for Whole Government

118. **Country level estimates of financial losses at all parts of the "follow-the-money corruption cycle" are presented at Figure 7 below**. Estimates of costs of corruption and efficiency losses are in US dollars. Estimates exclude off-budget activity of donors as the source is IMF GFS data[36]. The same filters are available on the model compared to previous risk figure. An additional filter is included for the level of the public sector between general government sector down to local government. The level of government used in this example for financial flows that determine the level of losses is budgetary central government.

119. **On the left hand side of Figure 7 below are summaries of total losses from different viewpoints** including: i) average annual total losses - US$2.0b; ii) losses as a percentage of public expenditure (as an average per year) – 31%; iii) losses as a percentage of GDP (as an average per year) – 8.4%; and iv) losses on a per capita basis (as an average per year) - US$47. Some comparator bases are also provided: i) annual average total government expenditure (central budgetary government here) – US$5.2b; ii) annual average total government revenue – US$5.2b; and iii) annual average GDP US$19.4b; and iv) annual average population – 35m.

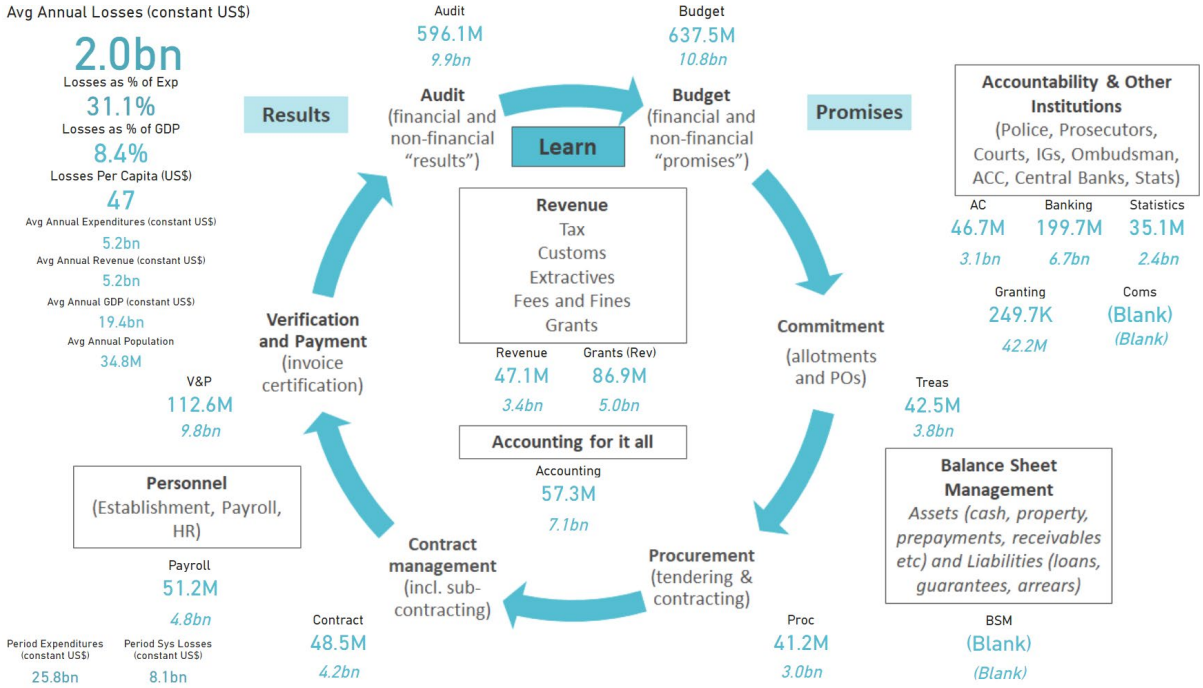
120. **At each risk point of the cycle there are two estimates provided for efficiency losses**. The top number is average annual systemic losses in constant 2015 US$ for that point using the formula for the costs of corruption and inefficiency (i.e., a =b × c × d). In the model, users can choose the period using the "years" drop down filter. In this example the years 2013-18 are selected for all risk and fiscal data. The italicised number below is the estimate of non-systemic losses[37] over the number of years chosen based on average risk and impacts for the period and total expenditures, revenues, or balance sheet stocks over the period in current US$, as applicable for the particular risk point.

121. **The top number is an annual estimate *excluding* upstream and downstream elements, and the bottom number is a period estimate *including* upstream and downstream elements**. There are different ways to calculate annual and period estimates and gaps in some fiscal and risk data can distort results. Two ways are presented here to help analysts delve deeper.

122. **Looking at the budget system in Afghanistan as an example, Figure 7 below presents the estimate of efficiency losses from weaknesses (or holes) in budget systems of $638m p.a.** on average over the 6 years - on a systemic basis. This estimate separates upstream and downstream impacts at each point of the "follow-the-money corruption cycle". For the budget example in Afghanistan, it can be thought of as the cost of bribes paid in the legislature and/or the executive to direct funding/spending (including tax expenditures[38]) to vested interests, that would have been allocated differently if allocations were based on policy, need, and performance. It also includes lost efficiencies from allocating resources using poor resource allocation practices (e.g., by not learning from experience or using annual and opaque budget systems rather than multi-year and transparent budgeting systems) and/or a result of management incompetence, without corrupt intent.

[36] Though the model can be adapted to include off-budget donor activity.
[37] Non-systemic losses essentially means that upstream and downstream elements are included in the estimate and not removed, whereas systemic losses do remove them. See paragraph 0 on page 21.
[38] Tax expenditures can be thought of as tax breaks. These can be based on well thought through fiscal policy positions or a form of corruption.

Figure 7. Follow-the-Money Cycle: Annual Efficiency Losses (E.g. Afghanistan 2013-18)

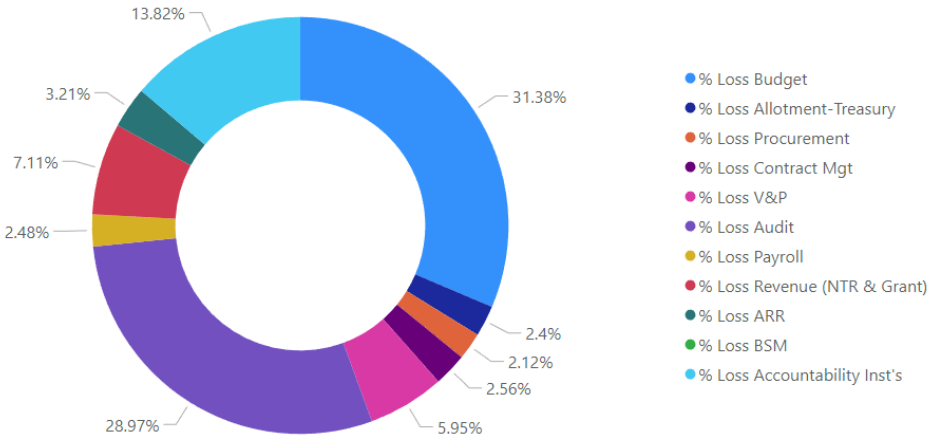


Nb: Losses as a % of Expenditure, Revenue GDP and Per Capita are based on losses of annual averages of sub-system components rather than sum of country averages over a period. These can be different when risk and fiscal data is incomplete for different years.

123. **The number below the annual average $638m figure reveals that $11b is estimated to have been at risk of being lost in the budget system over the whole (6-year) period** between 2013-18, including impacts downstream. The downstream corruption impacts here can be thought of the downstream bribes required to make good on the corrupt deals done in parliament and the executive – where for example bribes on allotments to the budget are paid on the project/program deal, where bribes at the procurement stage are paid to make good on the deal made in parliament, where bribes are paid at the contract management stage and so on. This systemic nature explains why the 6-year period estimate of US$11b is a lot higher than the annualized figure (of US$638m) multiplied by 6 (which would be (US$3.8b). The number below the average annual figures is provided as less data is required to get an estimate compared to average annual figures, which then still gives a sense of the size of the problem in sub-systems. In average annual figures both-subsystem risk and GFS data is required to form an estimate. This means that if either risk or fiscal data is missing the model will not produce an estimate (and will cause a blank over a period of year in certain subsystems). The period estimate in contrast can use period risk and apply to period expenditures/fiscal flows to form an estimate.

124. **Figure 8 below reveals the shares of losses estimated for the different public finance sub-systems** as used by the "follow the money corruption cycle". It shows that in this example, budget has a loss of 31% of the total US$2.0b, followed by audit and oversight at 14%, while procurement accounts for only 2% of all losses, while downstream corruption and downstream expenditure control systems (allotment, procurement, contract management, verification and Payment and accounting) was 15%, with accountability institutions at 13%. Total downstream treasury system account for 19% (including allotments, procurement, contract management, verification and payment, payroll and accounting). Revenues adds another 7%.

Figure 8. Sub-System Shares of Annual Efficiency Losses (E.g. Afghanistan 2013-18)



Sectoral Loss Estimates by Follow-The-Money Cycle

125. **While the previous section looked at models results of losses at the whole of government level, this section estimates losses from a sectoral perspective.** Or more accurately, from a function of government perspective, which is based on GFS data on government expenditures according to the Classification of Functions of Government (COFOG) standard. COFOG can be thought of as sectors used in the development field. Since sectoral risk data is not generally available in the public domain, country level risks are used as a proxy for the sectoral risks. Country level analysis can be conducted to drill down on sector risks in a more detailed way, but this requires a separate specialized risk assessment to be undertaken. It is a simple calculation in the model, but one which is still useful for users to get a sense of the losses in areas like health, education etc.

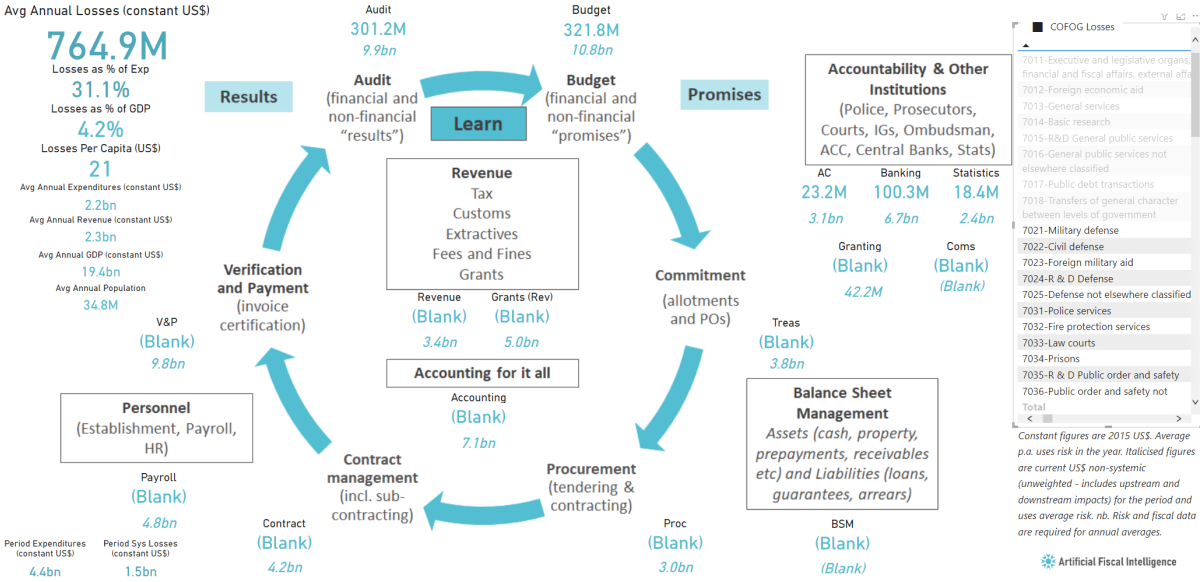
126. **Figure 9 below provides an example of sectoral losses using Afghanistan's security sector (i.e. US$765m per annum)**. Here all COFOG sub-functions for defence, public order, and safety were chosen to limit the amount of money flowing through the system to those sub-functions. What the algorithm actually calculates, is the share of the sub-functions chosen compared to total expenditures under the COFOG database, then applies that share to the total expenditures used on the GFS-economic classification database (i.e., the main aggregates and balances database)[39]. It should be noted that blanks in the systemic estimates in Figure 9 below occur because COFOG expenditure data drops out of some years when compared to economic classification data. Only 2 years of functional data are available for Afghanistan (2016-17) on the IMF database[40]. With 2013 and 2018 missing risk and fiscal data for certain sub-systems (primarily driven by a lack of PEFA-based risk data), means that

[39] The IMF GFS economic and functional databases are different databases, and often functional expenditure data is either missing for a country or sometimes COFOG expenditure totals are different to economic classification database for total expenditures, though they should be the same if standard bridging table methodologies are used to create COFOG tables. Multi-dimensional and multi-resolution fiscal consolidation systems allow a single database to be used to report on both economic and functional classifications, amongst others. Assessment of accuracy of economic and COFOG classified expenditure data was conducted. It found a lot of countries had COFOG totals that were very different to the economic classification totals including for different levels of the general government sector. Results are provided in Attachment E: Reconciliation of Economic COFOG Classification Data on IMF GFS/COFOG Databases by Government Sector on page 107.

[40] A longer timeseries of COFOG data is available from Afghan fiscal intelligence systems. That data is not drawn on here.

annual averages of systemic losses could not be calculated for those points on the "follow-the-money corruption cycle".

Figure 9. Follow-the-Money Cycle: Annual Efficiency Losses (E.g. Afghanistan 2013-18) – COFOG: Defence and Public Order and Safety



127. **An alternative method explored was to draw expenditure data directly from the COFOG database** rather than use shares calculated from that database and apply it to the GFS-economic database for expenditure totals. However, there can be differences in totals between COFOG and GFS-economic datasets, including for different levels of government. And more importantly, COFOG data on the IMF database is not split (cross tabulated) by economic classification making it impossible to apply the fiscal flow rules used in Table 3 above on page 31 at the sectoral level (e.g. salary shares of total expenditure for the whole of government is used as a proxy for the sector, which may not be exactly the same if cross tabulated COFOG data was available).

Aggregate Level Losses - Country League Tables

128. **There are different league tables that can be generated to provide estimates of aggregate global losses.** The most efficient 25 and the most inefficient 25 using all data are provided at Table 4 and Table 5, while the most efficient and most inefficient 25 countries are provided at Table 6 and Table 7 below using PEFA assessments only. Using PEFA assessments only removes many middle- and high-income countries, but it does allow are more consistent use of risk data, especially at the sub-system level enabling fairer comparisons of performance of countries by sub-system.

129. **The detailed league tables present seven (7) different columns.** The tables here are ranked according to size of efficiency losses when expressed as a percentage of government expenditure, but the user can choose to rank/sort by any of the columns. The seven (7) columns shown here are:

1. Efficiency losses (% of Expenditure) country average per year[41]
2. Efficiency losses (% of Revenue) country average per year
3. Efficiency losses (% of GDP) country average per year

[41] Country average per years is calculated for country group summaries, meaning countries with more risk and fiscal data in multi-year aggregates will dominate country group averages rather than simple average.

4. Efficiency losses per capita) country average per year
5. Efficiency losses (Systemic Total) country sum per year – which is the total estimates for every year in the period (note some years may not have data)
6. Efficiency losses (Systemic Total) / No of Years (country average annual period losses)
7. Development Risk country average per Year

130. **Table 4 below shows the raw results of the 25 best performing / most efficient counties** – those with lowest calculated efficiency losses ranked in terms of share of total expenditure. While Table 5 presents the raw results for 25 countries with the highest efficiency losses ranked in terms of share of total expenditure. The tables show both budgetary central government and general government levels.

131. **Table 6 and Table 7 below are the same league tables as the two previous ones, except they draw on only PEFA assessments as the only source for risk calculations**. Only central budgetary government levels are presented. A PEFA only table, provides, arguably a better comparison of risks on the basis that all countries are using the same source for systemic risks, rather than a range of different diagnostics. One downside of this approach is that fewer countries are covered. In addition, there are quality issues associated with PEFA assessments where they are subject to some positive and negative biases, especially the early PEFA assessments. Analysists should also be mindful of these issues when assessing league tables as well a country level risks.

132. **The raw figures indicate the total losses at the budgetary central government level is around US$1.7 trillion every year on average** (or 26% as % of expenditure, 6.7% of GDP and US$569 pp), **and US$4.5 trillion at the general government level** (or 23% as % of expenditure, 8.3% of GDP and US$1,712 pp). Previous global estimates of the costs of corruption were around US$1.0-2.5 trillion[42], but these were limited to only the costs of corruption, while the estimates here include efficiency losses from weak systems and institutions that can occur without corrupt intent.

133. **The differences between general government and budgetary central government losses are driven by much larger flows of funds at the general government sector** compared to the central government level. For example, the expenditures by the United States Budgetary Central Government sector (national only) in 2021 was US$4.96 trillion, while for the General Government sector (national and sub-national) it was more than double at US$10.1 trillion. In other words, there is a bigger cost from weak system at the general government level compared to central government. Users should also be mindful that US sub-national data can swamp other country results, so it can be important to remove US and other big county results when looking at sub-national level.

134. **Risk data at the national level is also used for risk at sub-national levels,** which is another limitation of the generalized model. The methodology could be adapted to use sub-national risk data, though the availability of such data is limited to sub-national PEFA assessments, and not useful for global calculations given its limited take-up.

[42] A common estimate is $1 trillion estimated (upper bound 1.76) in 2005 (Kaufmann, 2005, pp. 96-98) In 2021 dollars it is equivalent to $1.4 trillion (upper bound = $2.5 trillion).

Table 4. Lowest Efficiency Loss League Table (2013-18) – Best 25

Budgetary Central government

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Australia	16.54%	17.77%	4.33%	2,527	363,118,707,436	60,519,784,573	0.326
Georgia	17.29%	18.39%	4.61%	201	4,496,956,415	749,492,736	0.426
United Kingdom	17.44%	20.16%	6.78%	2,983	1,167,314,158,555	194,552,359,759	0.347
Chile	17.78%	19.47%	4.13%	606	66,059,168,055	11,009,861,342	0.387
Mauritius	18.05%	20.28%	3.99%	406	3,076,870,906	512,811,818	0.416
Armenia	18.51%	21.32%	4.97%	191	3,356,255,368	559,375,895	0.472
South Africa	18.57%	21.48%	5.37%	360	120,896,007,547	20,149,334,591	0.440
United States	18.87%	20.76%	2.56%	1,469	2,833,929,330,647	472,321,555,108	0.382
Montenegro	18.94%	21.54%	7.99%	558	1,041,002,298	173,500,383	0.488
Iceland	19.14%	18.08%	6.54%	3,915	7,886,742,494	1,314,457,082	0.347
Peru	19.27%	21.42%	3.71%	242	44,708,200,170	7,451,366,695	0.535
Singapore	19.52%	14.36%	2.58%	1,531	50,977,910,782	8,496,318,464	0.375
Costa Rica	19.91%	28.31%	3.97%	463	13,552,947,859	2,258,824,643	0.440
Korea	20.14%	19.07%	4.30%	1,286	393,945,469,335	65,657,578,222	0.417
Spain	20.18%	23.54%	4.12%	1,166	325,761,496,396	54,293,582,733	0.424
Barbados	20.39%	26.83%	7.12%	1,181	1,347,067,679	224,511,280	0.417
Israel	21.15%	23.32%	6.38%	2,442	123,907,114,374	20,651,185,729	0.446
Serbia	21.43%	22.92%	6.33%	407	17,274,219,825	2,879,036,637	0.504
Morocco	21.45%	24.36%	6.66%	209	43,841,158,322	7,306,859,720	0.555
Samoa	21.70%	23.67%	6.90%	283	328,961,183	54,826,864	0.496
North Macedonia	22.08%	25.76%	5.03%	273	3,388,955,119	564,825,853	0.520
Colombia	22.10%	26.03%	5.03%	353	101,259,560,353	16,876,593,392	0.528
Cabo Verde	22.25%	24.81%	6.19%	211	669,819,023	111,636,504	0.505
Ghana	22.40%	31.48%	4.81%	98	16,588,753,742	2,764,792,290	0.554
Botswana	22.52%	22.90%	8.19%	586	7,575,874,942	1,262,645,824	0.504
Total	**25.82%**	**28.68%**	**6.72%**	**569**	**10,409,659,024,612**	**1,734,943,170,769**	**0.562**

General government

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Finland	14.37%	14.90%	7.95%	3,775	124,103,511,606	20,683,918,601	0.283
Switzerland	14.82%	14.68%	4.79%	4,127	205,310,498,031	34,218,416,339	0.260
New Zealand	15.51%	15.54%	5.61%	2,369	65,980,812,209	10,996,802,035	0.303
Norway	15.60%	13.51%	7.48%	6,333	197,226,539,232	32,871,089,872	0.291
Denmark	16.07%	16.02%	8.68%	5,111	174,600,287,448	29,100,047,908	0.300
Sweden	16.51%	16.56%	8.22%	4,606	271,973,379,485	45,328,896,581	0.313
Australia	16.54%	17.73%	5.99%	3,494	502,158,077,347	83,693,012,891	0.326
Netherlands	16.89%	17.27%	7.45%	3,724	379,439,101,269	63,239,850,212	0.316
Austria	16.94%	17.42%	8.68%	4,227	219,540,321,793	36,590,053,632	0.326
Canada	17.17%	17.28%	6.95%	3,279	706,446,348,239	117,741,058,040	0.332
Georgia	17.23%	17.84%	5.41%	235	5,261,059,248	876,843,208	0.426
United Kingdom	17.44%	20.06%	7.32%	3,221	1,260,441,132,132	210,073,522,022	0.347
Ireland	17.49%	18.83%	5.63%	3,437	97,423,231,167	16,237,205,195	0.332
Estonia	17.51%	17.53%	6.78%	1,339	10,585,362,402	1,764,227,067	0.364
Germany	17.53%	17.17%	7.77%	3,513	1,723,510,952,018	287,251,825,336	0.334
Chile	17.78%	19.18%	4.48%	658	71,749,949,317	11,958,324,886	0.387
Mauritius	18.06%	19.35%	4.22%	430	3,258,766,447	543,127,741	0.416
Belgium	18.17%	18.93%	9.80%	4,414	298,928,146,242	49,821,357,707	0.363
Armenia	18.54%	21.10%	5.25%	201	3,544,101,973	590,683,662	0.472
Japan	18.67%	21.02%	7.32%	2,839	2,165,653,865,454	360,942,310,909	0.367
Slovak Republic	18.76%	19.81%	8.02%	1,424	46,368,914,555	7,728,152,426	0.401
United States	18.87%	22.10%	6.99%	4,012	7,740,302,821,541	1,290,050,470,257	0.382
France	18.88%	20.13%	10.71%	4,301	1,717,600,908,724	286,266,818,121	0.386
South Africa	18.95%	21.41%	8.23%	553	185,521,115,376	30,920,185,896	0.440
Slovenia	19.09%	20.90%	9.51%	2,218	27,478,865,499	4,579,810,917	0.416
Total	**21.97%**	**22.59%**	**8.32%**	**1,712**	**26,758,164,038,399**	**4,459,694,006,400**	**0.562**

Table 5. Highest Efficiency Loss League Table (2013-18)

Budgetary central government

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Somalia	43.18%	42.71%	0.00%	0	4,747	791	0.889
Equatorial Guinea	39.33%	45.22%	9.88%	1,379	9,572,487,947	1,595,414,658	0.826
Central African Republic	37.83%	36.48%	5.45%	23	534,134,452	89,022,409	0.778
Sudan	36.99%	42.14%	4.43%	94	14,464,269,337	2,410,711,556	0.776
Guinea-Bissau	36.08%	39.21%	7.35%	54	99,239,884	16,539,981	0.769
Congo (DRC)	35.76%	37.25%	5.17%	25	11,706,330,856	1,951,055,143	0.728
Nauru	35.22%	32.01%	32.55%	3,267	171,467,376	28,577,896	0.700
Burundi	34.26%	36.97%	9.59%	25	235,140,961	39,190,160	0.687
Republic of the Congo	34.09%	38.27%	9.42%	268	7,819,356,919	1,303,226,153	0.712
Myanmar	32.93%	42.74%	4.52%	53	16,841,296,953	2,806,882,826	0.695
Iraq	32.86%	34.62%	11.79%	634	115,137,249,410	19,189,541,568	0.753
Solomon Islands	32.84%	32.68%	13.23%	301	1,104,849,741	184,141,623	0.672
Micronesia	32.31%	22.84%	9.05%	284	187,220,418	31,203,403	0.683
Angola	32.16%	40.09%	12.41%	418	69,466,529,986	11,577,754,998	0.729
Liberia	31.74%	32.55%	0.07%	1	2,134,582	355,764	0.651
Kiribati	31.27%	22.49%	21.78%	356	240,173,861	40,028,977	0.661
Afghanistan	31.12%	31.52%	8.40%	47	8,063,226,551	1,343,871,092	0.694
Eswatini	31.12%	37.57%	10.59%	405	2,258,255,147	376,375,858	0.662
Maldives	30.94%	35.98%	9.97%	932	2,230,661,015	371,776,836	0.635
Nigeria	30.72%	39.50%	1.96%	58	9,951,239,495	1,658,539,916	0.650
Palau	30.70%	27.83%	11.89%	1,792	190,548,503	31,758,084	0.621
Uzbekistan	30.60%	29.48%	3.14%	72	13,627,364,791	2,271,227,465	0.665
Lebanon	30.48%	44.74%	8.69%	677	26,537,078,150	4,422,846,358	0.661
Mozambique	30.41%	24.93%	6.44%	30	3,463,200,263	577,200,044	0.606
Gabon	30.38%	31.80%	6.65%	543	6,356,494,483	1,059,415,747	0.712
Total	**25.82%**	**28.68%**	**6.72%**	**569**	**10,409,659,024,612**	**1,734,943,170,769**	**0.562**

General government

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Somalia	43.18%	43.05%	0.00%	0	6,503	1,084	0.889
Nauru	35.22%	32.01%	32.55%	3,267	171,467,376	28,577,896	0.700
Myanmar	32.93%	38.06%	7.13%	84	26,588,682,347	4,431,447,058	0.695
Afghanistan	31.40%	31.54%	17.66%	99	17,051,245,637	2,841,874,273	0.694
Republic of the Congo	31.27%	29.34%	10.21%	391	3,662,047,117	610,341,186	0.712
Kiribati	31.27%	21.73%	24.14%	395	265,260,962	44,210,160	0.661
Palau	30.70%	28.38%	18.23%	2,748	292,281,155	48,713,526	0.621
Uzbekistan	30.60%	26.72%	7.15%	167	31,450,571,528	5,241,761,921	0.665
Timor-Leste	29.25%	29.99%	26.69%	343	2,491,684,541	415,280,757	0.652
Côte d'Ivoire	28.47%	34.60%	5.22%	121	3,026,780,934	504,463,489	0.617
Russia	27.15%	27.21%	10.42%	1,220	1,054,137,121,698	175,689,520,283	0.608
Tanzania	27.06%	28.97%	5.40%	54	2,698,356,499	449,726,083	0.590
Kenya	26.95%	36.53%	7.59%	119	29,127,585,314	4,854,597,552	0.626
Uganda	26.85%	31.50%	4.04%	31	5,075,453,540	845,908,923	0.600
Belarus	26.54%	25.37%	10.94%	700	39,712,685,177	6,618,780,863	0.567
Egypt	26.25%	39.56%	8.56%	292	79,397,940,273	13,232,990,046	0.629
Namibia	25.87%	30.81%	11.68%	606	4,379,155,207	729,859,201	0.533
Saudi Arabia	25.83%	29.42%	10.59%	2,566	86,496,759,510	14,416,126,585	0.633
Kyrgyz Republic	25.69%	26.87%	9.29%	113	3,449,864,004	574,977,334	0.580
Thailand	25.65%	25.61%	5.59%	353	145,847,644,429	24,307,940,738	0.559
Paraguay	25.57%	26.37%	4.80%	275	11,113,548,166	1,852,258,028	0.611
Guatemala	25.54%	27.18%	4.06%	168	13,297,686,706	2,216,281,118	0.605
Kosovo	25.51%	27.53%	7.37%	289	3,114,774,691	519,129,115	0.576
Bosnia and Herzegovina	25.46%	25.05%	10.93%	577	11,808,179,859	1,968,029,977	0.558
Senegal	25.46%	29.21%	6.98%	93	5,692,979,036	948,829,839	0.545
Total	**21.97%**	**22.59%**	**8.32%**	**1,712**	**26,758,164,038,399**	**4,459,694,006,400**	**0.562**

Table 6. Lowest Efficiency Loss League Table (2013-18): PEFA Sources Only – Best 25

Budgetary central government

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Georgia	9.25%	9.93%	2.49%	117	868,555,954	144,759,326	0.332
Azerbaijan	9.70%	9.66%	3.01%	237	2,261,758,593	376,959,766	0.323
Moldova	10.07%	10.87%	2.09%	57	161,982,523	26,997,087	0.304
Cabo Verde	10.20%	10.24%	2.54%	80	42,228,761	7,038,127	0.400
South Africa	10.97%	12.55%	3.15%	208	22,861,029,198	3,810,171,533	0.328
Philippines	11.21%	12.90%	1.90%	58	6,038,591,525	1,006,431,921	0.394
Kazakhstan	11.76%	12.34%	1.85%	182	3,318,672,517	553,112,086	0.448
Mauritius	11.90%	13.39%	1.29%	119	150,818,330	25,136,388	0.441
Montenegro	12.38%	14.04%	5.07%	364	226,252,161	37,708,694	0.397
Serbia	12.98%	14.42%	3.92%	219	1,554,839,607	259,139,934	0.409
Morocco	13.00%	13.69%	3.61%	106	7,388,544,674	1,231,424,112	0.469
Armenia	13.02%	13.96%	3.26%	127	740,197,476	123,366,246	0.381
Belarus	13.41%	13.10%	2.25%	188	1,775,105,632	295,850,939	0.419
Dominican Republic	13.54%	16.10%	2.28%	166	1,726,990,861	287,831,810	0.511
Ethiopia	14.28%	18.28%	1.99%	13	1,287,008,297	214,501,383	0.399
Vietnam	14.36%	18.90%	3.49%	82	7,459,027,031	1,243,171,172	0.471
North Macedonia	14.40%	17.14%	3.37%	164	339,189,174	56,531,529	0.415
Colombia	14.46%	18.27%	3.19%	187	9,028,496,632	1,504,749,439	0.434
Seychelles	14.65%	14.43%	5.24%	860	82,399,927	13,733,321	0.497
Honduras	15.27%	22.44%	3.76%	79	694,804,988	115,800,831	0.494
Rwanda	15.31%	18.71%	3.95%	31	365,534,706	60,922,451	0.406
Botswana	15.40%	13.26%	5.09%	368	758,326,267	126,387,711	0.458
El Salvador	15.47%	16.44%	2.89%	102	636,264,441	106,044,073	0.448
Peru	15.47%	17.19%	2.98%	203	18,992,577,263	3,165,429,544	0.521
Mongolia	15.85%	20.60%	3.43%	133	398,981,509	66,496,918	0.502
Total	**16.72%**	**18.72%**	**3.96%**	**146**	**164,447,702,175**	**27,407,950,363**	**0.524**

Table 7. Highest Efficiency Loss League Table (2013-18): PEFA Sources Only

Budgetary central government

	Losses (% of Exp) average per Year	Losses (% of Rev) average per Year	Losses (% GDP) average per Year	Losses (p.c.) average per Year	(Systemic Total) sum per Year	(Systemic Total) / No Of Years	Average average per Year
Republic of the Congo	27.56%	31.12%	9.95%	376	1,782,798,050	297,133,008	0.660
Iraq	25.52%	24.68%	8.82%	440	16,516,561,831	2,752,760,305	0.705
Papua New Guinea	24.46%	31.29%	5.72%	153	1,243,641,284	207,273,547	0.700
Antigua and Barbuda	23.39%	26.60%	5.35%	722	66,799,514	11,133,252	0.664
Lesotho	23.01%	23.91%	12.27%	135	282,914,497	47,152,416	0.713
Albania	22.92%	24.67%	5.35%	242	696,064,354	116,010,726	0.589
Togo	22.69%	29.98%	5.13%	41	309,484,432	51,580,739	0.751
Belize	22.55%	24.34%	7.22%	342	120,977,627	20,162,938	0.596
Cameroon	22.06%	25.92%	4.15%	63	3,165,212,475	527,535,413	0.726
São Tomé and Principe	21.21%	13.18%	3.91%	61	11,749,503	1,958,251	0.542
Cambodia	20.80%	21.77%	4.03%	47	727,587,795	121,264,632	0.555
Madagascar	20.53%	22.97%	3.03%	16	797,946,974	132,991,162	0.662
Gabon	19.68%	18.23%	3.97%	342	1,332,819,449	222,136,575	0.634
Sierra Leone	19.49%	22.50%	3.84%	23	343,883,579	57,313,930	0.599
Malawi	19.34%	25.09%	3.70%	20	365,653,719	60,942,287	0.594
Bosnia and Herzegovina	18.93%	18.77%	4.43%	236	822,727,032	137,121,172	0.481
Jamaica	18.14%	17.86%	5.47%	277	809,339,076	134,889,846	0.574
Samoa	18.06%	19.61%	6.23%	253	98,161,782	16,360,297	0.475
Vanuatu	17.81%	18.00%	4.00%	118	30,317,357	5,052,893	0.519
Côte d'Ivoire	17.73%	20.04%	2.50%	48	1,066,950,134	177,825,022	0.508
Tanzania	17.65%	19.01%	2.73%	26	4,061,141,358	676,856,893	0.575
Costa Rica	17.65%	25.34%	3.66%	439	2,152,107,436	358,684,573	0.523
Guatemala	17.60%	19.34%	2.33%	94	2,992,216,920	498,702,820	0.574
Uganda	17.55%	21.10%	2.73%	20	839,834,310	139,972,385	0.491
Kenya	17.36%	24.67%	4.36%	78	4,017,564,844	669,594,141	0.702
Total	**16.72%**	**18.72%**	**3.96%**	**146**	**164,447,702,175**	**27,407,950,363**	**0.524**

135. **It should be noted that the costing model is totally dependent on the available data and so some estimates of losses for a county are either low or non-existent** – hence the raw results can have some misleading calculations. Expenditure, revenue, balance sheet data and functional data are drawn from IMF GFS databases, which has some data quality issues.

136. **Some countries do not supply all the required fiscal data to the IMF**. Many low-income countries do not have functional and balance sheet data for example. A few others, like China, do not disclose[43] economic expenditure data on the IMF databases, only functional expenditure data, while others only provide some economic data, like Vietnam, which provides only interest expenditures and COFOG expenditures.

137. **Since the estimates model is driven a lot by economic classification expenditure data, countries like China will have low or no estimates of losses**, which needs to be kept in mind, when assessing league tables of efficiency losses. Similarly, not all countries have complete risk data sets, and many countries do not do or do not publish PEFA assessments. This compromises the systems-based risk calculations. Without PEFA data, risk is calculated by fewer sources and sub-system estimates on things like procurement and payroll are not possible.

138. **The identification of all countries with incomplete data such as China, and Vietnam has not yet been assessed for automatic adjustment for league table ranking** purposes. Right now, the analyst will need to review data quality as a separate exercise when assessing estimates of efficiency losses as well as league table rankings. The analyst can easily exclude the country that has incomplete or questionable data. Methods are being explored to include estimates of countries that have missing IMF-GFS data, but this would need to be a separate process at this stage of model development.

Aggregate Results by Income Group, Region, Resource Dependency and Government Sector

139. **The following eight (8) tables provide a summary of the results by income group, region, resource dependency and government sector.** When interpreting grouped results, it is important to be mindful of the countries that underpin the results, the source data for a country as well as the years of risk and fiscal data available. Income group is the group of countries according to wealth thresholds set by the World Bank and measured in Gross National Income (GNI). Region is the World Bank grouping of countries by geographic location, while government sector is the level of Government as defined by the IMF under GFS standards. The first 6 tables are for the budgetary central government level[44]. (For general government sector see Attachment A: Key Results Tables on page 58.)

Table 8. Summary of Results by Income Group (13-18) (BCG)

Income Group	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year
Low income	29.68%	32.98%	5.49%	36
Lower middle income	27.22%	30.85%	7.42%	166
Upper middle income	24.65%	27.52%	6.37%	460
High income	22.93%	24.06%	6.87%	1,859
Total	**25.82%**	**28.68%**	**6.72%**	**569**

[43] As of 15 December 2022.

[44] Country group summaries apply country average per years meaning countries with more risk and fiscal data in more years in multi-year aggregates will dominate country group averages rather than simple average

Table 9. Results by Income Group (13-18) - % of Exp and Rev (BCG)

Income Group	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
Low income	29.68%	6.41%	14.69%	43.18%	32.98%	7.53%	1.48%	45.79%
Lower middle income	27.22%	5.09%	10.96%	36.62%	30.85%	7.71%	11.01%	49.82%
Upper middle income	24.65%	5.38%	8.88%	40.17%	27.52%	7.21%	9.43%	48.48%
High income	22.93%	5.13%	11.61%	37.03%	24.06%	7.80%	10.53%	52.92%
Total	**25.82%**	**5.78%**	**8.88%**	**43.18%**	**28.68%**	**8.07%**	**1.48%**	**52.92%**

See also Attachment A: Key Results Tables on page 58 for general government sector results.

Table 10. Results by Income Group (13-18) - % of GDP & Losses Per Capita (BCG)

Income Group	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
Lower middle income	7.42%	4.74%	1.70%	30.77%	166	110	24	697
High income	6.87%	5.94%	0.80%	37.23%	1,859	1,112	117	5,051
Upper middle income	6.37%	2.35%	1.98%	13.43%	460	264	73	2,393
Low income	5.49%	2.09%	0.00%	9.83%	36	19	0	100
Total	**6.72%**	**4.15%**	**0.00%**	**37.23%**	**569**	**816**	**0**	**5,051**

Table 11. Results by Region (13-18) - % of Exp and Rev (BCG)

Region	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
Sub-Saharan Africa	27.76%	6.59%	10.88%	43.18%	31.73%	8.59%	1.48%	49.82%
South Asia	27.29%	4.79%	16.57%	35.20%	32.07%	7.20%	15.83%	43.37%
East Asia & Pacific	26.89%	5.45%	11.94%	37.03%	27.20%	7.83%	10.53%	46.54%
Middle East & North Africa	26.17%	4.83%	12.48%	36.69%	31.79%	10.15%	13.15%	52.92%
Latin America & Caribbean	23.78%	3.92%	13.73%	30.94%	27.28%	5.62%	13.18%	44.28%
Europe & Central Asia	23.07%	5.25%	8.88%	31.14%	24.29%	5.48%	9.43%	35.01%
North America	18.87%	2.41%	15.10%	21.94%	20.76%	3.04%	15.59%	24.42%
Total	**25.82%**	**5.78%**	**8.88%**	**43.18%**	**28.68%**	**8.07%**	**1.48%**	**52.92%**

Table 12. Results by Region (13-18) - % of GDP & Losses Per Capita (BCG)

Region	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
East Asia & Pacific	9.03%	7.20%	1.91%	37.23%	796	1,028	24	4,102
Middle East & North Africa	7.67%	3.26%	0.80%	13.43%	1,285	1,198	101	5,051
Sub-Saharan Africa	6.62%	3.02%	0.00%	16.57%	233	354	0	2,393
South Asia	6.04%	2.48%	1.70%	11.33%	200	278	26	1,072
Europe & Central Asia	5.54%	1.57%	1.98%	9.85%	693	1,013	57	4,158
Latin America & Caribbean	5.49%	1.86%	2.07%	12.77%	523	376	66	1,958
North America	2.56%	0.32%	2.06%	2.97%	1,469	147	1,234	1,639
Total	**6.72%**	**4.15%**	**0.00%**	**37.23%**	**569**	**816**	**0**	**5,051**

Table 13. Results by Resource Dependency (13-18) - % of Exp and Rev (BCG)

Resource Dependency Status 2010+	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
Highly Resource Dependent (NRR % of GDP >15)	29.54%	6.15%	10.96%	43.18%	32.96%	9.33%	10.93%	52.92%
Moderatly Resource Dependent (NRR % of GDP >10)	28.80%	6.04%	14.69%	39.18%	32.50%	7.96%	1.48%	45.79%
Mildly Resource Dependent (NRR % of GDP >5)	25.09%	5.92%	13.73%	36.04%	29.44%	8.04%	13.18%	48.44%
Not NRR Dependent	24.64%	5.01%	8.88%	37.03%	26.85%	7.07%	9.43%	48.48%
Total	**25.82%**	**5.78%**	**8.88%**	**43.18%**	**28.68%**	**8.07%**	**1.48%**	**52.92%**

Table 14. Results by Resource Dependency (13-18) - % of GDP & Losses Per Capita (BCG)

Resource Dependency Status 2010+	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
Highly Resource Dependent (NRR % of GDP >15)	8.79%	5.40%	0.00%	30.77%	741	962	0	5,051
Mildly Resource Dependent (NRR % of GDP >5)	5.73%	2.75%	1.91%	16.57%	309	588	13	3,124
Moderatly Resource Dependent (NRR % of GDP >10)	5.25%	1.89%	0.40%	9.62%	107	160	2	738
Not NRR Dependent	6.69%	4.14%	1.26%	37.23%	663	846	26	4,158
Total	**6.72%**	**4.15%**	**0.00%**	**37.23%**	**569**	**816**	**0**	**5,051**

Table 15. Results by Fragility (13-18) - % of Exp and Rev (BCG)

Fragile State 22 Top 60	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
FSI 2022 Top 10	35.11%	4.31%	17.31%	43.18%	38.19%	5.87%	15.83%	46.17%
FSI 2022 Top 30	29.23%	5.73%	14.69%	36.69%	34.75%	9.34%	1.48%	49.82%
FSI 2022 Top 60	28.28%	5.47%	11.94%	40.17%	33.51%	7.17%	13.74%	48.44%
Not Fragile (>60)	24.19%	4.96%	8.88%	37.36%	26.06%	6.71%	9.43%	52.92%
Total	**25.82%**	**5.78%**	**8.88%**	**43.18%**	**28.68%**	**8.07%**	**1.48%**	**52.92%**

Table 16. Results by Fragility (13-18) - % of GDP & Losses Per Capita (BCG)

Fragile State 22 Top 60	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
FSI 2022 Top 60	7.49%	4.81%	0.07%	30.77%	209	326	1	2,393
FSI 2022 Top 30	6.61%	2.87%	0.40%	13.43%	190	249	2	891
Not Fragile (>60)	6.60%	4.14%	0.80%	37.23%	745	912	25	5,051
FSI 2022 Top 10	5.37%	2.14%	0.00%	9.83%	44	26	0	100
Total	**6.72%**	**4.15%**	**0.00%**	**37.23%**	**569**	**816**	**0**	**5,051**

Table 17. Results by Gov Sector (13-18) - % of Exp and Rev

Sector Name Long	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
4-Budgetary central government	25.82%	5.78%	8.88%	43.18%	28.68%	8.07%	1.48%	52.92%
5-Extrabudgetary central government	24.74%	5.28%	9.48%	36.62%	32.58%	79.48%	1.53%	878.40%
6-State governments	22.35%	5.90%	9.93%	43.18%	22.60%	6.46%	11.73%	49.57%
3-Central government (excl. social security funds)	22.17%	5.50%	8.94%	43.18%	23.54%	7.09%	1.53%	59.14%
2-Central government (incl. social security funds)	22.00%	5.46%	8.94%	43.18%	22.83%	6.86%	1.53%	59.14%
1-General government	21.97%	5.47%	8.63%	43.18%	22.59%	6.67%	1.53%	59.14%
8-Social security funds	21.86%	5.01%	8.59%	35.18%	19.54%	6.01%	3.72%	39.50%
7-Local governments	21.78%	5.26%	8.90%	43.18%	21.59%	6.89%	2.52%	103.26%

Table 18. Results by Gov Sector (13-18) - % of GDP & Losses Per Capita

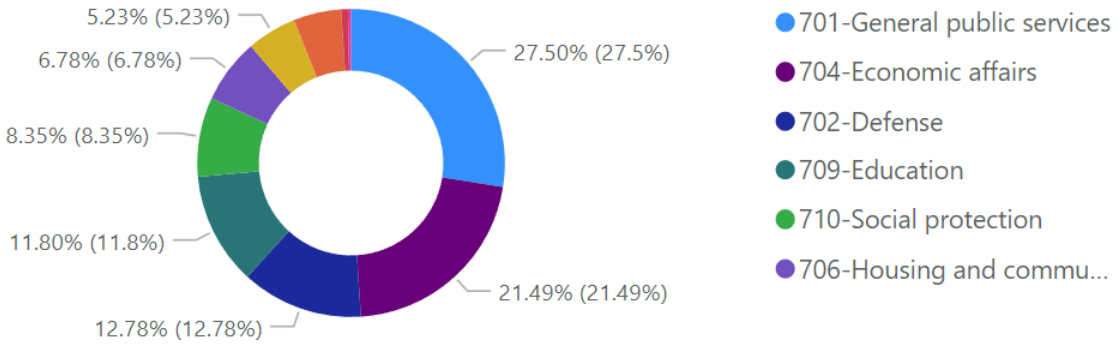
Sector Name Long	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
1-General government	8.32%	4.64%	0.00%	37.23%	1,712	1,788	0	11,340
2-Central government (incl. social security funds)	7.45%	4.71%	0.00%	37.23%	1,413	1,511	0	10,947
3-Central government (excl. social security funds)	6.33%	4.70%	0.00%	37.23%	1,162	1,297	0	8,190
4-Budgetary central government	6.72%	4.15%	0.00%	37.23%	569	816	0	5,051
8-Social security funds	1.95%	1.45%	0.01%	5.91%	459	663	0	4,927
7-Local governments	1.46%	1.12%	0.00%	6.96%	375	597	0	4,355
6-State governments	2.61%	2.19%	0.00%	10.29%	677	766	0	3,060
5-Extrabudgetary central government	1.84%	3.81%	0.00%	27.86%	126	212	0	1,218

Losses by Government Function

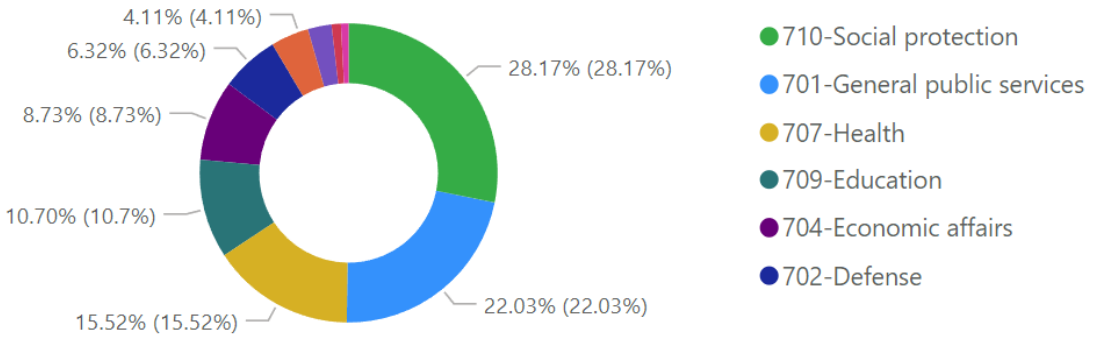
140. **The methodology can also be used to estimate losses in all the different government functional sectors.** Under the model, the size of functional sector losses is determined by the amount of funds flowing in the different sectors. These amounts are unique to each country settings. The parameters are sourced from the IMF government expenditure database on the Classification of the Function of Government (COFOG). Under the general model, national risks are assumed as a proxy for sector level risks. Under country specific analysis sector risks would usually be different.

Table 19. Function Flows– % of Budgetary Central Government Expenditures (2013-18)

Low- and Lower-Income Countries



High-Income Countries



141. **Size of losses reflect the amount of funds flowing through the sector**. Comparing low- and high-income countries with COFOG data (which is not as comprehensive as economic data), we find that low income and lower-middle income countries have relatively more money flowing through certain sectors. The three biggest (non-general) sectors for low income and lower-middle income countries at the budgetary central government level were economic affairs (21% of budgetary central

government expenditures between 2014-20), security (19%) and education (12%). High income countries biggest sectors were social protection (28%), health (16%) and education (11%). (See Table 19 above).

142. **Country comparisons can be done at the functional level.** The example of Afghanistan used earlier in this paper had US$765m p.a. losses estimated at the budgetary central government level originated in the security sector - covering defence and public order and safety functions (representing 31% of security expenditures or 4% of GDP). Comparing some other countries with data at the same level of government, noting that there are some differences in underlying COFOG and sector data, has Argentina at US$2.2b p.a.in losses in the security sector (25% & 0.4%), Philippines at US$1.5b p.a. (23% and 0.4%), and Australia at US$4.8b (17% and 0.3%). The model can also produce estimates of security losses at the general government level (e.g. Ukraine at US$1.9b (25% of security expenditures and 1.4% of GDP), Russia at US$20b (27% and 1.25%), UK at US$20b (17% and 0.63%), Greece at US$2.3b (24% and 1%) and Germany at US$16.6b (18% and 0.5%). (See Table 20 below). Similar table scan be produced for other function and sub-functions of government such health and education.

Table 20. Security Sector Losses: Selected Budgetary Central Governments (2013-18)

Budgetary Central Government

Country	Efficiency Losses (Systemic Total) average per Year	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% GDP) average per Year
Afghanistan	764,912,543	31.12%	4.15%
Ukraine	1,967,199,661	24.94%	1.37%
Russia	19,286,071,093	27.15%	1.22%
United Kingdom	18,121,719,048	17.44%	0.63%
Papua New Guinea	128,961,324	30.29%	0.55%
Brazil	8,775,590,617	24.05%	0.42%
Philippines	1,500,102,633	22.64%	0.38%
Argentina	2,164,188,216	25.25%	0.38%
Australia	4,759,336,269	16.54%	0.34%
Ethiopia	246,615,442	28.16%	0.26%
Total	**7,228,022,383**	**24.54%**	**0.77%**

General Government

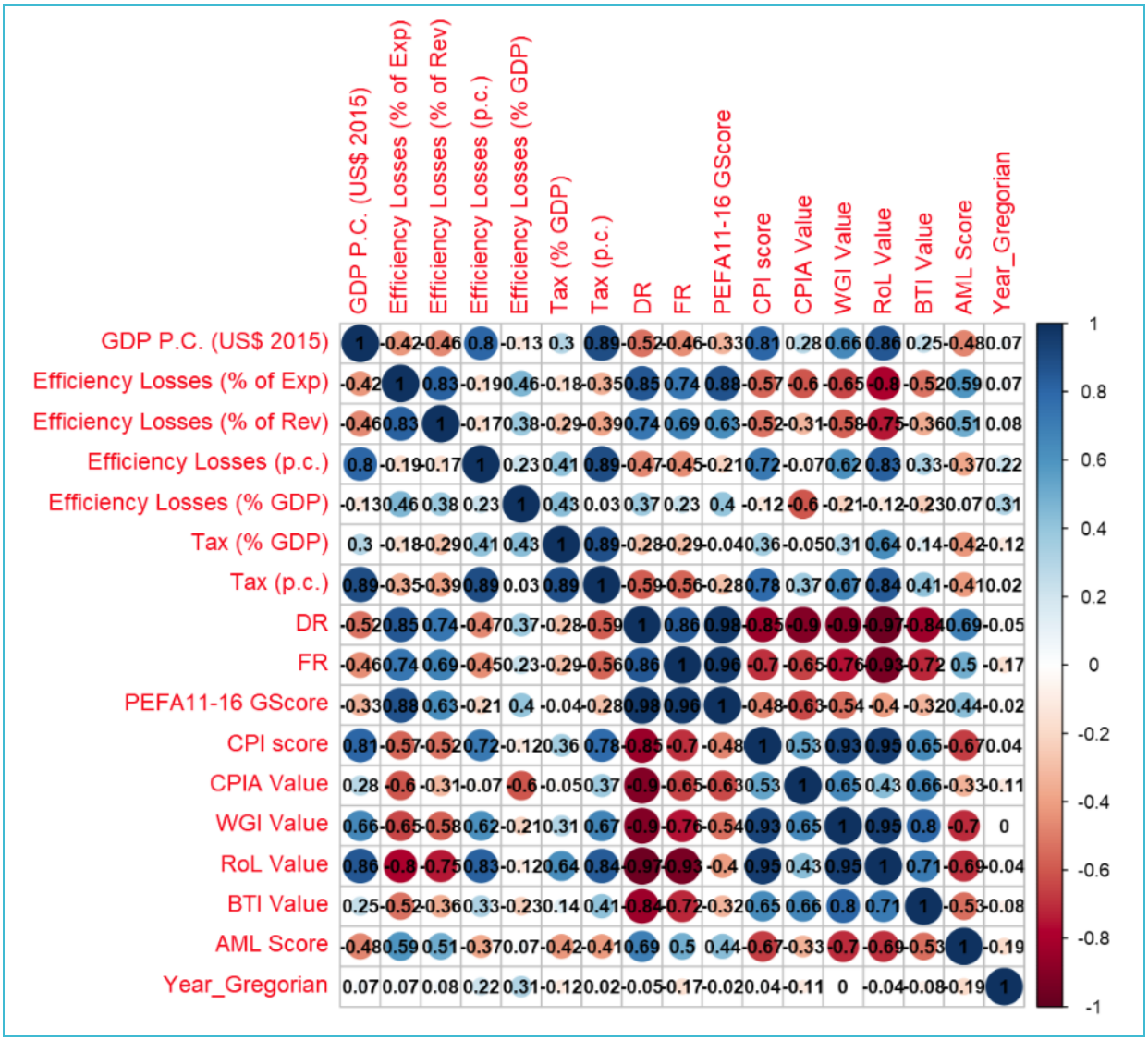
Country	Efficiency Losses (Systemic Total) average per Year	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% GDP) average per Year
Ukraine	1,940,447,029	24.83%	1.37%
Russia	19,680,721,204	27.15%	1.25%
Greece	2,259,695,937	23.60%	1.06%
United Kingdom	19,386,380,779	17.44%	0.68%
France	17,162,256,620	18.88%	0.64%
Australia	8,074,969,357	16.54%	0.58%
Germany	16,631,116,996	17.53%	0.45%
Denmark	1,176,088,579	16.07%	0.35%
Total	**11,230,064,888**	**20.25%**	**0.77%**

Total systemic Losses in US$. Nb. Differences can emerge between levels of government for the same country and are driven by availability and quality of underlying data.

Correlations

143. **Correlations between different measures of efficiency losses and other model parameters are presented at Table 21 below**. The table provides correlation coefficients and visual representation of sign and size of correlations for the general government sector. A more detailed summary of the correlations is also provided (see Attachment B: Correlation Matrices on page 67).

Table 21. Efficiency Loss Correlations (All Sources – General Government)



144. **The correlations were found to be generally intuitively correct**:

- ***Efficiency losses are negatively correlated with tax collections*** – This implies that higher taxing countries have lower efficiency losses. This supports the idea that higher taxing countries are more accountable to the people and therefore have more incentives to be efficient and deliver for the people[45].
- **Efficiency losses are strongly positively correlated with risk levels** – this follows the model logic and the conceptual framework.
- **Development and Fiduciary Risks are correlated with underlying source** data (e.g. PEFA and CPIA), with signs reflecting the nature of the source data measure. This follows the model logic and the conceptual framework.

[45] This is line with IMF research which found that revenues are generally higher in countries perceived to be less corrupt; with the least corrupt governments collecting 4 percent of GDP more in taxes than those at the same level of economic development with the highest levels of corruption (Mauro, et al., 2019)

- **Efficiency losses are correlated with underlying source data.** PEFA, CPI, CPIA, WGI, BTI are all negatively correlated with efficiency loss estimates, while AML is negatively corelated reflecting the nature of source data measure. This also follows the model logic and the conceptual framework.

4. Takeaways

145. **An initial takeaway is that corruption in rich countries can be high because countries are rich not because systems are weaker.** The league tables reveal that many rich countries with stronger systems may have lower risks, but the level of efficiencies and corruption costs are significantly higher on a nominal basis, but significantly lower on a share of expenditure, revenue, or GDP basis. For example, the United States may have the highest losses in US$ terms (US$1.3 trillion p.a. at the general government level and US$0.5 trillion at budgetary central government level), but it has one of the best outcomes in terms of share of government expenditure (18.9% for general government) and a percent of GDP (6.9% for general government and 2.6% for budgetary central government).

"Many rich countries have very high levels of efficiency losses in dollar terms, but that is because they are rich, not because they are systemically corrupt … This is an important finding in that leadership in systemically corrupt countries may not need to fear reform as much as they may do"

146. **Looking at results by income group, we see that income status delivers intuitive results,** with lower income countries having higher losses (29.7% BCG 28.3% GG) compared to high income countries (22.9% BCG 19.6% GG) in terms of percent of budgetary central government expenditure (see Table 9 above). But as percent of GDP low income countries (5.5% BCG 7.4% GG) have lower levels compared to high income countries (7.4% BCG 10.2% GG), but this can be driven from the effect that that poorer countries generally have smaller governments compared to the size of the economy[46] (see Table 10 and Table 22). Results are also impacted by lower income countries generally providing central budgetary government data only rather than complete general government sectoral splits. On a per capita basis, high income countries will almost always have much higher losses, simply because they are so much richer not because of weaker systems. In other words, there is a bigger cost incurred from weaknesses in high income country systems.

147. **Results by region provide similar findings**, with income status of countries in regional grouping driving results as percent of government expenditure. Sub-Saharan Africa had the highest at 27.8% (South Asia had highest at General Government level at 31.4%) as a percent of government expenditure, while North America had the lowest at 18.9% (18.8% GG). An interesting finding is for North America, which has a remarkably low results for losses as percent of GDP (2.6% compared to 9.0% for East Asia Pacific) for budgetary central government (but 7.0% at general governmemt level). On inspection, this is because there are no low income countries in that region[47], while there are in all other regions and general government is realtively large in North America (see Table 11 and Table 12).

[46] Save may resource rich poor countries and small island developing states. Table 22 and Table 23 include Small Island Developing States (SIDS) and resource rich countries. Excluding SIDS reduces the differences between high and low income countries somewhat.

[47] Only USA and Canada, and Canada does not have budgetary central government data on the IMF database.

Table 22. Size of Government: Expenditure as % of GDP by Income Group

Budgetary Central Government

Income Group	2013	2014	2015	2016	2017	2018	Total
High income	26.09%	28.14%	28.66%	28.61%	27.79%	27.43%	27.83%
Lower middle income	25.06%	26.32%	26.24%	27.50%	27.39%	26.33%	26.46%
Upper middle income	25.87%	26.62%	25.89%	25.06%	25.04%	24.03%	25.45%
Low income	18.39%	18.75%	18.72%	19.70%	18.11%	19.31%	18.82%
Total	**24.83%**	**25.94%**	**25.78%**	**25.88%**	**25.33%**	**24.89%**	**25.45%**

General Government

Income Group	2013	2014	2015	2016	2017	2018	Total
High income	40.96%	41.20%	40.96%	40.85%	40.14%	40.18%	40.71%
Lower middle income	37.89%	36.42%	36.32%	39.41%	37.65%	35.55%	37.15%
Low income	66.60%	44.81%	33.45%	31.79%	23.16%	22.32%	32.62%
Upper middle income	32.02%	31.94%	31.59%	31.32%	31.59%	31.19%	31.60%
Total	**38.21%**	**37.91%**	**37.44%**	**37.64%**	**36.62%**	**36.50%**	37.38%

Table 23. Size of Government: Expenditure as % of GDP by Region

Budgetary Central Government

Region	2013	2014	2015	2016	2017	2018	Total
East Asia & Pacific	28.23%	31.55%	31.17%	33.13%	33.02%	31.76%	31.52%
Middle East & North Africa	29.00%	30.81%	30.02%	27.14%	26.85%	26.74%	28.60%
Europe & Central Asia	25.07%	25.45%	25.16%	24.14%	23.54%	23.11%	24.43%
Sub-Saharan Africa	23.26%	24.56%	24.36%	24.57%	23.25%	23.63%	23.93%
Latin America & Caribbean	23.81%	23.08%	23.00%	22.98%	23.03%	20.10%	22.80%
South Asia	20.01%	20.55%	21.67%	22.54%	22.35%	23.08%	21.64%
North America	13.73%	13.57%	13.16%	13.33%	13.19%	13.30%	13.38%
Total	**24.83%**	**25.94%**	**25.78%**	**25.88%**	**25.33%**	**24.89%**	25.45%

General Government

Region	2013	2014	2015	2016	2017	2018	Total
South Asia	66.60%	59.80%	58.04%	51.33%	48.50%		56.85%
Europe & Central Asia	41.85%	41.10%	40.94%	39.90%	39.28%	39.11%	40.36%
North America	38.58%	37.51%	38.16%	38.69%	38.41%	38.47%	38.30%
East Asia & Pacific	34.61%	38.57%	38.23%	40.07%	38.26%	37.97%	37.98%
Middle East & North Africa	34.91%	35.40%	33.97%	36.06%	33.72%	35.94%	35.05%
Sub-Saharan Africa	32.04%	29.98%	25.86%	29.55%	28.66%	29.46%	29.06%
Latin America & Caribbean	27.74%	26.52%	26.13%	26.16%	25.92%	26.36%	26.49%
Total	**38.21%**	**37.91%**	**37.44%**	**37.64%**	**36.62%**	**36.50%**	37.38%

148. **Results by resource dependency status also have similar patterns, but with a difference.** Resource dependency status set for a country is based on the level of natural resources rents as percentage of GDP. A level of greater than 15% of GDP on average since 2010 was rated as highly dependent, greater than 10% as moderately dependent, and greater than 5% as mildly dependent.

Results had countries that were highly dependent on resource rents having the highest estimates of inefficiency and corruption, at 30% of expenditure (9% of GDP) on average at Budgetary Central Government level and 26.1% (10.3% of GDP) at the General Government level (see Table 13 and Table 14 above and Attachment A: Key Results Tables).

149. **Results by levels of fragility have similar patterns.** Fragility status set for a country was based on Fragile States Index 2022. Three categories of fragility were set: Top 10 (rank) of the most fragile countries on the index, top 30 and top 60. Results had countries that were most fragile having the highest estimates of the inefficiency and corruption, at 35% of expenditure (7.5% of GDP) on average at Budgetary Central Government level and 33% (11.0% of GDP) at the General Government level (see Table 15, Table 16 and Attachment A: Key Results Tables).

Table 24. Size of Government: Expenditure as % of GDP by Resource Dependency

Budgetary Central Government

Resource Dependency Status 2010+	2013	2014	2015	2016	2017	2018	Total
Highly Resource Dependent (NRR % of GDP >15)	29.59%	32.83%	31.83%	30.37%	25.55%	26.03%	29.39%
Not NRR Dependent	24.82%	26.02%	26.14%	26.73%	27.07%	26.45%	26.20%
Mildly Resource Dependent (NRR % of GDP >5)	24.25%	23.32%	22.77%	22.62%	22.23%	21.07%	22.70%
Moderatly Resource Dependent (NRR % of GDP >10)	17.24%	18.37%	18.31%	19.00%	18.87%	19.91%	18.63%
Total	**24.83%**	**25.94%**	**25.78%**	**25.88%**	**25.33%**	**24.89%**	**25.45%**

General Government

Resource Dependency Status 2010+	2013	2014	2015	2016	2017	2018	Total
Highly Resource Dependent (NRR % of GDP >15)	38.68%	41.65%	42.17%	47.04%	31.62%	37.46%	39.48%
Not NRR Dependent	39.19%	38.81%	38.44%	38.17%	38.16%	37.81%	38.43%
Moderatly Resource Dependent (NRR % of GDP >10)	31.30%	31.79%	31.32%	30.10%	29.16%	28.99%	30.44%
Mildly Resource Dependent (NRR % of GDP >5)	30.35%	30.63%	29.38%	30.02%	29.77%	27.53%	29.60%
Total	**38.21%**	**37.91%**	**37.44%**	**37.64%**	**36.62%**	**36.50%**	**37.38%**

150. **Interestingly, the highly resource dependent countries group was the only grouping (compared to income status and region) that had the highest losses in all four primary measures** of inefficiency (% of expenditure, revenue and GDP and per capita). This matched the finding that highly resource dependent countries also had the biggest governments, measured as government expenditure as a percentage of GDP (see Table 24 above).

151. **Results by government sector have similar patters, albeit with less dispersion.** Again, this is due to the effect that low-income countries tend to only provide GFS data at the budgetary central government level rather than general and full central government levels (see Table 17 and Table 18 above).

152. **So, it can be seen that many rich countries have very high levels of efficiency losses in dollar terms, but that is because they are rich, not because they are systemically corrupt**. This is an important finding in that leadership in systemically corrupt countries may not need to fear reform as much as they may do. What the model reveals is that growing the pie through reform still allows certain forms of corruption to grow. In more frank terms, Ang's access money still happens, and even increases, while petty corruption and grand theft rapidly reduces. In the words of the low-level officials that we spoke to, the "pep talks that corruption is good" would no longer happen, as a culture of corruption is no longer required by elites to stay in power. The implications are worth exploring in

more detail. It may mean that corrupt systems can still deliver reform and improve development outcomes for the people at limited threat to autocrats and oligarchs.

153. **From a public finance system perspective, the biggest costs within the public finance cycle were linked to the budget.** This can be seen in the country example of Afghanistan (see Figure 7 and Figure 9 on page 39), which had over 30% of losses originating in the budget. The effect is generally applicable to other countries. The effect is driven primarily by the relative size of fund flows compared to other systems like procurement or payroll and the nature of decision making in budget, rather than risk levels. It is also as a result of data availability, as non-PEFA risk data generally points to the budget sub-system. Though on analysis of PEFA only aggregates, budget is still the dominant system for losses. This has implications for reform planning and reform financing. Moreover, it raises the importance of cost-effectiveness when preparing reform plans. Small amount of success in budget for example, can have a bigger impact than large successes in other areas such as procurement or accounting.

154. **From a virtuous cycle perspective, losses in the audit area also represent a huge cost in second levels of efficiency.** Broken audit systems, where audit is used as corruption tool rather than a mechanism for oversight and scrutiny – being designed to either to extract rents or to punish opponents or remove competitors – compromises the whole learning function of governments to keep getting better at raising, allocating and spending public resources. The audit losses in the Afghanistan example are almost as big as the budget losses, reflecting both the weak performance on audit and scrutiny related performance indicators as well as the amount of money that audit covers.

155. **Another key finding is that countries with most systemic corruption and institutional culture problems can be experiencing lost efficiencies of between 30%-45% of expenditure budget.** This analysis puts a financial figure based on all the data that indicate these countries have weak systems and corruption problems. It makes it clear that these countries are losing and wasting a lot of money that could be put to better use for the benefit of the people and the country. Moreover, it highlights that there are opportunities to create fiscal space for the policy priorities by delivering on genuine reform.

"Systemically corrupt countries are losing up to 45% of the expenditure budget"

5. Conclusion

156. **The main purpose of estimating the costs of corruption and efficiency losses from weak systems is to provide reformers with more tools to create stronger incentives for reform** within their countries. We believe that a clear-eyed assessment of corruption and efficiency is needed to secure more successful reforms in more countries. The efficiency loss estimation model allows reformers to make the cost of corruption and weak institutions very clear to citizens, government leadership groups, and other stakeholders. The methodology is an expansion of the fiduciary risk approach that has been used for decades. The problem we are trying to address with this type of assessment is that presenting just a measure of risk is not very meaningful to policy makers, officials, and the public, whereas a financial figure on losses can be much more consequential.

157. **A key risk is that this approach simply results in another league table or index**, that is too removed from the realities of running government and does not help to create the right sort of incentives to drive reforms. We believe, however, that there is the potential that this approach can fundamentally support better budget outcomes (more efficiency) in that any modern budget process

begins with estimating existing fiscal space and working out ways to increase it and fund policy priorities.

158. **This approach can help reformers to better understand what the problems are and the financial benefits of reform as well as the costs of doing nothing**. Using the "follow-the-money corruption cycle" as the conceptual framework helps reveal where the costs of corruption are in Government. Moreover, the efficiency loss estimates can be particularly powerful at helping interested stakeholders tackle the biggest problems. It can help politically and technically. Politically, it can used to make it clearer to other stakeholders what the true costs are and help mobilize support. Technically, it also helps budget officials create more fiscal space for new policy priorities. It can also prevent officials from wasting time on the wrong reforms or from getting stuck with outdated or mistargeted programs.

159. **This approach can be beneficial for any president and minister for finance team that wants to reform and better budgetary outcomes while building political capital** – rather than risking existing political capital. The first benefit is that the model can make it very clear to citizens and internal vested interests of what the costs are from retaining weak systems that allow corruption to perpetuate and evidence-based policy making to be stifled. This helps build a stronger case for reform. The second benefit is that the information can be used to help build support for the government's broader fiscal policy agenda and importantly inform policy decisions on how the government is to become more efficient and effective and the fiscal pathways to deliver it. It can be a major source of savings that is lost to corruption and corruption competitors. Thirdly, it can help introduce a competition for a "race to the top" rather than the bottom, in the case of country dealing with corruption competition problems. And in Ang's view of corruption, it also promotes a shift out of petty and grand theft- forms of corruption to the less inefficient "access money" forms of corruption, providing much greater efficiencies without using up too much political capital in high risk and highly fragile governance settings.

This can help presidents and ministers for finance introduce a "race to the top" and build political capital and then use it wisely

160. **For senior treasury officials, the model not only helps provide some political space to allow genuine reform efforts to succeed, it also allows a more systematic approach to free up fiscal space** for the government's policy priorities. Those policy priorities would have otherwise still been constrained by the inability to close corrupt projects, programs and inefficient tax breaks operated by the very systems that are designed to stop them from emerging in the first place – the public finance controls systems. In addition, in institutions and country settings that have culture of corruption problems, the space to move towards more performance orientated management cultures could be opened up systematically, using institutional culture change approaches such as Team-Based Performance Management (TBPM) (Laing, 2016) and (Payenda, 2020).

161. **For international development partners, the "follow the money corruption cycle" reveals that donor resources are almost certainly going to areas where reforms cost the most rather than where reforms are most cost-effective**. In the public finance area, donors put significant amounts of time and money into two areas: accounting and procurement systems. These are classic areas where system development costs can be significant,

"Donor resources are almost certainly going to areas where reforms cost the most rather than where reforms are most cost-effective"

reflecting the "IT solutions approach" to fixing corruption problems. The "follow the money corruption cycle" and the loss estimates produced by the model, reveals that corruption problems in formulation and negotiation of budgets as well as corruption in the auditing process might be better places to focus attention to get more efficiency out of the system at much lower financial cost. That said, when looking deeper into the reforms required to deal with corrupt or broken budget and audit systems, it becomes clearer that the technical reforms are reasonably straightforward and not overly expensive, but that the political strategies required to be successful in these two areas are much more challenging. Those challenges should be able to be a bit less challenging to overcome if reformers have the evidence that indicates where the real problems are and how much it is costing the people. Risk or system quality-based benchmarks just aren't that meaningful to lay people.

162. **The follow-the-money cycle driven model helps reformers to not get too distracted in relatively safe areas like procurement and accounting.** Distraction reform can easily happen and not lead to improvements, even when the reform is nominally successful. For example, we have seen in various country settings that focusing efforts on reducing corruption at the procurement stage resulted in corruption efforts being moved downstream, when the procurement reform effort was successful. What happens in this scenario is that, rather than waste time and effort at the contracting stage, corruption forces simply move downstream to the contract-management stage. In other words, if you can't bribe an official to get the contract you want, you can just bribe a different official to change an existing contract to the one that you wanted in the first place. Moreover, the evidence presented here backs up findings that success in procurement reform doesn't deal with systemic problems and can actually strengthen them. Analysis of the defn (see Attachment F: Procurement Benchmarking Study Analysis on page 134).

163. **This reveals the "whack a mole" problem when reform efforts are viewed in isolation of the "follow the money corruption cycle"**. Putting additional controls at the procurement stage, without dealing with the source of the problem upstream, for example in parliament/executive or at the allotment/commitment control phase where corrupt deals are done on the allocation of resources to projects, will not result in any real reduction in overall corruption. It will just move corruption to different points in the "Follow-the-Money Corruption Cycle". Similarly, having advanced accounting systems doesn't do anything for cleaning up government institutions if there is a systemic corruption problem. Good accounting systems are useful for criminal networks as they are for public good networks, which government is supposed to be. The case of shadow networks running two different "books" using the same systems – one for the donors and the real one – is also not uncommon, especially when audit systems have been corrupted.

The "whack a mole" problem": fixing the procurement just moves corruption downstream and does nothing upstream where it originates … and … good accounting systems are useful for criminal networks as they are for public good networks, which government is supposed to be.

164. **From a virtuous cycle perspective, the focus areas for anti-corruption and institutional learning are strengthening budgets and audits**. These are two foundation systems for transparency, accountability, and institutional learning. Such institutional systems help ensure that only good fiscal policy gets adopted and implemented through the budget cycle and minimizes the risk of adopting bad policies with and without corrupt intent (Laing, 2019). The audit system in particular, is crucial to securing second round efficiencies from the system by allowing the institutional learning function to work as intended - by having better fiscal data used routinely for policy making and performance management, rather than being used as a powerful corruption instrument to punish non-compliant

officials and cover up malfeasance and corruption. These two core public finance systems can still be effective in culture of corruption environments – they just take longer to secure budgetary outcomes improvements.

Nex Steps

165. **Comments are being sought on the model,** the conceptual framework and its usefulness for reformers and their supporters. Stakeholder consultation will include wide range of views including experts, government officials, journalists, and other interested parties. More testing is required of the model and the process for this is under consideration. The testing will be looking for bugs in the system as well as ways to identify data issues, improve parameters, algorithms and the form of the costing equation, and make the system quicker and more user friendly. This will take place over the coming months if there is sufficient demand. Updates to the model will occur as improvements are made.

166. **The methodology and dataset can be used to develop other speciality regional, thematic and country level analytics**. These could include investigations in the following areas:

1. Trends in corruption and other inefficiency losses in resource rich countries and the core drivers;
2. Sources of fragility in fragile states;
3. Detecting stickiness and bias in global diagnostics through triangulation, correlation and clustering analysis;
4. Cost effectiveness of technical assistance interventions in governance and public financial management;
5. Positive and Negative Outliers – lessons learned from catastrophic failures and unexpected successes;
6. Elite bargains and the costs of externally brokered spoils of war peace deals; and
7. Deep dive country-level management analytics using confidential fiscal data.

167. **Further work is also required to fine tune the model in certain areas** including new algorithms to help flag important data problems in source databases and improving the robustness of impact parameters. The development of country specific impact adjustment factors may help improve estimates based on deeper knowledge of other important determinates of inefficiency and corruption, other than what is currently known about in terms of public finance system quality. Currently, the model appears weak in capturing institutional culture, which can be more powerful than following standard “best practice” procedures. If there is sufficient interest, the model will get updated following stakeholder consultation and a revised note will be published.

Attachments

Attachment A: Key Results Tables

Table 25. Results by Income Group (2013-18) - % of Expenditures and Revenues (GG)

Income Group	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
Low income	28.29%	7.40%	15.51%	43.18%	30.26%	7.31%	17.46%	43.05%
Lower middle income	26.83%	4.96%	11.65%	36.04%	28.00%	8.54%	1.53%	59.14%
Upper middle income	23.19%	4.88%	8.63%	33.87%	24.37%	5.63%	2.52%	36.28%
High income	19.63%	4.27%	11.72%	37.03%	19.71%	4.61%	8.67%	35.18%
Total	**21.97%**	**5.47%**	**8.63%**	**43.18%**	**22.59%**	**6.67%**	**1.53%**	**59.14%**

Table 26. Results by Income Group (2013-18) - % of GDP and Losses Per Capita (GG)

Income Group	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
Lower middle income	10.20%	7.00%	0.55%	34.24%	219	120	17	479
Low income	9.28%	6.48%	0.00%	20.49%	59	34	0	126
High income	8.23%	4.30%	1.35%	37.23%	2,860	1,742	125	11,340
Upper middle income	7.38%	2.76%	0.63%	12.76%	500	297	76	1,582
Total	**8.32%**	**4.64%**	**0.00%**	**37.23%**	**1,712**	**1,788**	**0**	**11,340**

Table 27. Results by Region (2013-18) - % of Expenditures and Revenues (GG)

Region	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
South Asia	31.40%	6.34%	18.73%	35.20%	31.54%	6.76%	18.12%	36.03%
East Asia & Pacific	24.22%	6.22%	12.15%	37.03%	22.96%	8.49%	8.67%	59.14%
Sub-Saharan Africa	24.15%	6.04%	11.72%	43.18%	26.52%	8.25%	1.53%	43.05%
Middle East & North Africa	22.83%	3.26%	17.66%	30.73%	25.34%	6.76%	16.11%	45.69%
Latin America & Caribbean	22.74%	4.37%	14.27%	30.03%	24.27%	5.57%	2.52%	32.00%
Europe & Central Asia	20.58%	4.82%	8.63%	33.87%	21.22%	5.19%	8.80%	36.28%
North America	18.02%	2.51%	14.41%	21.94%	19.69%	3.66%	14.43%	26.05%
Total	**21.97%**	**5.47%**	**8.63%**	**43.18%**	**22.59%**	**6.67%**	**1.53%**	**59.14%**

Table 28. Results by Region (2013-18) - % of GDP and Losses Per Capita (GG)

Region	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
South Asia	17.66%	3.00%	12.26%	20.49%	99	18	77	126
East Asia & Pacific	10.09%	8.82%	1.98%	37.23%	1,485	1,290	35	4,327
Europe & Central Asia	8.29%	2.23%	2.19%	15.63%	2,152	2,043	72	11,340
Middle East & North Africa	8.05%	1.21%	6.22%	10.59%	2,217	1,084	256	3,539
North America	6.97%	0.77%	5.68%	8.03%	3,645	616	2,720	4,426
Sub-Saharan Africa	6.81%	2.81%	0.00%	12.76%	392	417	0	1,609
Latin America & Caribbean	5.99%	2.44%	0.63%	12.71%	464	306	76	1,192
Total	**8.32%**	**4.64%**	**0.00%**	**37.23%**	**1,712**	**1,788**	**0**	**11,340**

Table 29. Results by Resource Dependency (13-18) - % of Exp and Rev (GG)

	Exp) average per Year	Exp) S.D. per Year	of Exp) Min per Year	Exp) Max per Year	Rev) average per Year	Rev) S.D. per Year	Rev) Min per Year	of Rev) Max per Year
Moderatly Resource Dependent (NRR % of GDP >10)	28.88%	2.34%	24.00%	31.14%	26.96%	1.95%	24.55%	31.00%
Highly Resource Dependent (NRR % of GDP >15)	26.14%	5.59%	10.72%	43.18%	26.05%	10.13%	1.53%	59.14%
Mildly Resource Dependent (NRR % of GDP >5)	22.36%	6.26%	13.43%	36.04%	24.73%	8.68%	11.54%	45.69%
Not NRR Dependent	21.37%	5.11%	8.63%	37.03%	21.89%	5.83%	2.52%	42.65%
Total	**21.97%**	**5.47%**	**8.63%**	**43.18%**	**22.59%**	**6.67%**	**1.53%**	**59.14%**

Table 30. Results by Resource Dependency (13-18) - % of GDP & Losses Per Capita (GG)

Resource Dependency Status 2010+	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
Highly Resource Dependent (NRR % of GDP >15)	10.36%	8.07%	0.00%	34.24%	879	1,021	0	3,440
Moderatly Resource Dependent (NRR % of GDP >10)	8.78%	1.75%	6.78%	11.61%	693	550	120	1,582
Not NRR Dependent	8.38%	4.46%	0.63%	37.23%	1,867	1,776	71	11,340
Mildly Resource Dependent (NRR % of GDP >5)	6.44%	1.95%	2.63%	10.56%	1,296	2,124	20	8,539
Total	**8.32%**	**4.64%**	**0.00%**	**37.23%**	**1,712**	**1,788**	**0**	**11,340**

Table 31. Results by Fragility (13-18) - % of Exp and Rev (GG)

Fragile State 22 Top 60	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Exp) S.D. per Year	Efficiency Losses (% of Exp) Min per Year	Efficiency Losses (% of Exp) Max per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% of Rev) S.D. per Year	Efficiency Losses (% of Rev) Min per Year	Efficiency Losses (% of Rev) Max per Year
FSI 2022 Top 10	33.15%	5.25%	18.73%	43.18%	35.76%	6.23%	18.12%	43.21%
FSI 2022 Top 30	28.33%	5.77%	16.50%	35.18%	30.78%	5.86%	19.37%	36.52%
FSI 2022 Top 60	25.03%	5.06%	12.15%	31.56%	28.75%	9.94%	10.81%	59.14%
Not Fragile (>60)	21.37%	5.04%	8.63%	37.03%	21.69%	5.64%	1.53%	39.64%
Total	**21.97%**	**5.47%**	**8.63%**	**43.18%**	**22.59%**	**6.67%**	**1.53%**	**59.14%**

Table 32. Results by Fragility (13-18) - % of GDP & Losses Per Capita (GG)

Fragile State 22 Top 60	Efficiency Losses (% GDP) average per Year	Efficiency Losses (% GDP) S.D. per Year	Efficiency Losses (% GDP) Min per Year	Efficiency Losses (% GDP) Max per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (p.c.) S.D. per Year	Efficiency Losses (p.c.) Min per Year	Efficiency Losses (p.c.) Max per Year
FSI 2022 Top 10	10.93%	6.46%	0.00%	20.49%	83	33	0	126
FSI 2022 Top 60	10.16%	8.06%	2.30%	34.24%	232	165	36	626
Not Fragile (>60)	8.15%	4.18%	0.55%	37.23%	1,883	1,806	17	11,340
FSI 2022 Top 30	6.10%	3.00%	2.63%	10.33%	151	170	20	401
Total	**8.32%**	**4.64%**	**0.00%**	**37.23%**	**1,712**	**1,788**	**0**	**11,340**

Table 33. Efficiency Losses US$: Low and Lower-Middle Income Countries with Development Risk and GFS Fiscal Data (BCG) 2012-18

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Somalia	43.18%	42.71%	0.00%	0	4,747	791	0.889
Central African Republic	37.83%	36.48%	5.45%	23	534,134,452	89,022,409	0.778
Sudan	36.99%	42.14%	4.43%	94	14,464,269,337	2,410,711,556	0.776
Guinea-Bissau	36.08%	39.21%	7.35%	54	99,239,884	16,539,981	0.769
Congo (DRC)	35.76%	37.25%	5.17%	25	11,706,330,856	1,951,055,143	0.728
Burundi	34.26%	36.97%	9.59%	25	235,140,961	39,190,160	0.687
Republic of the Congo	34.09%	38.27%	9.42%	268	7,819,356,919	1,303,226,153	0.712
Myanmar	32.93%	42.74%	4.52%	53	16,841,296,953	2,806,882,826	0.695
Solomon Islands	32.84%	32.68%	13.23%	301	1,104,849,741	184,141,623	0.672
Micronesia	32.31%	22.84%	9.05%	284	187,220,418	31,203,403	0.683
Angola	32.16%	40.09%	12.41%	418	69,466,529,986	11,577,754,998	0.729
Liberia	31.74%	32.55%	0.07%	1	2,134,582	355,764	0.651
Kiribati	31.27%	22.49%	21.78%	356	240,173,861	40,028,977	0.661
Afghanistan	31.12%	31.52%	8.40%	47	8,063,226,551	1,343,871,092	0.694
Eswatini	31.12%	37.57%	10.59%	405	2,258,255,147	376,375,858	0.662
Nigeria	30.72%	39.50%	1.96%	58	9,951,239,495	1,658,539,916	0.650
Uzbekistan	30.60%	29.48%	3.14%	72	13,627,364,791	2,271,227,465	0.665
Mozambique	30.41%	24.93%	6.44%	30	3,463,200,263	577,200,044	0.606
Papua New Guinea	30.29%	37.26%	6.74%	184	7,615,782,698	1,269,297,116	0.685
Lao PDR	30.23%	37.60%	6.99%	154	6,307,872,764	1,051,312,127	0.645
Togo	30.17%	34.46%	6.98%	49	2,181,063,511	363,510,585	0.671
Gambia, The	29.87%	38.32%	7.61%	54	241,649,789	40,274,965	0.650
Cambodia	29.81%	31.39%	6.28%	79	7,443,465,879	1,240,577,646	0.659
Cameroon	29.40%	35.37%	5.58%	83	11,721,205,410	1,953,534,235	0.689
Timor-Leste	28.82%	30.88%	24.33%	313	2,276,092,255	379,348,709	0.652
Total	**27.85%**	**31.40%**	**6.92%**	**132**	**1,354,540,768,788**	**225,756,794,798**	**0.649**

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Madagascar	28.74%	32.13%	3.97%	20	2,971,158,413	495,193,069	0.660
Benin	28.52%	24.15%	3.08%	39	385,882,164	64,313,694	0.606
Ethiopia	28.16%	36.70%	4.01%	27	16,560,539,610	2,760,089,935	0.607
Nepal	27.92%	28.20%	5.67%	56	9,212,441,468	1,535,406,911	0.605
Bangladesh	27.85%	33.08%	3.24%	48	45,034,118,316	7,505,686,386	0.640
Côte d'Ivoire	27.45%	33.11%	4.31%	90	12,875,462,299	2,145,910,383	0.617
Lesotho	27.39%	28.99%	14.98%	170	2,114,245,757	352,374,293	0.618
Uganda	27.28%	33.21%	3.95%	31	6,245,136,720	1,040,856,120	0.600
Kenya	27.16%	38.09%	6.30%	96	28,033,227,198	4,672,204,533	0.626
São Tomé and Principe	27.12%	28.08%	7.89%	137	166,633,097	27,772,183	0.624
Nicaragua	26.87%	27.89%	5.08%	103	3,871,025,379	645,170,896	0.605
Malawi	26.84%	31.64%	5.97%	24	2,408,530,433	401,421,739	0.604
Sierra Leone	26.72%	30.08%	5.53%	32	1,377,601,100	229,600,183	0.636
Honduras	26.68%	31.58%	6.18%	144	8,007,019,847	1,334,503,308	0.608
Sri Lanka	26.66%	38.53%	5.09%	198	25,083,499,263	4,180,583,210	0.562
Vanuatu	26.42%	23.53%	7.59%	224	373,805,796	62,300,966	0.601
Kyrgyz Republic	26.25%	28.32%	7.23%	89	3,213,299,490	535,549,915	0.580
Egypt	26.25%	41.89%	7.88%	269	73,147,795,402	12,191,299,234	0.629
Mali	26.06%	29.59%	5.01%	41	4,335,053,042	722,508,840	0.616
Pakistan	25.96%	36.37%	5.34%	69	40,445,378,416	6,740,896,403	0.648
Vietnam	25.47%	30.20%	5.89%	163	91,183,770,867	15,197,295,144	0.567
Senegal	25.44%	29.83%	5.92%	80	7,098,516,502	1,183,086,084	0.545
Zambia	25.25%	33.68%	6.69%	101	9,851,166,312	1,641,861,052	0.588
India	25.18%	31.02%	4.00%	69	544,419,742,951	90,736,623,825	0.553
Ukraine	24.94%	27.62%	6.96%	193	52,266,870,037	8,711,145,006	0.590
Total	**27.85%**	**31.40%**	**6.92%**	**132**	**1,354,540,768,788**	**225,756,794,798**	**0.649**

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Ukraine	24.94%	27.62%	6.96%	193	52,266,870,037	8,711,145,006	0.590
Mongolia	24.66%	30.80%	6.02%	239	4,345,926,755	724,321,126	0.559
Burkina Faso	24.61%	29.07%	5.71%	42	4,698,033,499	783,005,583	0.575
Moldova	23.36%	25.06%	4.86%	165	2,767,232,587	461,205,431	0.535
Bhutan	23.31%	24.59%	7.33%	212	934,582,698	155,763,783	0.504
Rwanda	23.26%	27.34%	6.19%	47	2,731,198,608	455,199,768	0.506
Tanzania	22.99%	25.02%	3.64%	35	11,090,082,246	1,848,347,041	0.590
El Salvador	22.95%	24.05%	4.46%	169	6,452,985,796	1,075,497,633	0.533
Philippines	22.64%	25.22%	3.79%	116	71,887,974,383	11,981,329,064	0.534
Ghana	22.40%	31.48%	4.81%	98	16,588,753,742	2,764,792,290	0.554
Cabo Verde	22.25%	24.81%	6.19%	211	669,819,023	111,636,504	0.505
Morocco	21.45%	24.36%	6.66%	209	43,841,158,322	7,306,859,720	0.555
Algeria							0.689
Bolivia							0.617
Chad							0.751
Comoros							0.722
Djibouti							0.705
Eritrea							0.834
Guinea							0.686
Haiti							0.731
Mauritania							0.649
Niger							0.618
North Korea							0.878
South Sudan							0.855
Syrian Arab Republic							0.836

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
⊞ Tajikistan							0.653
⊞ Tunisia							0.572
⊞ West Bank and Gaza							0.580
⊞ Yemen							0.760
⊞ Zimbabwe							0.720
Total	**27.85%**	**31.40%**	**6.92%**	**132**	**1,354,540,768,788**	**225,756,794,798**	**0.649**

Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
Timor-Leste	30.17%	32.31%	25.45%	327	2,380,927,495	396,821,249	0.655
Benin	30.03%	25.42%	3.24%	41	406,198,141	67,699,690	0.613
Nepal	29.59%	29.91%	6.01%	59	9,785,072,681	1,630,845,447	0.630
Bangladesh	29.18%	34.66%	3.40%	50	47,173,999,038	7,862,333,173	0.653
Ethiopia	29.11%	37.92%	4.15%	28	17,097,957,007	2,849,659,501	0.608
Kenya	29.02%	40.68%	6.72%	103	29,868,730,256	4,978,121,709	0.660
Côte d'Ivoire	28.83%	34.78%	4.53%	95	13,524,480,350	2,254,080,058	0.628
Nicaragua	28.45%	29.53%	5.38%	109	4,098,188,342	683,031,390	0.622
Lesotho	28.37%	30.03%	15.51%	177	2,189,527,995	364,921,332	0.616
Uganda	28.35%	34.53%	4.10%	33	6,486,465,230	1,081,077,538	0.610
Honduras	28.12%	33.27%	6.51%	152	8,440,069,204	1,406,678,201	0.623
Sierra Leone	27.98%	31.48%	5.80%	33	1,442,089,549	240,348,258	0.650
São Tomé and Principe	27.95%	28.98%	8.14%	141	171,985,791	28,664,298	0.610
Vanuatu	27.77%	24.71%	7.98%	235	393,281,863	65,546,977	0.600
Malawi	27.76%	32.72%	6.17%	24	2,490,275,066	415,045,844	0.603
Egypt	27.61%	44.08%	8.30%	283	76,867,337,565	12,811,222,927	0.601
Sri Lanka	27.42%	39.65%	5.23%	203	25,797,509,953	4,299,584,992	0.552
Mali	27.33%	31.01%	5.25%	43	4,544,034,902	757,339,150	0.630
Kyrgyz Republic	27.17%	29.31%	7.48%	92	3,325,869,433	554,311,572	0.585
Senegal	26.94%	31.58%	6.26%	84	7,511,353,505	1,251,892,251	0.558
Pakistan	26.77%	37.50%	5.51%	71	41,722,227,200	6,953,704,533	0.647
Ukraine	26.37%	29.22%	7.36%	205	55,410,831,677	9,235,138,613	0.595
Zambia	26.32%	35.13%	6.98%	106	10,270,879,408	1,711,813,235	0.589
Vietnam	26.29%	31.18%	6.08%	168	94,024,388,919	15,670,731,487	0.565
India	26.23%	32.32%	4.17%	72	566,814,389,999	94,469,065,000	0.549
Total	**29.20%**	**32.91%**	**7.25%**	**139**	**1,416,248,842,992**	**236,041,473,832**	**0.657**

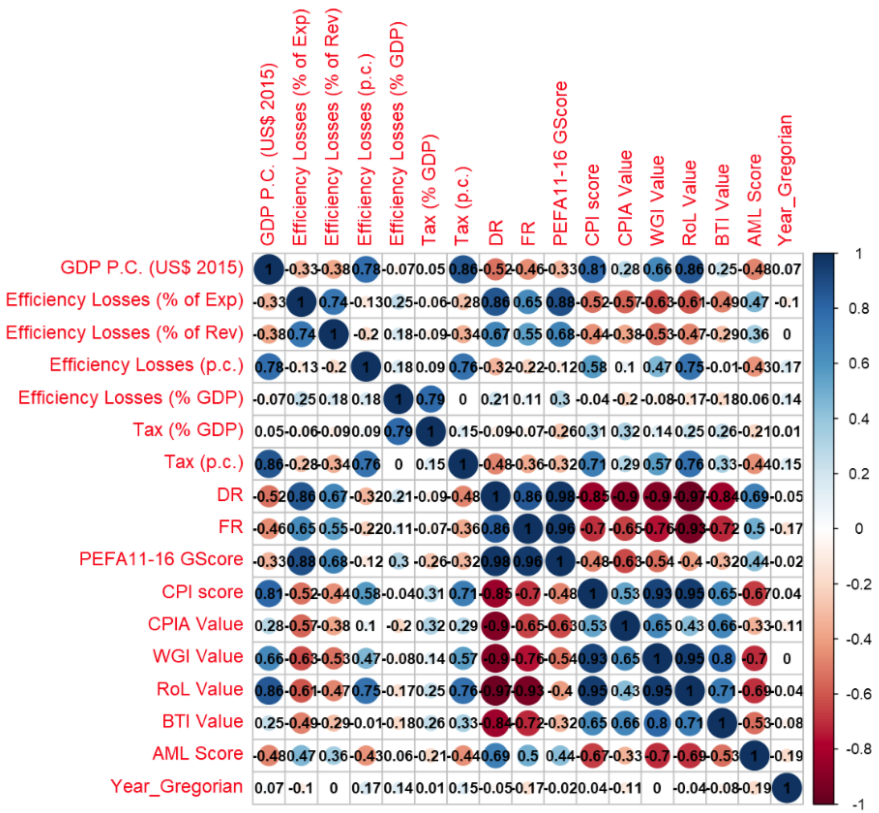
Country	Efficiency Losses (% of Exp) average per Year	Efficiency Losses (% of Rev) average per Year	Efficiency Losses (% GDP) average per Year	Efficiency Losses (p.c.) average per Year	Efficiency Losses (Systemic Total) sum per Year	Efficiency Losses (Systemic Total) / No Of Years	DR Average average per Year
India	26.23%	32.32%	4.17%	72	566,814,389,999	94,469,065,000	0.549
Burkina Faso	25.76%	30.43%	5.98%	44	4,918,555,342	819,759,224	0.586
Mongolia	25.06%	31.33%	6.12%	243	4,419,145,140	736,524,190	0.538
Rwanda	24.69%	29.01%	6.57%	50	2,898,632,138	483,105,356	0.522
Moldova	24.07%	25.82%	5.00%	170	2,853,368,648	475,561,441	0.526
El Salvador	24.04%	25.20%	4.67%	177	6,761,963,858	1,126,993,976	0.532
Tanzania	23.98%	26.10%	3.80%	37	11,575,457,233	1,929,242,872	0.601
Bhutan	23.94%	25.27%	7.54%	218	961,865,321	160,310,887	0.487
Philippines	23.76%	26.45%	3.97%	122	75,268,076,755	12,544,679,459	0.530
Ghana	23.42%	32.91%	5.03%	103	17,328,515,168	2,888,085,861	0.559
Cabo Verde	22.93%	25.58%	6.38%	218	690,501,507	115,083,584	0.492
Morocco	22.69%	25.77%	7.05%	222	46,393,646,341	7,732,274,390	0.552
Algeria							0.689
Bolivia							0.627
Chad							0.762
Comoros							0.736
Djibouti							0.734
Eritrea							0.822
Guinea							0.708
Haiti							0.756
Mauritania							0.670
Niger							0.624
North Korea							0.878
South Sudan							0.851
Syrian Arab Republic							0.836
Total	**29.20%**	**32.91%**	**7.25%**	**139**	**1,416,248,842,992**	**236,041,473,832**	**0.657**

Attachment B: Correlation Matrices

Correlation Matrices for Budgetary Central Govt and All Years by Country Income Level

Table 34. All Country Correlation Matrices: All Sources V's PEFA 2016 Sources for DR and FR (All Years) BCG

All Sources



PEFA 2016 Only

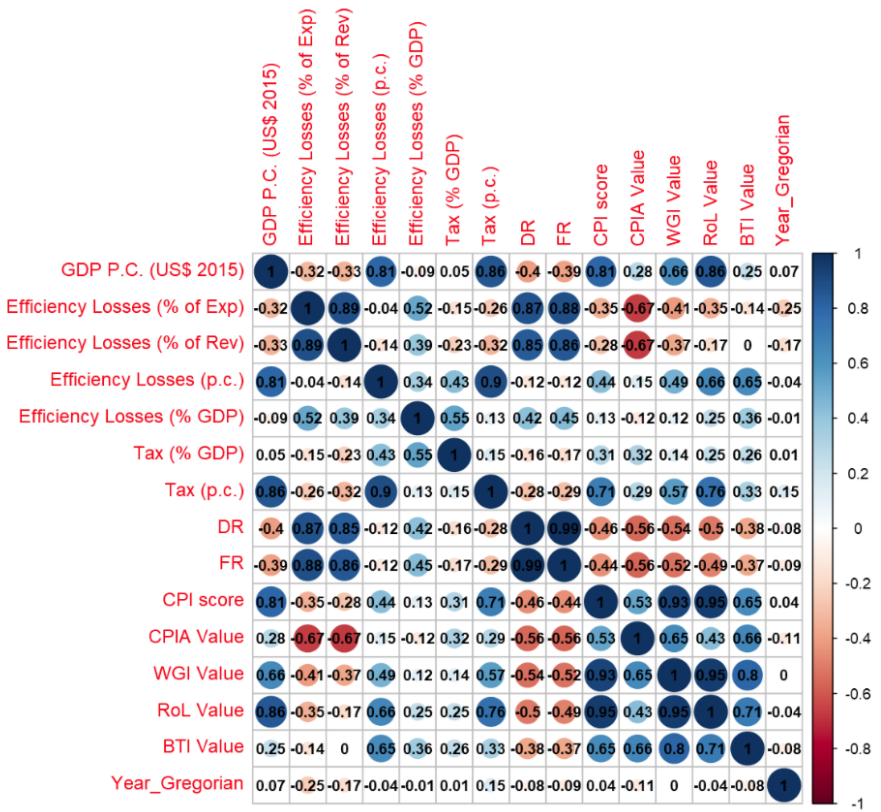
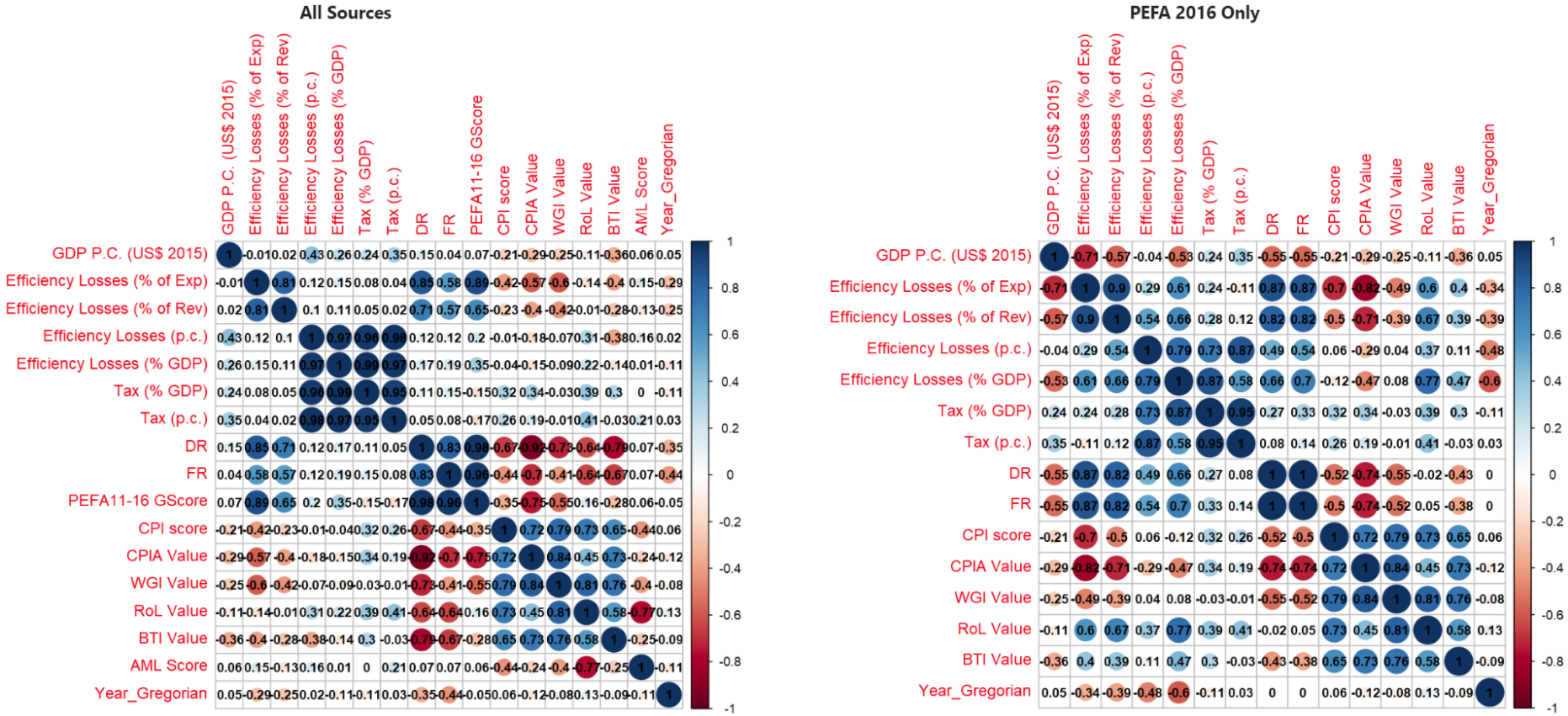
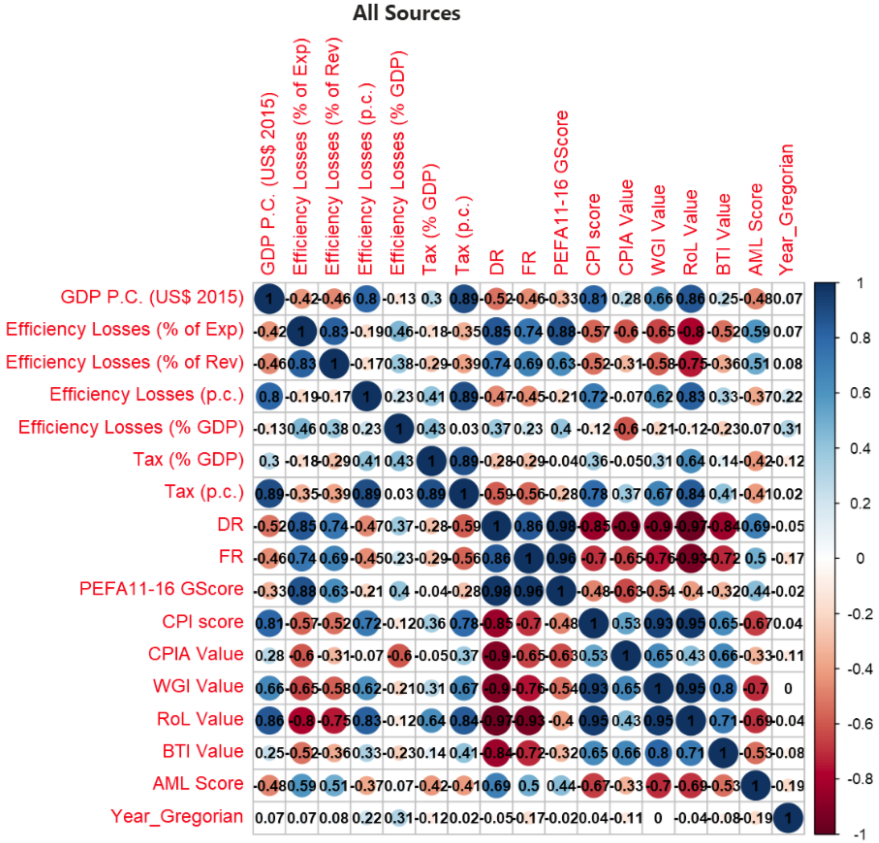


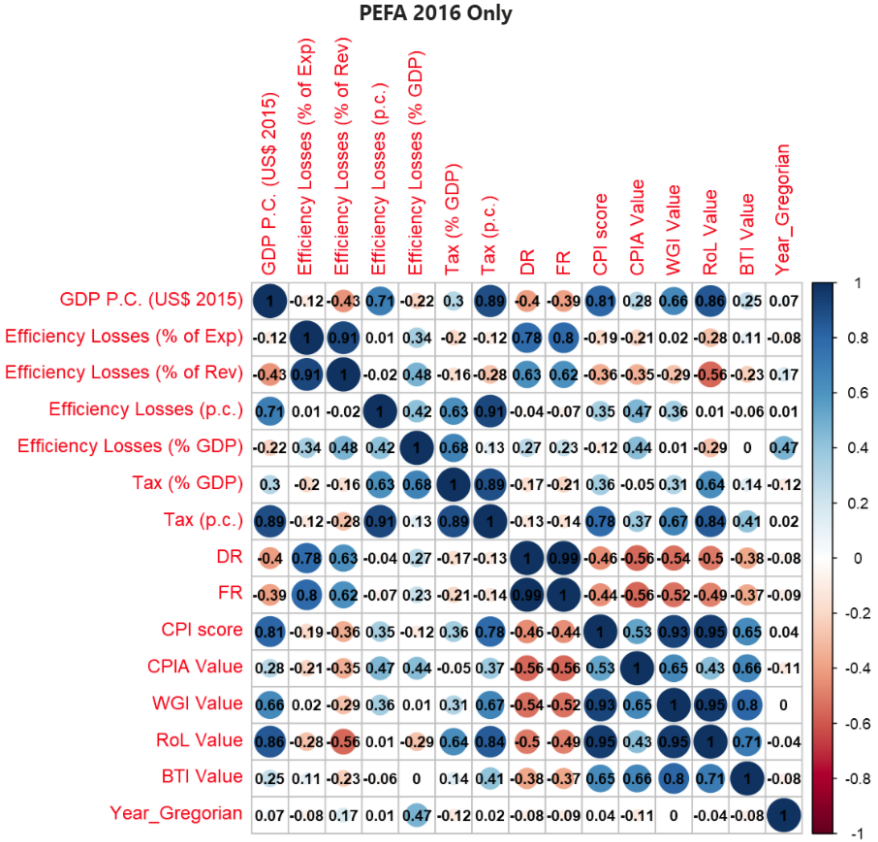
Table 35. Low Income Countries Correlation Matrices: All Sources V's PEFA 2016 Sources for DR and FR (All Years) BCG



Correlation Matrices for General Government and All Years

Table 36. All Country Correlation Matrices: All Sources V's PEFA 2016 Sources for DR and FR (All Years) GG





Attachment C: Scope for Corruption at All Points of the Follow-the-Money Cycle

Budget Systems

168. **Starting at the first corruption point of the follow-the-money cycle – the Budget – we can say that, essentially, *people pay to get their budgets and their own policy***. If the budget is more of an auction[48] where resources are allocated based on a willingness to pay – e.g. budget authorizations are for particular projects that will benefit particular vested interests – rather than through an evidence-based assessment of the effectiveness of fiscal policy options, then corruption is likely to be flourishing throughout the parliamentary and budget formulation system. Essentially, bribes are paid for promised allocations often in the form of project-based appropriations or a program of subsidies or grants for special interest groups. This equates to individuals paying to get the budget. These people, for example, can be members of parliament, ministers, contractors, officials, and their agents. The size of bribes here can be massive, representing a significant proportion of the original appropriation. There are various red flags of widespread corruption in the budget debating process within the legislature, one of which is the provision of resources to projects that have not followed due processes, like independently verified economic evaluation, fiscal impact analysis and value for money assessments.

Figure 10. Scope for Corruption in Planning and Budgeting Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

169. **The scope for corrupt budgeting is largely in the area of elites.** With weak national accountability systems there is plenty of room for three types of corruption to flourish: i) access money, where the deals and exchanges take place for well thought through public policy ideas; ii) grand theft, which includes deals and exchanges that take place for intentionally corrupt projects, programs, and/or favours; and iii) grand coverups, where exchanges are made in secret, true costs are hidden and evidence destroyed or buried. Petty theft for low ranking officials (e.g. receiving designer watches, gold, and other favours) and petty coverups are possible, though are often linked to grand corruption that creates a conducive institutional culture for corruption to operate relatively freely.

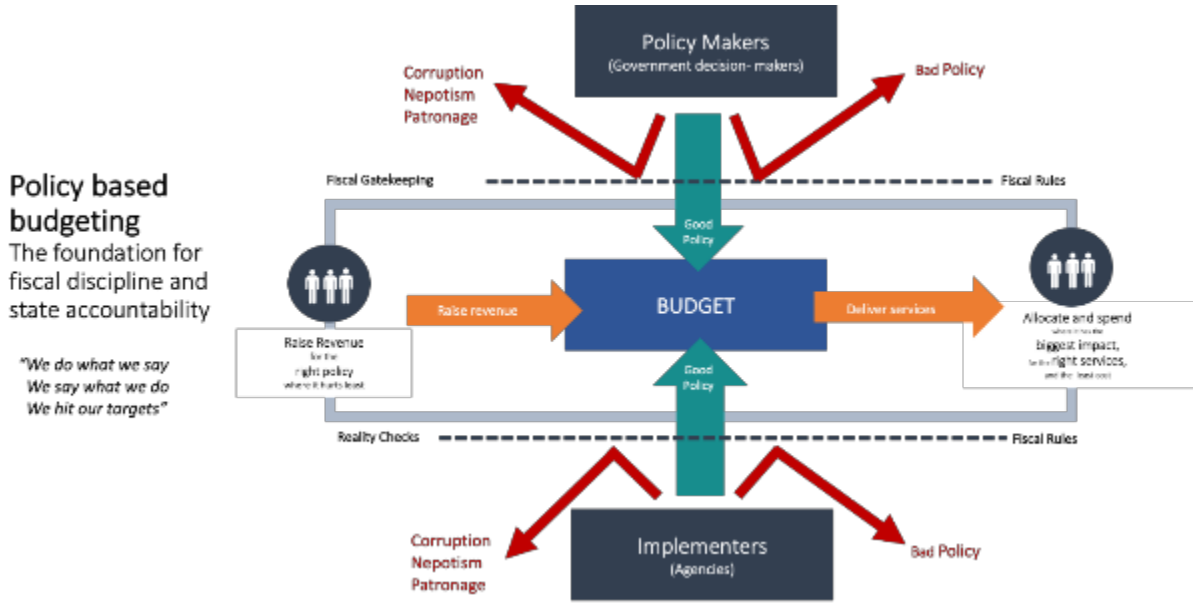
170. **Corrupt deals done in the budget have downstream impacts** throughout the whole public finance system. Examples of downstream impacts are as follows:

- ***Allotment System***: Allotments are prioritized for corrupt deals, projects or programs – rather than being used for true cash management purposes or real public interest gatekeeping functions. The allotment system in a systemically corrupt environment becomes gatekeeping system for corruption rather than prevention.
- ***Procurement System***: Grand collusion on deals allow non-competitive procurement to ensure the "preferred" supplier is awarded the contract – this can through various means, including unjustified single source selection, inside information on bidding or outright manipulation of documents.

[48] See a Development Practice Note on "The Blight of Auction-Based Budgeting: What is it and how can we deal with it?", slide deck on "Corrupt Budgeting" and "Corruption in the Budget Process".

- ***Contract Management System***: Further money can be made on the budget deals during contract management – even if the procurement process was fair – by changing the terms of the contract to one, which is far more favourable, shifting benefits to the supplier and shifting the risks to the public. This can be achieved in different ways such as through bribery and revolving doors (officials go to work for a firm then back to government).
- ***Verification and Payment***: When it comes to getting paid on the corrupt contract, rents are extracted by paying officials to verify that the good or service was delivered to satisfaction when it was not, or corrupt officials do not process the payment until a facilitation payment is made. Once this payment is made, the supplier will then be required to pay again to get paid.
- ***Audit System***: To cover the tracks of the upstream deal in the budget and the corrupt steps taken through the budget execution process, audits need to be clean, so any irregularities that get discovered are easily cleared through bribery, threats and/or informal administrative penalties.
- ***The Personnel and Payroll System***: The deals done during budget discussions in parliament, for example, can include deals for the placement of "friends and family" in key positions throughout the follow-the-money corruption cycle. These can be through advanced ghost worker, pay for position schemes, and illegal garnishee systems, where a share of employees' wages is shared amongst an elite network.
- ***Revenue System***: Deals done in parliament can flow directly into the revenue system, whether they be on tax related matters (e.g. certain forms of deregulation, direct theft and fraud, and tax evasion schemes), natural resources (e.g. unfair contracts on royalties and contract management); and other non-tax revenue (e.g. fees and fines for authorized or unauthorized reasons).
- ***Balance Sheet Management***: Deals during budget discussions can also be related to corrupt plans to influence government assets and liabilities. For example, plans can include: i) corrupt acquisition and disposal of government assets (which can be worth billions); and ii) awards of guarantees, loans and debt write-offs not in the public interest.

Figure 11. Policy-based Budgeting in the Public Interest



171. **Service delivery is impacted due to corrupted budget, including money going to the wrong programs and projects** in critical areas like health and education. Deals are done for example, on who are to win contracts for school textbooks, school meals, pharmaceuticals, new schools and new health clinics and hospitals. Corrupt deals can result in textbooks and pharmaceuticals being purchased well above market prices, and if they do actually get purchased, they never get delivered to front-line operations, often getting diverted to vested interests in the private sector (e.g. pharmacy supply, education textbooks and construction cartels) (Anon., 2007, pp. 170, 174). The impacts on citizens can be massive, including poor education and health outcomes and the consequential economic and social impacts.

172. **A 2004 report on Malawi argued that "*the budget process is a theatre that masks the real distribution and spending.*"** (Rakner, et al., 2004). When budgeting gets to this level of corruption, the government institutions for budget making and parliament are effectively engaging in one massive open conspiracy. The budget preparation process has ceased to be an efficient way to allocate public resources in the public interest and becomes the vehicle to run major corruption systems.

173. When assessing the risk of "corrupt budgeting", it is useful to review foundation principles of public finance and how budgets work in the public interest. One key principle is that for efficiency within the public sector, governments should always try to raise revenue at the lowest economic and social cost – "where it hurts the least." Considerations here include the costs of disruption to the economy and hardship on the people. For example, a high resources/oil tax might encourage mining companies' headquarters to be based elsewhere, driving down tax revenues, disrupting mining industries, reducing jobs and economic activity. Another example is instituting a high consumption tax on food, which hurts the poor more than a low wealth tax. This principle is reflected in the left side of Figure 11 above, which presents a view of policy based budgeting.

174. **The right side of the figure emphasizes a second key efficiency principle.** When providing resources to deliver services to the public. governments need to: i) allocate resources where it will have the biggest impact (allocative efficiency); ii) ensure the areas that deliver the biggest impact actually receive the resources (distributive efficiency); and iii) maximize value for money, meaning that when money does get spent on goods or services, it gets spent at the lowest cost (technical or operational efficiency). Too much spending compromises the viability of future government finances, risking bankruptcy and defaults. Too little spending may mean too many people suffer when that need not be the case. In summary, ***all "good" public sector budgets operating in the public interest are supposed to deliver efficient and effective services in a fair and sustainable way***.

Planning and Disbursement and Commitment Systems

175. **At the commitment phase, corruption works by *people paying to get access to their allotment*** - the authorized allocation. Here, the purpose of the corrupt system is to not just extract rents, but to ensure that the deals done in the budget flow through to the allotment clearance process. It is difficult for non-corrupt people to operate cleanly in such a situation, as without access to approved funds, essential services can easily be compromised. Hence, the non-corrupt are forced to comply with the corrupt system if they are interested in delivering public services. The size of bribes here can be massive, with anecdotal reports in some country contexts indicating that around 20% of the allocation could be required to secure release.

Figure 12. Scope for Corruption in Disbursement and Commitment System

	With exchange	With theft	Covering tracks

Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

176. **The scope for a corrupt commitment system is in all the six types of corruption.** Having the enormous power to authorize access to appropriations, financial plans, transfers and spending of cash can be used to help drive efficiency or it can be used corruptly. Petty kickbacks can be sought to fast track approvals, and grand corruption can occur with large scale systems to extract rents routinely at the commitment phase. This can be for both access money and grand theft types of corruption. It can be difficult to know the difference. When challenged on the reason for what appears to be grand theft commitment controls, the argument is often the system is actually being used to prevent corruption or facilitate politically sensitive but important projects. Cover up systems in the allotment phase can be petty or grand. Petty cover-ups involve keeping secrets and rudimentary efforts to avoid being caught (in sting type investigations or whistle-blower allegations). While grand coverups involve systematic manipulation of budget and/or accounting systems and the placement and improper influence of budget and accounting staff.

177. **Impacts on service delivery from corrupt commitment control** include non-authorization funds for use in legitimate health and education programs or projects in favour of corrupt operations. Non-corrupt service delivery programs and projects can often be forced to pay speed money to get access to funds to help school children and sick people.

178. **Disbursement control systems are intended to get resources to the budget holder in a timely manner for efficient and effective budget execution**. They are designed to ensure appropriations are not breached and resources are used efficiently. Budget execution is more effective when: i) the government can sufficiently consolidate and reconcile its cash position; ii) agencies are able to forecast reasonably accurately cash requirements throughout the year based on workplans and past performance; and iii) agencies receive reliable information on the availability of funds for which they can commit expenditure. Poor linkages of cash inflows, liquidity and outflows can undermine fiscal management, which can lead to, inter alia, unnecessary interest charges or supplier surcharges. A lack of predictability in the availability of funds for commitment can undermine the ability of service delivery units to plan and use resources well. This can also lead to the creation of an environment where controls are habitually by-passed establishing a deep culture of corruption.

179. **In some public finance systems, funds are released by the ministry of finance in stages** throughout the year. In others, the passing of the annual budget law grants full spending authority to all specified budget holders at the beginning of the year. Often there is a need to make in-year adjustments to allocations in the light of unanticipated events impacting cash inflows and outflows. Consequently, a transparent and systematic adjustment mechanism is required to ensure budget priorities are maintained and disbursements are sufficiently managed.

180. **Disbursement systems are also determined by the country's system of intergovernmental finance.** Rules-based systems for horizontal allocation to different sub-national administrations can allow for the full or partial release of resources allocated by the national government. Timeliness of reliable information on allocations and cash flows from the national government to subnational governments or district administrations is crucial for efficient and effective budget execution at lower levels of government and administrative units.

Procurement Systems

181. **At the procurement and contracting stage, *people pay to win contracts*,** and win using inflated prices and at very favourable terms. Such terms allow the benefits of public spending to be privatized and the risks and costs socialized – essentially borne by taxpayers and donors. Contracts can be related to standard contracts linked to projects, or other forms of contracts including those associated with the provision of subsidies to public corporations and grants to non-government organizations. Here, not only are bribery payments potentially significant but they also increase the prices paid by government, which means less money is available for genuine policy priorities. Moreover, if the corruption is so bad that the funds will be used to receive nothing in return, which is often the case, then citizens lose again.

182. **The scope for a corrupt commitment system is in all the six types of corruption**. Having the power to approve contracts is the classic form of corruption.

Table 37. Scope for Corruption in the Procurement System

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

183. **Impacts on service delivery from corrupt procurement** include high prices paid for poor quality (or no quality when goods and services are not actually provided). Fake pharmaceuticals and medical equipment and the purchase of the wrong or old textbooks can often occur. Fake pharmaceuticals can have dire consequences on people's lives and can be fatal. Collusion in the private sector or collusion between the private sector and the public sector on procurement prices and terms can be a disaster for service delivery.

184. **A poor functioning public procurement system constitutes a significant fiduciary and corruption risk and is a major source of inefficiency**, as a considerable amount of public spending generally goes through the system. A well-functioning procurement system ensures that money is used effectively and efficiently. Open competition in the award of contracts has been shown to provide a good way to achieve efficiency in acquiring assets, goods and services if collusion and corruption is minimized. The system should ensure that the use of less competitive methods is kept to a minimum. Examples of these less competitive methods can include: i) genuinely exceptional circumstances; ii) contract extensions (normally less than 15% of the contract value); iii) the standardization of equipment or spare parts; iv) proprietary equipment; v) critical items related to performance guarantees; and vi) small value purchases. At least, the legal and regulatory framework for procurement needs to be consistent with international standards. This framework also requires a well-functioning and independent complaints mechanism to fairly resolve disputes and ensure the detection and prevention of significant collusion, corruption or favouritism.

185. **The system also relies on how well other government management systems are functioning.** For example, the following systems all need to be working well in order for the procurement system to deliver good value for money: internal controls for non-salary expenditure; procurement specific oversight systems; internal and external audits; reconciliation procedures of bank and suspense account and advances; expenditure payment arrear controls; commitment controls; the degree to which national procedures are supported by donors; contract performance management systems;

verification and storage systems; and anti-corruption measures such as asset declarations and policies related to avoiding appearances of conflicts of interest.

186. **There are important upstream and downstream effects of procurement reform.** The sole focus on procurement as a major corruption driver presents a major risk of failure to combat corruption as a whole. Procurement reform may well achieve all the desired goals, including transparency in the procurement and contracting processes, but procurement reform alone is unlikely to detect or deter elite forms of corruption, both grand theft and access money. Grand theft and access money deals often originate not during the procurement process, but upstream in the budget process – where money is allocated for particular purposes. While petty procurement corruption can be reduced with procurement reform, it will have almost no impact on grand corruption, as there are many ways to get around open competition constraints (e.g. through collusion, trading in inside information, procurement appointment processes and old school intimidation). Procurement reform, even if successful in reducing non-elite corruption, can push corruption downstream in the budget cycle. If a corrupt bidder cannot get a favourable contract due to a strong procurement system, they can wait until the contract management phase and simply bribe an amendment to the contract or engage in inappropriate sub-contracting, which can occur outside the procurement oversight systems.

Contract Management Systems

187. **At the contract management stage, corruption works by *people paying to change contracts to favour them***. This can include allowing multiple levels of sub-contracting, which can operate when the system to verify goods and services are delivered on time and to standard is also broken (see verification and payment system). Forms of bribery here include paying to not enforce penalties for delays or the delivery of sub-standard goods or services, and allowing multiple levels of sub-contracting, including to unqualified firms.

Figure 13. Scope for Corruption in Contract Management Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

188. **The scope for corruption to operate in the contract management system is strong in all the six types of corruptio**n (see Figure 13 above). Changing the terms of the contracts for corrupt reasons is a significant risk when national accountability systems fail.

189. **Impacts on service delivery from corrupt contract management** include non-provision pharmaceuticals and school textbooks. Terms of contracts can be changed corruptly. For example, contract terms can be changed for the delivery of text books and pharmaceuticals to an agent rather than schools, or health clinics where they can be easily resold or provided to certain private sector suppliers free of charge (e.g. private sector pharmaceutical suppliers/retailers). Corrupt contract management in service delivery can be in the form of fraudulent compliance documentation. Multi-level sub-contracting is another key risk. Often, a single contract can be sub-contracted so many times that, for example, a $100 million road project ends up with a sub-contracted firm at the end of the chain who only has $10 million to build the road– resulting in a poor quality and incomplete road. These problems have a massive negative impact on the quality, efficiency and effectiveness of public services.

Verification and Payment Systems

190. **At the verification and payment stage, *people pay to verify that goods and services were delivered on time and to specification, and then pay again to get paid***. The classic mechanism to secure a bribe is to delay processing of approvals that invoices are ready to be paid. Approval is normally given once it is confirmed that: i) goods and services are verified as delivered on time and to specification; ii) funds are available to make the payment; and iii) all other requirements are met. For the delay tactic form of corruption to work, failures there must be failures in integrity procedures. These can include loss of separation of duties, where different people must authorize different parts of the budget cycle, though collusion can still take place even when separation of duties principles appear to be in compliance.

Figure 14. Scope for Corruption in Verification and Payment Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

191. **The scope for corruption to operate in the verification and payment system is strong in five of the six types of corruption** (see Figure 14 above). Scope for access money is theoretically less, as access money is more about ensuring an efficient policy gets implemented and payments are done upstream or elsewhere through favours. Petty corruption is commonplace at this point of the "follow the money" corruption cycle. Grand theft is a major risk and can have a huge impact. For example, verifying that a corrupt building project was built to standard (using multiple-level sub-contractors) when it was not, may result in loss of many lives when the building falls down. This is a clear example of grand theft rather than access money.

192. **Impacts on service delivery from corrupt verification and payment include non-delivery or low-quality goods and services.** These corrupt systems would ostensibly show that textbooks and pharmaceuticals were delivered and ready to be paid when they were not, or that low quality or fake drugs or textbooks were passed as legitimate. Corrupt payment systems increase costs, which reduces resources for other high priority public services.

Audit Systems

193. **At the audit stage, corruption works by *people paying for audit irregularities to be cleared***, whether those irregularities are real (i.e. covered up by the corrupt auditor) or not (i.e. made up by the corrupt auditor to extract a bribe or as punishment). Audit institutions running a broken audit system earn money through this process. The threat of investigation due to an identified irregularity can be significant, especially under politically-motivated scenarios. It commonplace that some audit institutions have clear charging policies for irregularities found in high spending or important ministries like education or defence. In these sectors, the charges to clear the irregularity can be much higher than a standard spending agency. In the context of a country that relies on aid from donors, conditionalities imposed by donors can also be counterproductive and produce perverse incentives. For example, when donors require the clearance of irregularities identified by auditors, all that happens is that the price of the clearance increases, since the cost of non-clearance has also increased.

194. **Corruption in the audit phase can take other forms.** For example, private provision of audit services for public sector accounts contains significant problems, with appearance of various conflicts

of interest. There are some red flags that may indicate an apparent conflict of interest is real and being exploited. One sign is that auditors change when a new political party comes to power. Similarly, if there is a historical link between private sector auditors and political parties, then the sign is even greater. Other red flags include the standard example, where there has been a long history of clean audits, in direct opposition to long standing public perceptions of the problems, only to be revealed later by a whistle-blower, after the government has fallen or the consequences of widespread/massive corruption becomes obvious (e.g. defaulting on loans and bankruptcy).

Figure 15. Scope for Corruption in Audit Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

195. **The scope for corruption to operate in the audit system (internal and external) is strong in all the six types of corruption** (see Figure 15).

196. **The impacts on service delivery due to corrupt audit systems are massive.** These include non-identification of real irregularities in health and education, such as any of the events described in the upstream components of the budget cycle. It also includes identification of fake irregularities intended to extract additional rents from service delivery programs and punish those who resist corrupt auditing networks. A major consequence of a corrupt audit system is that financial statements are not reliable – meaning people cannot believe what the financial statements say. This compromises systemic learning, institutional cultures and national accountability.

197. **The audit is a pure public good and is a vital part of a national accountability system**. It is associated with gaining timely information on financial management and program performance. The audit system mainly comprises of internal and external audits, although there are different forms of audit throughout the public finance system. An internal audit is essentially an early warning mechanism for heads of agency heads and ministers. Internal audits also provide important information to external auditors utilizing a risk-based approach to auditing. External audits are an essential piece of the public finance system that help create transparency and improve government effectiveness in the use of public funds. This a primary example of a pure public good and should be treated as such. Moreover, conflicts of interest and capture can emerge during audits and should be constantly addressed.

198. An internal audit is defined as “an independent, objective, assurances and consulting activity designed to add value and improve [an] organizations operations.” It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve effectiveness of risk management, control, and governance process” (IIA, 2017, p. 9). Regular and adequate feedback to management is required on the performance of internal control systems, through the internal audit function.

199. **High quality external audits are a critical component of a country’s accountability framework** (the system that holds people responsible) as it is essential for creating transparency (clarity) and efficiency in the use of public money. Key elements of a good external audit system include: i) an appropriate coverage of an audit; ii) adherence to appropriate auditing standards including the

perceived and real independence of the audit institution; iii) a focus on significant and systemic issues in reports; iv) the useful assessment of the reliability of financial statements, regularity of transactions and the functioning of internal control and procurement systems; and v) aspects of performance audit. Audits without follow up constitute a major fiduciary risk and constrain development effectiveness.

200. **Additional specific audit functions are carried out in other areas of a public finance system.** In the taxation system, it is necessary to collect and analyse information on non-compliance and other risks. Tax audits focus on key sectors and taxpayers which have the highest risk of revenue leakage. Payroll audits are undertaken to identify ghost workers, fill data gaps and identify payroll control weaknesses. Procurement audits assess issues such as i) the level of understanding among employees responsible for purchasing and the clarity of guidance on procurement procedures; ii) the vetting quality of contractors; iii) reporting, recording and publishing arrangements; iv) the quality of procurement policy coordination; and v) the compliance level of rules on segregation of duties. Revenue audits look for evidence of tax evasion and tax avoidance schemes. These are based on pre-approved compliance improvement plans, which should include timelines for audit and fraud investigations.

Personnel and Payroll Systems

201. **At the personnel and payroll stage, corruption works by *people paying for positions*** through family connections, outright bribes or cashing in old debts/favours. These pay-for-position schemes can be massive and are undetectable by fragmented audit systems. However, such schemes can be easily detected if looked for. Other schemes are systematic ghost worker systems, where salaries paid in cash, check or into bank accounts, go to people that do not actually exist (or have left the civil service or died). The networks that run these schemes have a clear interest to prevent reform efforts to successfully link payroll, personnel, and establishment control systems (for authorized public service positions). Such linked systems make it easy for IT/payroll audits to detect, deter and refer payroll and personnel fraud. Another mechanism often adopted to extract payroll rents is batching (or grouping) payroll transactions on the general ledger system, making the electronic detection of payroll fraud more difficult. Risk of payroll corruption applies for government payroll, national and international consultants, and through government and/or donor programs. Donor programs can have higher incentives for corruption due to the large amounts of money for consultant fees or poor reconciliation - weak reconciliation of tax paid on consultants' remuneration can lead to the diversion of tax payments away from tax collection accounts.

Figure 16. Scope for Corruption in Planning and Budgeting Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

202. **The scope for corruption to operate in the personnel and payroll system is strong in all six types of corruption** (see Figure 16). Access money will put competent friends and family members in positions of power, whereas grand theft will put place both incompetent or competent friends and family. Grand theft in payroll involves major networks for garnishing and pay-for-position schemes. Coverups involve the manipulation of data and resistance to payroll and personnel systems and the

adoption of credible systems for merit-based recruitment. There are major risks in both government and donor programs.

203. **Impacts on service delivery from corrupt personnel and payroll (and consultant payment) systems are also massive.** Ghost teacher networks increase costs in the education sector. Similarly, ghost networks of doctors, nurses and administrators increase costs in the health sector. Falsified degrees, references and work histories allow incompetent and criminal elements into the public service. Corrupt ghost worker pay-for-position, and illegal garnishee schemes increase the number of unqualified, incompetent and corrupt teachers, principals, doctors, nurses, specialists and administrators in service sectors. The results are not just corrupt institutional cultures but also severely impacted education and health outcomes for the nation.

204. **Since the wage bill is one of the largest items of government expenditure, effective payroll controls are critical to minimize corruption risks and increase economic efficiency**. Good payroll control is underpinned by a system that routinely reconciles at least three lists: i) the payroll database (or the "nominal roll"); ii) the establishment list, which provides the list of government approved positions (that can include permanent, part-time and temporary employees49; and iii) individual personal records. Sometimes, links to a fourth list is required, when a civil service agency has a list of vetted positions in addition to the budget approved establishment list. A fifth and sixth list is also required if the accounting system batches payroll transactions - the fifth being the batching done on the accounting system and sixth list being the list of the un-batching done at the bank.

205. **A human resource database is the key link between establishment lists and the payroll system.** The establishment list is used for budget control of the number and cost of workers. The payroll system is used for the control of payments. Human resource databases maintain records of entitlements for each and every employee (e.g. salary levels, service, hire dates, termination dates, leave and allowances). The system for reconciliation and amendments is critical: changes to entitlements should be processed in a timely manner in readiness for the next pay period. Paying workers correctly and on time is important for any employer. Reconciliation between the personnel system and the payroll systems should happen monthly. Regular payroll audits should occur to identify ghost workers, fill data gaps and identify control weaknesses. Reconciliation of batched payroll transactions should also occur routinely.

206. **Weak payroll controls and a lack of efficient and effective social safety nets often lead to a blow out of the wage bill** and a squeeze on funds available for the purchase of goods and services, which is critical for effective service delivery.

Accounting, Recording and Reporting Systems

207. At the accounting stage, people pay to facilitate movement through the accounting systems and to cover their tracks of malfeasance. "Greasing the wheels" in this context is ensuring the processors and approvers all get paid their "fair share." One of the basic systems to cover fraud is through the misuse or non-compliance of bank reconciliation systems. Very simply, bank reconciliations check the change in the bank balance with the change in the balance in the accounting books for a given period. Even if bank reconciliations are done, which is often not the case in certain contexts, it is still very easy to fake bank reconciliations. That said, it is not easy to fake them convincingly if there is proper scrutiny.

[49] Casual labor, individual consultants and contractors can also be included in the establishment list, though reconciliation is with line item expenditure reports and bank accounts rather than through payroll and personnel lists.

Figure 17. Scope for Corruption in Accounting, Recording and Reporting Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

208. **The scope for corruption to operate in the contract management system is strong in five of the six types of corruption** (see Figure 17). Scope for access money is theoretically less, as access money is more about ensuring an efficient policy gets implemented, which requires accurate accounting information. Petty corruption is commonplace in this point of the "follow the money" corruption cycle. Grand theft is also a major risk and can have a huge impact. For example, bank fraud can easily occur in systems with weak accounting controls. This is an example of grand theft rather than access money.

209. **Impacts on service delivery from corrupt accounting, recording and reporting systems include a lack of transparency of real service delivery operations** – both financial and non-financial. In this area, the tracks of corruption during service delivery can be covered up, making it difficult to detect, deter and refer people in corrupt networks for successful prosecution.

210. **Effective management reporting requires the public finance system to produce reliable financial information** to enable useful reporting, effective management and good decision-making. Timely and regular reconciliation the government's accounting data with its bank account data and advances (e.g. to suppliers and employees) and suspense accounts (for un-identifiable expenditures such as trust accounts) is a critical control function, as it is the foundation for good quality information and financial forensics.[50] A resource-rich country that receives significant levels of aid and has elements of decentralized authority is generally expected to use six types of suspense and advance accounts: i) contract advances; ii) letters of credit iii) bid or performance bonds; iv) petty cash; v) donor trust accounts; and vi) subnational trust accounts.

211. **Timely provision of cash or in-kind resources to service delivery units (schools, health clinics) is a key indicator that the public accountability system is functioning well**. However, for this to occur, reliable information about receipt of resources by service units is needed, which may not be present in budget documentation. Service delivery units, being furthest in the resource allocation chain, are usually the ones to suffer the most when: i) resources fall short of budget estimates: ii) higher level organizational units re-direct resources to other purposes; and/or iii) there are significant delays in flows of cash or in-kind resources to the unit. Routine data collection and accounting systems or special public expenditure tracking surveys are used to provide this information.

[50] Forensic accounting or financial forensics is the specialty practice area of accountancy that describes engagements that result from actual or anticipated disputes or litigation. "Forensic" means "suitable for use in a court of law," and it is to that standard and potential outcome that forensic accountants generally have to work. Forensic accountants, also referred to as forensic auditors or investigative auditors, often give expert evidence at the eventual trial. All large accounting firms, as well as many medium-sized and boutique firms, have specialist forensic accounting departments. Forensic accountants may be involved in recovering proceeds of crime and in relation to confiscation proceedings concerning actual or assumed proceeds of crime or money laundering. Forensic accountants utilize an understanding of economic theories, business information, financial reporting systems, accounting and auditing standards and procedures, data management and electronic discovery, evidence gathering and investigative techniques, and litigation processes and procedures to perform their work. Forensic accountants are also increasingly playing more proactive risk reduction roles by designing and performing extended procedures as part of the statutory audit, acting as advisers to audit committees, fraud deterrence engagements, and assisting in investment analyst research.

Box: 5. Six Dimensions to Budgeting and Accounting Classifications

1. When?

-*Time classification* to identify when the transaction is to be performed. Sub-dimensions can include time tracking of lapsing and non-lapsing programs and projects in a multi-year fiscal framework.

2. Who?

- *Administrative* classification (e.g. ministries and departments) that identifies who is responsible for making commitments or performing work on behalf of some other entity, thereby improving budget holders' accountability.

- *Payer and Supplier* classification to identify common revenue sources, contractors and supply chains elements.

3. What?

- *Economic and line item/object* classification to identify what is being bought (e.g. wages, goods, assets) or what type of money is being received (e.g. taxes or resource royalties). This is used for statistical reporting and fiscal control.

4. Why?

- *Functional* classification to identify the purpose for which resources are be allocated and spent (e.g. for health or education services). This facilitates historical and policy analysis and enables international comparisons.

- *Program*, sub-program and activity classification, to improve transparency and performance accountability for policy formulation, outputs and outcomes.

- *Poverty reducing expenditure or fiscal priority* classification (if different to functional and program classification) to improve linkages between a Government's overall policy framework.

5. Where?

- *Location* classification to identify where money is to be spent or where the benefits of spending are intended to be realized.

6. How?

- *Fund* classification to track inflows and outflows of funds held for particular purposes (e.g. annual, special and multi-year appropriations, hypothecated revenues and donor trust funds).

212. **Accounting, reporting, and recording systems should produce comprehensive reports on all aspects of the budget.** Timely reporting against the budget is essential for budget management and keeping the budget on track. Reporting of expenditure against the budget is required at both the commitment and payment stages and depends on the type of accounting model being used. Reliable information from departments and spending units should be used to produce national consolidated reports. Generally, transfers to sub-national governments should be treated as a transfer and eliminated in a consolidated version of the accounts.

213. **A well-functioning accounting, recording and reporting system should be able to produce reliable and understandable year-end financial statements in a timely manner**. Financial statements show how well public finance systems are performing. It is important that financial statements comply with accounting standards for the statements to be understandable and comparable.

214. **Other related accounting, recording and reporting systems.** Systems need to be able to produce information on the status of arrears and unpaid claims. Regulations or widely accepted practices may specify when an unpaid claim becomes an arrear.

215. **The classification system is the heart of the accounting, recording and reporting system** as the tracking of budget spending in multiple dimensions is needed for informed decision making and transparent and accountable government (see Box: 5).

Revenue Systems

216. **At the revenue collection stage, people pay to facilitate favourable treatments of what they owe or what they are paying for** (including for be illegitimate/illegal goods or services). People pay for reduced tax assessments, reduced customs valuations at borders, and exemptions for extractive industry payments such as royalties and penalties. People also pay for exemptions for other authorised fees and fines collectable throughout the system. They can also pay unauthorised fees and fines for unauthorised goods, services, and misdemeanours. This can be done in different ways from direct bribes to indirect bribes. Indirect bribes work, for example, through the political party donor lobbyist system, where funds are provided to a party, with the expectation that the return will be in the form of tax concessions, exemptions, deregulation, or other favours (state capture). The purpose of tax expenditure budgets and reports (disclosures on the value of tax breaks offered and provided) is to standardize the system to make such operations somewhat more transparent.

217. **People can also pay to ensure donor grants go to where they have vested interests and/or where oversight is weak, and reporting is opaque**. For example, the reconciliation of donor grants disbursed by the donor, with donor grants received by the recipient and then with the expenditures made by the recipient, should be commonplace but are rare in practice, even though the data is readily available.

218. **This is the area where State Capture is found in the "follow-the-money corruption cycle", where there is exchange and theft (grand theft).** This is a form of illicit non-tax revenue collected through the powers of government. Hellman and Kaufmann define state capture "as the efforts of individuals or firms to shape the formation of laws, policies, and regulations of the state to their own advantage by providing illicit private gains to public officials. The key distinction in this typology is not the size of the bribe nor the level in the political system where the bribery occurs, but rather whether the corruption is directed to distort the intended implementation of laws or to shape the formation of the laws themselves." (Hellman & Kaufmann, 2018).

Figure 18. Scope for Corruption in Revenue Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

219. **The scope for corruption to operate in the revenue system is strong in all of the six types of corruption** (see Figure 18). The revenue system is comprised of the tax and non-tax systems. The non-tax system can include aid grants. Access money can be raised in the revenue system along with standard approaches to grand theft. Petty corruption can occur throughout the system.

220. **Impacts on service delivery from corrupt revenue systems** include reduced resources for service delivery in terms of general revenue systems (non-earmarked revenue allocated for service delivery), hypothecated (earmarked) revenues and service delivery generated revenues. Corruption in tax systems (general revenue) for example reduce resources indirectly available for service delivery. Corruption in hypothecated revenues (e.g. social insurance or retained user charges), also results in

less resources directly available for service delivery. Corruption in service delivery user charges also means higher prices paid by citizens than they should be paying. Citizens would be paying higher prices for correct drugs and services but also paying for fake pharmaceuticals and services. Schools would also have to charge more for basic education needs, and health clinics charge for free services. Corruption in service delivery user charges also reduces the appearance of government integrity in the eyes of citizens.

221. **Effects of state capture that result in biased laws, policies or regulations can be massive,** reducing revenues, increasing pollution, compromising public services etc. State capture is different to Aid Capture, which is more about diverting aid for corrupt purposes.

222. **Corruption risks are inherent in taxation systems** as they are almost always a major source of government revenue, which needs to be allocated efficiently to the highest priority expenditures. Failure to collect all eligible taxes is a development risk in that all resources are not available for program allocations. Risk is primarily around ensuring all taxes collected actually reach consolidated revenues. Development risk is associated with the accountability benefits that a functional tax system provides (citizen driven accountability is more effective when there is a fair tax system).

223. **Procedures to mitigate risks** include: i) clear, complete and accessible guidance on tax liabilities; ii) a well-functioning appeals mechanism; iii) an effective tax payer registration system; iv) an effective tax assessment system; v) an effective system to transfer collected tax to the treasury; and vi) functional tax reconciliation arrangements.

224. **Non-tax revenue covers natural resource revenues, user charges and fees and fines (and aid grants).** Transparent and effective procedures for the administration and collection of non-tax revenues provides numerous benefits by ensuring: i) all public resources are available for programming in accordance with government priorities; ii) citizens have some feeling of ownership of mineral wealth in order to counter any loss of accountability (if personal income and sales tax revenues are a relatively small source of government revenue); and iii) inequities caused by excessive formal or informal fees are minimized.

225. **User charges, either formal or informal, are an important source of revenues and a key component for accountable governance and have a profound impact on perceptions of integrity** of the system. For example, before increasing tax levels or taxing powers, it is often required to ensure public goods and services that can be charged for are done so fairly (i.e. a fair service for a fair price).

226. **It has been argued that it is difficult to increase taxes when key chargeable services such as those delivered by utilities are not provided reliably**. However, there could be a "chicken or egg" phenomenon, in that it may be very difficult to improve service, when charges are not levied properly. While levels of non-tax revenue can be immaterial from an aggregate perspective, they can be most significant to certain spending units including health, education ministries, municipalities and utilities.

227. **Risks to companies and investors centre on political and reputational concerns.** Political instability caused by opaque public finance arrangements is a clear threat to investments. In industries where investments are capital intensive, perceptions of long-term stability are crucial for negotiating favourable terms. Transparent arrangements for administration of non-tax revenues can support competition and help demonstrate the benefits and contributions that a company provides to a country.

228. **A major risk will arise if non-tax revenue arrangements are opaque.** Poor access by the public to accurate information on these revenues that governments manage on behalf of citizens can cause governments to be far less accountable. This is the "common pool problem" where costs are borne by the many, but the benefits are enjoyed by a few. The problem can emerge when there is uncertainty over property rights.

Balance Sheet Management Systems

229. **During balance sheet management phases, *people pay to secure favourable treatment of assets and liabilities*.** People pay to get access to cash, for example at the central bank once an authority to pay has been issued. People pay to have favourable access to non-financial assets, like free rent of government property, free use or transfer of ownership of public property (e.g. cars, buildings, equipment) and free clearance of prepayments and advances (payments made in advance of a goods and service actually being delivered).

230. **People pay for favourable treatment of liabilities**, including favourable borrowing terms, free access to government guarantees, and free access to clearance or non-recognition of expenditure arrears. Some of these schemes can be massive in a single transaction. For example, the transfer of billion-dollar assets for essentially nothing can occur easily in the absence of strong systems for accountability. This can be done through privatization mechanisms, public private partnership systems, simple procurement contracting, or very simple asset write-off and transfer systems.

Figure 19. Scope for Corruption in Balance Sheet Management Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

231. **The scope for corruption to operate in the balance sheet management system is strong in all of the six types of corruption** (see Figure 19).

232. **Impacts on service delivery from corrupt balance sheet management systems** include: i) school or health facility property being illegally rented out for other purposes; ii) inventory stocks of textbooks, learning materials, pharmaceuticals and medical equipment all being manipulated; iii) expenditure and revenue arrears being systematically hidden; iv) loans handed out against policy or illegally written off; and v) corrupt disposal of education and health facilities and equipment.

Other Accountability Systems

233. **This section reviews other important components of national accountability systems**. Six areas are covered as follows: i) Anti-Corruption System; ii) Gender Responsive Public Finance System; iii) Banking Supervision and Anti-Money Laundering System; iv) Statistics System; v) Grant Funding System; vi) Communications System; and vi) the sub-national fiscal financing system.

Scope for Corruption in Anti-Corruption Systems

234. **In the anti-corruption system, people *pay to clear allegations, investigations, prosecutions, findings, or sentences***. People also pay to hide and destroy evidence and secure leniency. Corruption in the anti-corruption system can be widespread due to the power it has to detect and deter corruption. This power means there is a high willingness to pay to deal with anti-corruption efforts. Other corrupt activities in the anti-corruption system include placements of corrupt or incompetent

people in such positions. Sometimes the placements can be put in unintentionally, where people who appear clean are in fact not. Proper reference and past performance checking, however, can usually detect whether a person is capable and clean, and is not just good at presenting as capable and clean.

Figure 20. Scope for Corruption in Anti-Corruption Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

235. The scope for corruption to operate in the anti-corruption system is primarily in the covering tracks form of corruption.

236. **Impacts on service delivery from corrupt anti-corruption systems is catastrophic.** Serious allegations in service delivery are not acted upon or covered up. All the other national accountability systems built to detect, deter and refer corruption in the service delivery sector fail, establishing the foundations for a culture of deep and wide corruption.

Gender Responsive Public Finance Systems

237. **In the gender responsive public finance system, people *pay to stop reform or make it appear that reform is occurring when it is not*.** People also pay to hide and destroy evidence of gender problems. Other corrupt activities in the Gender Responsive Public Finance System include placements of corrupt or incompetent people.

Figure 21. Scope for Corruption in Gender Responsive Public Finance Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

238. **The scope for corruption to operate in the Gender Responsive Public Finance system is probably limited to covering tracks** of corruption and some speed money (see Figure 21). This would be seen in corrupt efforts to stall adoption of gender responsive reforms and stronger systems. Covering tracks here can involve manipulation of data to look like there is progress on gender issues when there is none. Like in other areas, exchange can involve appointments of people to the gender area that have the opposite agenda (e.g. to thwart gender reforms). Theft is also possible in gender programs as is speed money and access money. Lower quality and corrupt staff are other high-risk areas.

239. **Impacts on service delivery from corrupt gender responsive public finance** include poor quality or corrupt staffing from not hiring the best people for the jobs. Consequences include worse policy and decision making, inadequate systems of accountability and control, and lack of progress on gender outcomes, involving loss of major economic returns over the short, medium and long term.

240. **Gender responsive public finance contributes to national accountability in many important ways**, the most obvious being that it ensures that half the population have a voice during fiscal decision making. Box: 6 provides a summary of what gender responsive public finance covers and why it's important.

Box: 6. What is Gender Responsive Public Finance?

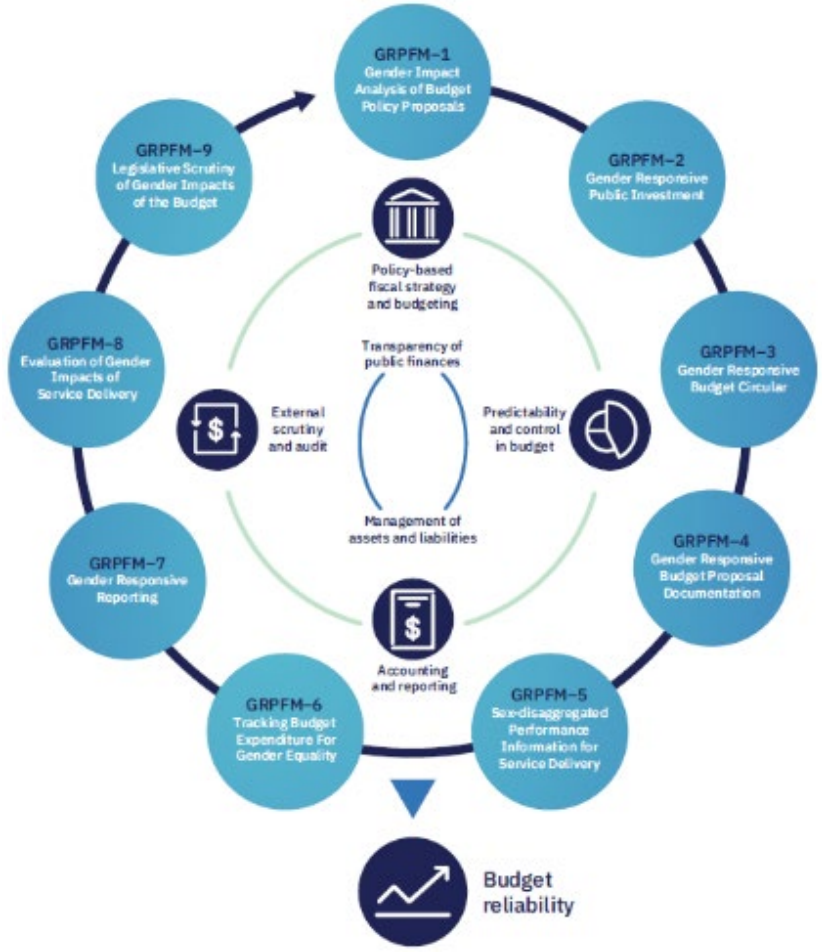
Gender responsive public finance:

* **Formulates the budget** in a gender responsive way
* **Links gender responsive policies** with adequate budgetary funds
* **Executes the budget** in a way that benefits women and men, girls and boys equitably
* **Monitors the impacts** of expenditure and revenue raising from a gender perspective

Gender responsive public finance is grounded in the understanding that fiscal policy decisions and the public finance systems that underpin them can affect the economic and social outcomes for men and women. Improvements in gender equality are considered integral to a country's development objectives, which—like other development objectives (e.g. reducing poverty, addressing social inequalities)—requires adequate budget allocations and a strong PFM system to ensure that those allocations are made and implemented as planned.

Source: Drawn from (PEFA, 2020)

Figure 22. Gender Responsive Public Finance Assessment Framework



Source: (PEFA, 2020)

241. **The new PEFA framework for gender responsive public finance was adopted to help assess the quality of gender-responsive systems**. The framework is similar to the approach used in Afghanistan's 2015 Fiduciary Risk Assessment but is broader in scope. In January 2020, the PEFA secretariat launched a new supplementary framework for assessing gender responsive public financial

management (GRPFM). This framework was used given it has been approved and tested by the PEFA secretariat.

242. **The new framework integrates 9 gender performance indicators** (split in to 12 performance dimensions) that fit within the 7 pillars of the standard 2016 PEFA framework. The relationship can be seen at Figure 22 above.

Banking Supervision and Anti-Money Laundering Systems

243. **In the banking supervision and anti-money laundering system, people *pay to clear allegations, investigations, referrals, and findings***. People also pay to hide and destroy evidence. Corruption in the Banking Supervision and Anti-Money Laundering System can be widespread due to the power it has to detect grand corruption. This power means there is a high willingness to pay. Other corrupt activities in the banking supervision and anti-money laundering system include placements of corrupt or incompetent people in positions.

Figure 23. Scope for Corruption in Banking Supervision and AML Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

244. **The scope for corruption to operate in the banking supervision and anti-money laundering system is large** in all six forms of corruption (see Figure 23). Grand theft and grand coverups are the major at-risk areas. Petty theft and speed money are also equally possible.

245. **Impacts on service delivery from corrupt banking and supervision and anti-money laundering systems** include loss of resources for health and education due to bank bailouts, grand theft and widespread petty theft. It also increases sovereign risk ratings, making it harder for governments to borrow in the capital markets.

246. **Banking supervision is important for financial accountability for six main reasons**, including to: i) Protect public savings; ii) Prevent build-up of problem assets; iii) Limit financing of speculative activities; iv) Ensure stability of the financial system; v) Prevent the worst consequences of bank failures; and vi) Limit government's potential liabilities (Polizatto, 2002). From a fiduciary risk perspective, poor banking supervision standards mean that government financial assets are more likely to be lost or not properly accounted for and significantly increases fiscal risks associated with bank bailouts.

Statistics Systems

247. **In the statistics system, people *pay to hide evidence***. Since statistics has the power to detect grand corruption, corrupt officials and private sector players are likely pay people in statistics areas to hide, slow down or manipulate data. As in other areas where evidence of corruption can emerge, corrupt activities can include placements of corrupt or incompetent people in leadership positions.

Figure 24. Scope for Corruption in Statistics Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups

Elites	Access money	Grand theft	Grand coverups

248. **The scope for corruption to operate in the statistics system is primarily grand cover-ups and speed money** (see Figure 24). Statistics is often used to mislead the private sector and citizens to make it seem the government is producing good outcomes when it is not – especially when the cause of poor outcomes is corruption and mismanagement. Statistics can be purposively used to hide evidence of corruption including in service delivery and central agencies. Speed money in statistics can be often paid to speed up surveys and statistical reporting.

249. **Impacts on service delivery from corrupt statistics systems** include poor decision-making due to bad data. When service delivery related performance information is compromised through corruption, the whole system becomes more inefficient and less effective, delivering very poor value for money.

250. **Capacity to deliver timely, complete and well collected statistics is important in national accountability systems** for three reasons: i) to ensure government can be held to account for performance against its fiscal policies – in particular that funds are being used for intended purposes; ii) to help inform government when setting macro-economic, monetary and fiscal/social policies – especially within a medium term context; and iii) to establish good levels of transparency in government operations.

251. **Statistical capacity is another driver of national accountability**, especially in relation to budgeting given the importance of statistics in policy formation and performance review. Afghanistan has benefited from regular statistical capacity assessments, which reveal that Afghanistan increased its overall statistical capacity.

Grant Funding Systems

252. **In the grant funding system, people *pay to divert funds to vested interest*** undermining the cost effectiveness of aid interventions. All the same types of corruption that occur in government can occur in grant funding systems.

Figure 25. Scope for Corruption in Grant Funding Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

253. **The scope for corruption in the grant funding system is large in all six forms of corruption** (see Figure 25) and can be considered a form of "Aid Capture" (as distinct to State Capture). Grand theft and grand coverups are the major at-risk areas. Petty theft, petty cover-ups and speed money are also equally possible.

254. A World Bank paper found evidence of the aid capture phenomenon (World Bank, 2020)**:**

> *"Aid disbursements to highly aid-dependent countries coincide with sharp increases in bank deposits in offshore financial centres known for bank secrecy and private wealth management, but not in other financial centres … (and that) … the implied*

leakage rate (to safe havens) is around 7.5 percent[51] for the average highly aid-dependent country …. *The findings are consistent with aid capture in the most aid-dependent countries. … Aid capture by ruling politicians, bureaucrats and their cronies is consistent with the totality of observed patterns: it can explain why aid does not trigger flows to non-havens, why the capital outflows occur precisely in the same quarter as the aid inflows and why the estimated effects are larger for more corrupt countries.".*

255. **Impacts on service delivery from corrupt grant management systems** include all the problems of fragmented service delivery. Misallocation of resources, duplication of goods and services, and general inefficiency and poor value for money are common consequences. Aid interventions will deliver very poor levels of cost-effectiveness in terms of serviced delivery inputs, outputs and outcomes. These can be revealed in the short, medium and long term. Loss of trust in the motivations of donors can be another consequence that can have a material impact on service delivery. For example, donor-administered whistle-blower and investigation mechanisms can easily fail to garner the trust of citizens, clean private sector firms, and non-corrupt officials.

Communications Systems

256. **The scope for corruption to operate in the communications system is large in all six forms of corruption** (see Figure 26). Grand theft and grand coverups are the major at-risk areas as communications can be used to deceive. Petty theft and speed money are also possible but of lesser risk due to the lack of access to things of value other than manipulation of information.

Figure 26. Scope for Corruption in Communications Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

Sub-national Fiscal Financing Systems

257. **In sub-national fiscal financing systems**, ***people pay to divert funds to vested interests in particular regions***, undermining the fair allocation of resources amongst the different regions of a country. People can pay to get national projects and programs approved for particular regions (access money if projects are efficient and effective, or grand theft if the projects are corrupt). People can pay to influence funding allocation formulas either by adjusting weightings and/or via manipulation of underlying data and data sources. Corruption in the sub-national fiscal financing system can indicate a major problem of sectarianism (Salti & Chaaban, 2010).

Figure 27. Scope for Corruption in Sub-national Fiscal Financing (Granting) Systems

	With exchange	With theft	Covering tracks
Non-elites	Speed money	Petty theft	Petty coverups
Elites	Access money	Grand theft	Grand coverups

[51] This amount is for leakages that go to safe havens. It excludes leakages that are used to run corruption networks, pay bribes and buy gold for example. 15% was found in one country.

258. **The scope for corruption to operate in the sub-national fiscal financing system is significant in all six forms of corruption** (see Figure 27). Grand theft and grand coverups are the major at-risk areas. Petty theft and speed money are also likely. Access money can be significant in efforts to get well-thought through social and economic projects implemented in sub-national regions on time and to budget.

Attachment D: Methodology for Quantifying Development and Fiduciary Risks

259. **This ANS has been prepared in line with the Australian Government's Guidance**. In completing the assessment AFI has employed a mix of quantitative and qualitative methods. The following provides and overview of the quantitative and qualitative methods used in this assessment and how risk ratings are derived.

Quantitative Methods

260. **AFI has developed an extensive array of analytical tools and methods to bring a strong quantitative framework to the assessment**. Using our Development and Fiduciary Risk Analytics (DFRA) approach the assessment applies techniques developed in a wide range of countries to the Public Expenditure and Financial Accountability (PEFA) framework, Open Budget Index (OBI), Corruption Perceptions Index (CPI), Country Policy and Institutional Assessments (CPIA) Statistical Capacity Index (SCI), Anti-Money Laundering and others. The assessment also utilizes additional performance metrics specifically to drill down into some key areas of risk – in areas like contract management, anti-corruption, and fiscal space competencies. This allows the ANS to include quantitative trend analysis of changes in indicators over time and to compare countries, and to help understand drivers of successful reform. This has been made possible by bringing multiple datasets together under a risk framework. It uses various methods including standardisation of different classification and quality rating systems using various bridging systems (e.g., from the old 2008/11 PEFA framework to the current 2016 framework). AFI's DFRA dataset has been updated for additional data collected during the ANS, allowing for automatic calculations of key system performance indicators. This means the assessment team has updated any existing analysis for the latest available data ensuring that the resulting risk assessment is as current as it can be.

Qualitative Methods

261. **National systems and the application of PFM are inherently political processes**. The annual budget, the publishing of national plans and the reporting of performance by the Government against its targets all attract scrutiny from a wide range of stakeholders and have political, economic, and social impacts. Quantitative analysis does not capture the nuances and human characteristics of national systems. It is vital that the ANS includes views from those who operate, manage, and develop all aspects of the national systems. We have conducted discussions with relevant stakeholders across the GoS and with key international partners.

262. The interviews serve multiple purposes:

- ***They allow us to test the evidence*** on what the data and quantitative analysis is saying.
- ***They allow us to triangulate reality*** on what we see, and what we are being told. How central ministries view a process and how a line ministry or local unit view it can be quite different.
- ***They allow us to gauge business practices*** not simply the way the national systems are constructed, but how they operate in practice.
- ***They help us to understand where risk is*** a function of systemic weaknesses or institutional capacity issues.

Box: 7. Defining Key Risks

Development risk is the risk that government/agency resources will not achieve results – particularly economic development objectives and long-term goals such as economic growth and poverty reduction - and enabling objectives such as reform and capacity development. Economic development risk is influenced by the level of administrative burden placed on governments /agencies by development partners as well as compliance costs associated with complex partner procedures that do not match technical capacities of individuals and institutions. There is a view that capacity development and reform can be better supported by appropriate use of various country system components. The idea is centred on the principle that "to improve a system you should use the system". Perceptions of economic development risk can be influenced by expert opinion or an evidence-based quantification of development risk. Development Risk Indexes (DRI) are often set between 0 and 1. Development Assurance Index (DAI) a similar concept, representing the likelihood that the development objective will be met (i.e. DAI=1-DRI).

Fiduciary risk is the risk that aid or government funds: i) are used for unauthorized purposes; ii) do not achieve value for money; or iii) are not properly accounted for. The realization of fiduciary risk can be due to a variety of factors, including lack of capacity; inappropriate procedures and systems; weak competencies or knowledge; bureaucratic inefficiency; active corruption; and/or weak or absent laws and enforcement. Perceptions of fiduciary risk can be influenced by expert opinion or an evidence-based quantification of fiduciary risk. Fiduciary Risk Indexes (FRI) are often set between 0 and 1. Fiduciary Assurance Index (FAI) a similar concept, representing the likelihood that the fiduciary controls work (i.e. FAI=1-FRI).

Sovereign risk is the risk that a government loan will not be repaid in full or on time. It is a lending risk and is assessed differently through fiscal and debt sustainability analysis and other tools. Credit rating agencies constantly form and modify opinions on a government's credit worthiness based on evidence (e.g., Article IV consultation reports, World Bank and US Treasury reviews and publications and Government economic and fiscal reports), media reports, and information gained through their network of sources and their own analysis. Higher assessed risks by these agencies may result in an increase to the cost of borrowing for the country, the extent to which is subject to other factors, including market reactions, though it is more likely if loans are directly linked to credit rating. Management of sovereign, municipal and other issuer credit risks are handled differently to fiduciary risk management, though good management of such risks can mitigate both.

Reputation risk is the risk that perceptions of poor management of funds or poor levels of development effectiveness (whether real or otherwise) will have adverse consequences. Reputation risk applies to development partners, governments, and agencies. In terms of government level development partners, adverse consequences include: i) deterioration in the level of support for development assistance by taxpayers, central agencies, members of parliament, ministers, and cabinet; ii) criticism of development assistance management; and iii) deterioration in relations with a partner country and international finance institutions. In terms of country governments, reputation risk is relevant as they are ultimately accountable to their citizens for the efficient and effective use of all state resources. Reputation risk can influence issuer credit risk and perceptions of fiduciary and development risk. For agencies, adverse consequences include loss of autonomy and additional administrative burdens arising from heightened external scrutiny and criticisms at multiple levels.

Political Risk (or geopolitical risk) generally refers to difficulties agencies, firms and/or governments may face because of political decisions or "any political change that alters the expected outcome and value of a given economic action by changing the probability of achieving business objectives." Political risks are hard to quantify due to limited sample sizes or case studies when discussing an individual state, though certain risk rating agencies attempt this.

Fragmentation Risk is the risk of core accountability systems being de-integrated**.** There are three types of fragmentation of national accountability systems that are of interest: i) fragmentation of budgets and resource allocation systems; ii) fragmentation in accounting and classification systems; and iii) fragmentation in systems for scrutiny. These three levels of fragmentation results in fragmented accountability, which unambiguously increase development risks and ultimately increase fiduciary risks. Fragmentation risk increases in the presence of significant flows of aid and/or reconstruction and recovery funds. If aid and recovery funds approach absorptive capacity limits, fragmentation risk increases significantly. The general rule of thumb for absorptive capacity limit is between 10% and 20% of GDP.

Drawn from (Shand, 2005; DiPiazza & Bremmer, 2006)

How are Risk Ratings Derived?

263. **There are different ways to think about risks** including fiduciary risks, development risks, political risks, and reputational risks (see Box: 7). Similarly, there are many ways to measure and quantify systemic fiduciary and economic development risks because of weaknesses in financial accountability systems. One way is a simple expert opinion of PEFA results. Another way is to weigh PEFA scores for fiduciary risk factors, in recognition that some PEFA indicators are more important for fiduciary risk than others (e.g., bank reconciliations are more important for fiduciary risk compared to medium term budgeting, which is more important for development risk). A third approach takes a subset of PEFA indicators as a proxy for fiduciary risks – this approach is the PEFA-10 method (Hashim, 2015), based on the idea of "basics first in accounting control". A fourth approach first used in 2009 is the PEFA-plus approach, which expands the PEFA indicator set and applies fiduciary risk factors to quantify risk scores. This methodology adopts the standard risk quantification approach where: Risk Score = Score for System Performance (e.g., PEFA score) x Risk Factor (Development or Fiduciary).

264. **For this ANS, the diagnostic combines information from PEFA, CPIA, CPI, SCI, SPI, AML and WGI.** The country has good data from these diagnostics over a long period allowing us to construct a good trend analysis. However, there are still some key gaps. There has never been an application of the Tax Administration Diagnostic Assessment Tool (TADAT) to provide a baseline of administrative capacity on tax revenue. There has not been a detailed assessment of Customs capabilities and there has never been an analysis of procurement using any sort of recognised framework.

265. **The assessment team used the modified AFI diagnostic to apply a four tier ANS Risk rating scale** of Low, Medium, High, and Very High, breaking the 0-1 index scale into 4 equal parts (0.25), With Low = 0-0.25, medium = 0.25-0.5, High = 0.5-0.75 and Very High = 0.75-1.0.

Methodology for the Quantification of Risk

266. **AFI's Development and Fiduciary Analytics (DFRA) is based on a methodology originally developed by the Australian Government in 2009**[Error! Bookmark not defined.]. The methodology is based on approaches developed by the UKG, EU and the World Bank. AFI's DFRA draws on a range of public and private diagnostics. Public sources used by AFI include: Public Expenditure and Financial Accountability (PEFA) program's Public Financial Management (PFM) performance measurement framework (www.pefa.org), PEFA-Gender, PEFA-Sub-National, Open Budget Index (OBI), Anti-Money Laundering Index (AMLI), Corruption Perceptions Index (CPI), Country Policy and Institutional Assessment (CPIA), Statistical Capacity Index (SCI), Rule of Law Index (RoL-I) and Worldwide Governance Indicators (WGI), World Customs Organisation (WCO) checklist, Tax Administration Diagnostic Assessment Tool (TADAT).

267. **A general view appears to be that PFM development and fiduciary risks are "two sides of the same coin and cannot usefully be separated**" (Koeberle, et al., 2006). But this is not the case as there are some important differences.

268. **Fiduciary risk is generally defined as the risk that funds are not used for authorized purposes** (i.e., not corrupt purposes); do not achieve value for money; or are not properly accounted for (e.g., corruption covered up) (Shand, 2005, pp. 28-29). In practice it is closely aligned to corruption risk. The realization of fiduciary risk can be due to a variety of factors, including a lack of capacity; appropriate procedures and systems; competency or knowledge; bureaucratic inefficiency; or active corruption. Fiduciary risk is a form of systemic risk, meaning that key systems interact with each other to determine each system component's overall risk. The definition of fiduciary risk in this paper is intentionally narrow and focused on public financial management risks. In particular, the use of

resources for "unauthorized purposes" is emphasized rather than the broader term of "intended purposes", which is often included in other definitions of fiduciary risk[52].

269. **Development risk has a more positive tone and is defined as the risk that the resources will not achieve development goals** of inclusive and sustainable growth and poverty reduction"[vi], institutional and structural reform and capacity building. Development risk is influenced by the level of administrative burden placed on governments by donors as well as compliance costs associated with complex procedures that do not match technical capacities of individuals and institutions. Moreover, there is a position that capacity development, reform, and transaction costs (e.g., additional procedures, reporting and meetings) can be better supported efficiently by appropriate use of various country PFM system components. The idea is centred on the principle that "to improve a system you should use the system". That said, aid agencies must still credibly manage fiduciary risks to ensure support for aid programs is maintained and strengthened. This is key given the evidence that a donor's trust in and use of a recipient government's PFM system is significantly positively related to the level of public support for providing aid, which in turn is partly determined by the level of corruption perceived in the recipient and donor countries (Knack & Eubank, 2009, p. 28; Chong & Gradstein, 2006, p. 4). This is particularly relevant where aid budgets are being squeezed. Development risk is a form of systemic risk.

270. **Public Finance Risk factors are stable over time and over different country or institutional contexts**. This enables timely risk assessment once a PEFA assessment is complete. Moreover, it facilitates inter-country and inter-institution comparisons as well as assessments of progress of risk reduction measures over time.

271. **Fiduciary risk is more closely aligned to the actual financial flows or expenses incurred** and the recognized importance of ex ante financial controls in a developing economy. The high fiduciary risk factors have therefore been assigned to those PEFA dimensions that closely align to actual expenses and controls. A moderate factor has been assigned to elements that align more closely with expense monitoring or classification while the lowest category has been assigned to policy alignment or management like budgeting.

272. **Development risk is closely aligned with the actual expense incurred,** the classification of that expense in terms of the relevant development strategy and how important the use of the PFM system component is for achieving capacity development and reform objectives and helping progress towards the MDGs. In this regard, while clearly not always the case, development objectives can be thought of as more long term in nature, such as the pursuit of the MDGs and poverty reduction, while fiduciary risk can be thought of as more short-term in nature (e.g., to ensure actual flows are adequately accounted and controlled to minimize the risk that resources go to unauthorized purposes).

273. **To quantify risk rating scores, all diagnostics used are converted to numerical values** in line with common approaches with a common index of 0 to 1 being created (Renzio, 2009). Numerical conversions for graded scores like PEFA are as follows: A=4, B=3, C=2 and D=1, with + scores given an additional 0.5. These are summarized in Table 1 below outlines the thresholds for categorizing risk for the UK/Australian four tier method. Zero-to-one (0-1) scale equivalents are also provided, which are used for the 0-1 risk indices. A five-tiered method is sometimes also used, which assigns a moderate rating around the central score of C+ (2.5).

[52] DFID expands the intended purpose element to include an assessment of the PFM system in terms of its adequacy of focus on poverty reduction.

Table 1. Numerical Conversion of PEFA Scores and Risk Categories

PEFA Score	A	B+	B	C+	C	D+	D
Numerical Value#	4	3.5	3	2.5	2	1.5	1
(Avg. Equivalent)*	4-3.75	3.7499-3.25	3.2499-2.75	2.7499-2.25	2.2499-1.750	1.75-1.250	1.25-1
0-1 Equivalent	0	0.167	0.333	0.500	0.667	0.833	1.000
(Range Equivalent)	0-0.83	0.830-0.25	0.250-0.417	0.4170-0.583	0.5830-0.750	0.75-0.9170	0.917-1

ANS Risk Categories 4 Tier Range	**Low** 4-3.25	**Medium** 3.2499-2.5	**High** 2.499-1.75	**Very High** 1.749-1
0-1 Equivalent	0-0.25	0.250-0.5	0.500-.75	0.750-1

 # Commonly used scale including IMF PEFA Index[53] and De Lorenzo (2009) **Error! Bookmark not defined.** *[54]*

Transition points determined by possible PEFA scores as equal spacing not possible under PEFA alpha + scoring methodology.

274. **There are recognized problems with averaging PEFA scores.** De Lorenzo (2009)**Error! Bookmark not defined.** pointed out that "the PEFA methodology actually measure very different things" and that the "use of averages assumes that all indicators are equally important". He went on to explain that "this might be problematic for several reasons. For some parts of the framework, for example, some indicators may be 'more important' than others". This is particularly relevant for fiduciary risk analysis. Simple averaging of numerical PEFA scores does not consider indicators or dimensions that are more important to fiduciary risk than other.

275. **A different approach based on a standard risk quantification methodology has been taken in other settings**, including Afghanistan (Laing & Ashcroft, 2015 (April); Laing, 2010b), Ghana (Laing, 2014), Iraq (Laing, 2010; Laing, 2010c), Ireland (Laing, 2013), Liberia (Middlebrook, et al., 2012), Papua New Guinea (Laing, 2009), Puerto Rico (ISE, 2018), Sri Lanka (Laing, 2011), Timor-Leste (Laing, 2011b; Laing, 2012b), Tokelau (Laing, 2011c), Turks and Caicos Islands (Laing, 2010), United Nations Relief and Works Agency (UNRWA, including West Bank and Gaza, Syria, and Jordan) (Laing, 2012), Vietnam (Laing, 2013b), and Zambia (Laing, 2014b).

276. **The methodology adopted a standard risk quantification approach of *performance score multiplied by risk factor*,** where risk factors are associated with the system generally - not the country context (see the box below).

Risk Score = Score for System Performance x Risk Factor (Fiduciary or Development)

277. **Under this approach risk factors are assigned for each performance indicator** and dimension based on the assessed importance to fiduciary risk, which is defined essentially as the short-term risk of mismanagement and corruption and poor value for money[55] and applied the following numerical

[53] The IMF PEFA index uses PEFA ratings for the main 28 components and are based on an ordinal scale (A to D) and are converted into numerical values and then aggregated using equal weights. Therefore, PEFA scores (A, B, C, D) are converted into the four ordinals to numerical scores (4,3,2,1) – to assist with graphing results -, with "+" score given ½ point and assign equal weight to each of 28 government PFM indicators. Non-Rated (NR) and/or non-Used indicators are not used in the calculation. **Error! Bookmark not defined.**

[54] If applying standard risk quantification methodology of performance score (PI) x risk factor, then numerical progression is reversed with A=1 and D= 4 if risk factors for example are: Low risk factor=1, moderate risk factor=2 and high risk= 3. This is so that intuitively higher numbers (and higher multiplied numbers) relate to higher risk.

[55] And development risk being the longer-term risk of not meeting development objectives.

equivalents: High = 3, Medium = 2 and Low = 1. For risk factors used see Table 4 for PEFA 2005/11, Table 5 for PEFA 2016. and Table 6 below for other diagnostics (see Risk Factors on page 99).

278. **Attribution of quantified risk to ANS components are performed via standard bridging table methodology**. These are provided at in this attachment in the Follow-the-Money Public Finance System Bridging Tables section on page 110.

279. **An important point here is that risk factors for PI dimensions can be different.** For example, medium term policy linked budgets are more important for longer term development risk than fiduciary risk so would get a higher development risk factor, while bank reconciliation systems are more important for short term fiduciary risk so would get a higher fiduciary risk factor. The nominal fiduciary risk score range was rebased to a 0-1 range to give more meaningful numerical values to risk levels, but importantly also enables wider use including in cost-effectiveness analysis of aid interventions and reform programs[56]. This approach was not used in this risk assessment, though the results utilizing the more robust methodology that accounts for importance to fiduciary risk of PEFA scores is to be reported in another follow-up paper. The initial finding is that a higher risk is calculated and higher risk category overall (substantial rather than medium). Other approaches have also been adopted for rating fiduciary risk including the French Fiduciary Risk Index (FRI), which is simply a reduced PEFA set (Bessette, 2009; PEFA Secretariat, 2009)[57].

280. **Other problems with averaging PEFA scores include issues concerning the addition of a plus (+) to Performance Indicators** under the M1-weakest link and M2-averaging methodologies for PEFA themes. For example, adding 0.5 for a plus may not be as sensitive to system quality. Under M1-weakest link approach, a four-dimension indicator could receive 3 A's and 1 D and therefore secure a D+, or 3 D's and one C and get a D+. Clearly, the system with 3A's and 1 D would be considered superior to the other, but both get the same score. An approach to this problem would be to assign some variability in the range of M1 scores around 0.5 that would account for relative strengths and weakness. Under the M2-averaging approach, Performance Indicator (PI) dimensions are basically assessed as being equally important to the PI. For M2 fiduciary risk scoring, analysts could use the actual average scores for M2 scores. This is problem is not significant on the basis that PEFA represents expert opinion on system quality so a 0.5 assignment for a plus is not inappropriate. Consequently, for this paper, 0.5 was added for any PEFA PI with a plus.

Table 2. All Possible PI Scores under PEFA Methodologies[#]

D	D	D+	D+	D+	D+	C	C+	C+	C+	B	B	B	B+	B+	B+	A	A	A
1.00	1.25	1.33	1.50	1.67	1.75	2.00	2.25	2.33	2.50	2.67	2.75	3.00	3.25	3.33	3.50	3.67	3.75	4.00

#PEFA Methodologies: M1 weakest link (+adds 0.5), and M2-average for 2, 3 and 4 dimensions.

281. **Another problem to overcome with the plus (+) assignment methodology emerges when assigning ranges and transition points for category changes** (e.g., from B+ to A, from low risk to

[56] See use in Multi-Donor Trust Fund decision analysis (Laing, 2012).

[57] The French FRI – FRI calculation is indicative. The FRI is obtained from the scores of 12 selected PEFA indicators, divided in 4 dimensions: D1 - Credibility of the budget: PI2; PI4; PI7; D2 - Effective enforcement procedures and expenditure control: PI18; PI19; PI20; D3 - Reliability of accounting and financial reporting: PI22; PI24; PI25; and D4 - Quality and external audits: PI26; PI27; PI28. Each score for the 12 indicators is converted into digital score via a conversion table. The FRI is obtained by simple average of the ratings of the twelve digital scores. Besides the overall rating, each dimension score is obtained by average ratings of the three digital scores related to this dimension. An overall score is assigned and associated management system of public finances in four risk categories: low (A), moderate (B), high (C) and high (D). Beyond the overall index, four (PI18; PI19; PI20; PI26) out of twelve indicators must have minimum thresholds in order that the fiduciary risk must not be considered as very high. This principle is supposed to limit the effects of compensation between ratings. **Error! Bookmark not defined.**

medium risk). When assigning a PEFA equivalent score to an average of different PIs (like for the 7 PEFA themes or all 31 indicators), numerical scores are unlikely to fit neatly in the range of possible PEFA PI scores for any single PI (see Table 2 and Table 3[58]). Consequently, ranges need to be assigned for alpha-plus scores. It is not possible to use equal spacing to numbers between 1 and 4 and still be consistent with possible alpha-plus PEFA scoring (see Table 2). *The results are that A and D have half (0.25) the numerical range as the rest (0.5)* (see Table 1). The result occurs simply because there is not an A+ and E+ to secure the equal spacing while alpha-plus PEFA scores still represent midpoint scores. For inter-temporal same country comparisons, same year cross country comparisons, and inter-temporal, cross-country comparisons it is important to ensure that the same ranges are followed to ensure the robustness of findings.

282. **Problems also emerge when assigning a risk category rating based on average PEFA scores**. The question is what are the transition points for moving from one risk category to another – e.g., from medium to substantial? There are two basic options: i) use an equal spacing rule for a 1-4 numeric scale; or iii) use a non-equal spacing rule (e.g., a 7-tier rule equivalent to PEFA numeric spacings or arbitrary spacings determined by expert opinion). The equal spacing rule was applied for this paper (see Table 3).

[58] Table 2 shows all the possible PI-plus scores under PEFA while Table 3 shows PEFA conversion tables with numerical equivalents. It should be noted that the use of Table 2 as a lookup table works for assigning pluses for 2, 3 and 4 dimensions under M2 PIs in accordance with PEFA conversion tables.

PEFA Conversions

Table 3. PEFA conversion table

2 Dimensional Indicators				Sum	Average	Score
D	D	1	1	2	**1**	D
D	C	1	2	3	**1.5**	D+
D	B	1	3	4	**2**	C
D	A	1	4	5	**2.5**	C+
C	C	2	2	4	**2**	C
C	B	2	3	5	**2.5**	C+
C	A	2	4	6	**3**	B
B	B	3	3	6	**3**	B
B	A	3	4	7	**3.5**	B+
A	A	4	4	8	**4**	A

3 Dimensional Indicators						Sum	Average	Score
D	D	D	1	1	1	3	1.00	D
D	D	C	1	1	2	4	1.33	D+
D	D	B	1	1	3	5	1.67	D+
D	D	A	1	1	4	6	2.00	C
D	C	C	1	2	2	5	1.67	D+
D	C	B	1	2	3	6	2.00	C
D	C	A	1	2	4	7	2.33	C+
D	B	B	1	3	3	7	2.33	C+
D	B	A	1	3	4	8	2.67	B
D	A	A	1	4	4	9	3.00	B
C	C	C	2	2	2	6	2.00	C
C	C	B	2	2	3	7	2.33	C+
C	C	A	2	2	4	8	2.67	B
C	B	B	2	3	3	8	2.67	B
C	B	A	2	3	4	9	3.00	B
C	A	A	2	4	4	10	3.33	B+
B	B	B	3	3	3	9	3.00	B
B	B	A	3	3	4	10	3.33	B+
B	A	A	3	4	4	11	3.67	A
A	A	A	4	4	4	12	4.00	A

4 Dimensional Indicators							Sum	Average	Score
D	D	D	D	1	1	1	1	4	1.00	D
D	D	D	C	1	1	1	2	5	1.25	D
D	D	D	B	1	1	1	3	6	1.50	D+
D	D	D	A	1	1	1	4	7	1.75	D+
D	D	C	C	1	1	2	2	6	1.50	D+
D	D	C	B	1	1	2	3	7	1.75	D+
D	D	C	A	1	1	2	4	8	2.00	C
D	D	B	B	1	1	3	3	8	2.00	C
D	D	B	A	1	1	3	4	9	2.25	C+
D	D	A	A	1	1	4	4	10	2.50	C+
D	C	C	C	1	2	2	2	7	1.75	D+
D	C	C	B	1	2	2	3	8	2.00	C
D	C	C	A	1	2	2	4	9	2.25	C+
D	C	B	B	1	2	3	3	9	2.25	C+
D	C	B	A	1	2	3	4	10	2.50	C+
D	C	A	A	1	2	4	4	11	2.75	B
D	B	B	B	1	3	3	3	10	2.50	C+
D	B	B	A	1	3	3	4	11	2.75	B
D	B	A	A	1	3	4	4	12	3.00	B
D	A	A	A	1	4	4	4	13	3.25	B+
C	C	C	C	2	2	2	2	8	2.00	C
C	C	C	B	2	2	2	3	9	2.25	C+
C	C	C	A	2	2	2	4	10	2.50	C+
C	C	B	B	2	2	3	3	10	2.50	C+
C	C	B	A	2	2	3	4	11	2.75	B
C	C	A	A	2	2	4	4	12	3.00	B
C	B	B	B	2	3	3	3	11	2.75	B
C	B	B	A	2	3	3	4	12	3.00	B
C	B	A	A	2	3	4	4	13	3.25	B+
C	A	A	A	2	4	4	4	14	3.50	B+
B	B	B	B	3	3	3	3	12	3.00	B
B	B	B	A	3	3	3	4	13	3.25	B+
B	B	A	A	3	3	4	4	14	3.50	B+
B	A	A	A	3	4	4	4	15	3.75	A
A	A	A	A	4	4	4	4	16	4.00	A

Risk Factors

Table 4. PEFA 2011 Fiduciary and Development Risk Factors

PI_No_2011	Indicator-Dimension_2011	FR Factor_2005	DR Factor_2005
A	**PFM-OUT-TURNS: Credibility of the budget**		
PI-01	**Aggregate expenditure out-turn**	**M**	**H**
PI-01.1	The difference between actual and original budget	M	H
PI-02	**Composition of expenditure**	**M**	**H**
PI-02.1	Extent of the variance in expenditure composition	M	H
PI-02.2	Contingency reserve	M	H
PI-03	**Aggregate revenue out-turn**	**M**	**M**
PI-03.1	Domestic revenue out-turn	M	M
PI-04	**Stock and monitoring of [sector] expenditure payment arrears**	**H**	**H**
PI-04.1	Stock of expenditure payment arrears [in the sector] (as a % of actual total expenditure for the corresponding fiscal year) & any recent change in the stock.	H	H
PI-04.2	Availability of data for monitoring the stock of expenditure payment arrears [in the sector]	H	H
B	**Comprehensiveness and Transparency**		
PI-05	**Classification of the budget**	**L**	**H**
PI-05.1	The classification system	L	H
PI-06	**Comprehensiveness of budget documentation**	**L**	**H**
PI-06.1	Content of budget documentation	L	H
PI-07	**Unreported government operations**	**H**	**H**
PI-07.1	The level of extra-budgetary expenditure	H	H
PI-07.2	Income /expenditure information on donor-funded projects	H	H
PI-08	**Transparency of inter-governmental fiscal relations**	**H**	**H**
PI-08.1	Transparent and rules-based systems	H	H
PI-08.2	Timeliness of reliable information	H	H
PI-08.3	Extent of consolidation of fiscal data	H	H
PI-09	**Oversight of aggregate other fiscal risk**	**H**	**H**
PI-09.1	Monitoring of AGAs and PEs.	H	H
PI-09.2	Monitoring of SNGs	H	H
PI-10	**Public access to fiscal information**	**H**	**H**
PI-10.1	Scope of public access to information	H	H
C	**BUDGET CYCLE**		
C (i)	**Policy based Budgeting**		
PI-11	**Orderliness and participation in the annual budget process**	**M**	**H**
PI-11.1	Budget calendar	M	H
PI-11.2	Political involvement in setting budget guidance	M	H
PI-11.3	Approval by the legislature	M	H
PI-12	**Multi-year perspective**	**M**	**H**
PI-12.1	Multi -year fiscal forecasts and functional allocations	M	H
PI-12.2	Scope and frequency of debt sustainability analysis	H	H
PI-12.3	Sector strategies with multi-year costings of recurrent and investment	M	H
PI-12.4	Linkages between investment budgets and forward estimates.	M	H
C (ii)	**Predictability and Control in Budget Execution**		
PI-13	**Transparency of taxpayer obligations and liabilities**	**H**	**H**
PI-13.1	Clarity and comprehensiveness of tax liabilities	H	H
PI-13.2	Taxpayer access to information	H	H
PI-13.3	Tax appeals mechanism.	H	H
PI-14	**Taxpayer registration and tax assessment**	**M**	**M**
PI-14.1	Controls in the taxpayer registration system	M	M
PI-14.3	Penalties for non-compliance	M	M
PI-14.2	Tax audit and fraud investigation	H	M
PI-15	**Effectiveness in collection of tax payments**	**H**	**H**
PI-15.1	Collection ratio for gross tax arrears	H	M
PI-15.2	Transfer of tax collections to the Treasury	H	M
PI-15.3	Accounts reconciliation between tax information and receipts	H	M
PI-16	**Predictability in the availability of funds for commitment**	**H**	**H**
PI-16.1	Cash flows forecasting and monitoring	H	H
PI-16.2	In-year information to MDAs on ceilings for commitment	H	H
PI-16.3	Adjustments to budget allocations	H	H
PI-17	**Recording and management of cash balances, debt and guarantees**	**H**	**H**
PI-17.1	Quality of debt data recording and reporting	H	H
PI-17.2	Extent of consolidation of the government's cash balances	H	H

PI_No_2011	Indicator-Dimension_2011	FR Factor_2005	DR Factor_2005
PI-17.3	Systems for contracting loans and issuance of guarantees	H	H
PI-18	**Effectiveness of payroll controls**	**H**	**H**
PI-18.1	Integration and reconciliation of personnel and payroll data.	H	H
PI-18.2	Changes to personnel and payroll records	H	H
PI-18.3	Internal controls for personnel and payroll records	H	H
PI-18.4	Payroll audits	H	H
PI-19	**Competition, value for money and controls in procurement**	**H**	**H**
PI-19.1	Legal and regulatory framework	H	H
PI-19.2	Use of competitive procurement methods	H	H
PI-19.3	Public access to procurement information	H	H
PI-19.4	Independent administrative procurement complaints system	H	H
PI-20	**Effectiveness of internal controls for non-salary expenditure**	**H**	**H**
PI-20.1	Effectiveness of expenditure commitment controls	H	H
PI-20.2	Understanding of other internal controls	H	H
PI-20.3	Compliance with rules	H	H
PI-21	**Effectiveness of internal audit**	**H**	**M**
PI-21.1	Coverage and quality of the internal audit function	H	M
PI-21.2	Frequency and distribution of reports	H	M
PI-21.3	Extent of management response to internal audit findings	H	H
C (iii)	**Accounting, Recording and Reporting**		
PI-22	**Timeliness and regularity of accounts reconciliation**	**H**	**H**
PI-22.1	Regularity of bank reconciliations	H	H
PI-22.2	Regularity of reconciliation and clearance of suspense accounts	H	H
PI-23	**Availability of information on resources of service delivery units**	**H**	**H**
PI-23.1	Collection and processing of service delivery information	H	H
PI-24	**Quality and timeliness of in-year budget reports**	**L**	**L**
PI-24.1	Scope of reports	L	L
PI-24.2	Timeliness of reports	L	L
PI-24.3	Quality of information	L	L
PI-25	**Quality and timeliness of annual financial statements**	**M**	**M**
PI-25.1	Completeness of the financial statements	M	M
PI-25.2	Timeliness of submission of the financial statements	M	M
PI-25.3	Accounting standards	M	M
C (iv)	**External Scrutiny and Audit**		
PI-26	**Scope, nature, and follow-up of external audit**	**M**	**H**
PI-26.1	Scope/nature of audit performed	M	H
PI-26.2	Timeliness of submission of audit reports to legislature	M	M
PI-26.3	Evidence of follow up on audit recommendations	H	H
PI-27	**Legislative scrutiny of the annual budget law**	**L**	**M**
PI-27.1	Scope of the legislature's scrutiny	L	L
PI-27.2	Legislature's procedures	L	M
PI-27.3	Time for the legislature to provide a response to budget proposals	L	M
PI-27.4	Rules for in-year amendments to the budget without ex-ante approval	L	L
PI-28	**Legislative scrutiny of external audit reports**	**M**	**H**
PI-28.1	Timeliness of examination of audit reports by the legislature	M	H
PI-28.2	Extent of hearings on key findings undertaken by the legislature	M	H
PI-28.3	Recommendations by legislature and response by executive	M	H
D	**D. Donor Practices**		
UD-01	**Predictability of Direct Budget Support**	**M**	**H**
UD-01.1	Annual deviation of actual budget support	M	H
UD-01.2	In-year timeliness of donor disbursements	M	H
UD-02	**Financial information provided by donors**	**M**	**H**
UD-02.1	Completeness and timeliness of budget estimates for projects	M	H
UD-02.2	Frequency and coverage of reporting by donors	M	H
UD-03	**Proportion of aid that is managed by use of national procedures**	**M**	**H**
UD-03.1	Proportion of aid to central government that follow national procedures	M	H

Table 5. PEFA 2016 Fiduciary and Development Risk Factors

PI_No_2016	Indicator-Dimension_2016	FR Factor_2016	DR Factor_2016
1.	**Budget reliability**		
PI-01	**Aggregate expenditure out-turn**	**M**	**H**
PI-01.1	Aggregate expenditure outturn	M	H
PI-02	**Expenditure composition outturn**	**M**	**H**
PI-02.1	Expenditure composition outturn by function	M	H
PI-02.2	Expenditure composition outturn by economic type	M	H
PI-02.3	Expenditure from contingency reserves.	M	H
PI-03	**Revenue outturn**	**M**	**M**
PI-03.1	Aggregate revenue outturn	M	M
PI-03.2	Revenue composition outturn	M	M
2.	**Transparency of public finances**		
PI-04	**Budget Classification**	**L**	**H**
PI-04.1	Budget Classification	L	H
PI-05	**Budget Documentation**	**L**	**H**
PI-05.1	Budget Documentation	L	H
PI-06	**Central government operations outside financial reports**	**H**	**H**
PI-06.1	Expenditure outside financial reports	H	H
PI-06.2	Revenue outside financial reports	H	H
PI-06.3	**Financial reports of extra-budgetary units**	**H**	**H**
PI-07	Transfers to subnational governments	H	H
PI-07.1	System for allocating transfers	H	H
PI-07.2	Timeliness of information on transfers	H	H
PI-08	**Performance information for service delivery**	**H**	**H**
PI-08.1	Performance plans for service delivery	H	H
PI-08.2	Performance achieved for service delivery	H	H
PI-08.3	Resources received by service delivery units	H	H
PI-08.4	Performance evaluation for service delivery	H	H
PI-09	**Public access to fiscal information**	**H**	**H**
PI-09.1	Public access to fiscal information	H	H
3.	**Management of assets and liabilities**		
PI-10	**Fiscal risk reporting**	**H**	**H**
PI-10.1	Monitoring of public corporations	H	H
PI-10.2	Monitoring of sub-national government (SNG)	H	H
PI-10.3	Contingent liabilities and other fiscal risks	L	H
PI-11	**Public investment management**	**M**	**H**
PI-11.1	Economic analysis of investment proposals	M	H
PI-11.2	Investment project selection	M	H
PI-11.3	Investment project costing	M	H
PI-11.4	Investment project monitoring	M	H
PI-12	**Public asset management**	**H**	**H**
PI-12.1	Financial asset monitoring	H	H
PI-12.2	Nonfinancial asset monitoring	H	H
PI-12.3	Transparency of asset disposal	H	H
PI-13	**Debt management**	**H**	**H**
PI-13.1	Recording and reporting of debt and guarantees	H	H
PI-13.2	Approval of debt and guarantees	H	H
PI-13.3	Debt management strategy	M	H
4.	**Policy-based fiscal strategy and budgeting**		
PI-14	**Macroeconomic and fiscal forecasting**	**M**	**H**
PI-14.1	Macroeconomic forecasts	M	H
PI-14.2	Fiscal forecasts	M	H
PI-14.3	Macro-fiscal sensitivity analysis	M	H
PI-15	**Fiscal strategy**	**M**	**H**
PI-15.1	Fiscal impact of policy proposals	M	H
PI-15.2	Fiscal strategy adoption	M	H
PI-15.3	Reporting on fiscal outcomes	M	H
PI-16	**Medium term perspective in expenditure budgeting**	**M**	**H**
PI-16.1	Medium-term expenditure estimates	M	H
PI-16.2	Medium-term expenditure ceilings	M	H
PI-16.3	Alignment of strategic plans and medium-term budgets	M	H
PI-16.4	Consistency of budgets with previous year estimates	M	H
PI-17	**Budget preparation process**	**M**	**H**
PI-17.1	Budget calendar	M	H
PI-17.2	Guidance on budget preparation	M	H
PI-17.3	Budget submission to the legislature	M	H

PI_No_2016	Indicator-Dimension_2016	FR Factor_2016	DR Factor_2016
PI-18	**Legislative scrutiny of budgets**	**M**	**H**
PI-18.1	Scope of budget scrutiny	M	H
PI-18.2	Legislative procedures for budget scrutiny	M	H
PI-18.3	Timing of budget approval	M	H
PI-18.4	Rules for budget adjustments by the executive	M	H
5.	**Predictability and control in budget execution**		
PI-19	**Revenue administration**	**H**	**H**
PI-19.1	Rights and obligations for revenue measures	H	H
PI-19.2	Revenue risk management	H	H
PI-19.3	Revenue audit and investigation	H	H
PI-19.4	Revenue arrears monitoring	H	H
PI-20	**Accounting for revenues**	**H**	**H**
PI-20.1	Information on revenue collections	H	H
PI-20.2	Transfer of revenue collections	H	H
PI-20.3	Revenue accounts reconciliation	H	H
PI-21	**Predictability of in-year resource allocation**	**M**	**H**
PI-21.1	Consolidation of cash balances	M	H
PI-21.2	Cash forecasting and monitoring	M	H
PI-21.3	Information on commitment ceilings	M	H
PI-21.4	Significance of in-year budget adjustments	M	H
PI-22	**Expenditure arrears**	**H**	**M**
PI-22.1	Stock of expenditure arrears	H	M
PI-22.2	Expenditure arrears monitoring	H	M
PI-23	**Payroll controls**	**H**	**H**
PI-23.1	Integration of payroll and personnel records	H	H
PI-23.2	Management of payroll changes	H	H
PI-23.3	Internal control of payroll	H	H
PI-23.4	Payroll audit	H	H
PI-24	**Procurement**	**H**	**H**
PI-24.1	Procurement monitoring	H	H
PI-24.2	Procurement methods	H	H
PI-24.3	Public access to procurement information	H	H
PI-24.4	Procurement complaints management	H	H
PI-25	**Internal controls on non-salary expenditure**	**H**	**H**
PI-25.1	Segregation of duties	H	H
PI-25.2	Effectiveness of expenditure commitment controls	H	H
PI-25.3	Compliance with payment controls	H	H
PI-26	**Internal audit effectiveness**	**H**	**M**
PI-26.1	Coverage of internal audit	H	M
PI-26.2	Nature of audits and standards applied	H	M
PI-26.3	Internal audit activity and reporting	H	M
PI-26.4	Response to internal audits	H	H
6.	**Accounting and reporting**		
PI-27	**Financial data integrity**	**H**	**H**
PI-27.1	Bank account reconciliation	H	H
PI-27.2	Suspense accounts	H	H
PI-27.3	Advance accounts	H	H
PI-27.4	Financial data integrity processes	H	H
PI-28	**In-year budget reports**	**M**	**M**
PI-28.1	Coverage and comparability of reports	M	M
PI-28.2	Timing of in-year budget reports	M	M
PI-28.3	Accuracy of in-year budget reports	M	M
PI-29	**Annual financial reports**	**H**	**H**
PI-29.1	Completeness of annual financial reports	H	H
PI-29.2	Submission of reports for external audit	H	H
PI-29.3	Accounting standards	H	H
7.	**External scrutiny and audit**		
PI-30	**External audit**	**M**	**H**
PI-30.1	Audit coverage and standards	M	H
PI-30.2	Submission of audit reports to the legislature	M	H
PI-30.3	External audit follow-up	M	H
PI-30.4	Supreme Audit Institution (SAI) independence	M	H
PI-31	**Legislative scrutiny of audit reports**	**M**	**H**
PI-31.1	Timing of audit report scrutiny	M	H
PI-31.2	Hearings on audit findings	M	H
PI-31.3	Recommendations on audit by the legislature	M	H

PI_No_2016	Indicator-Dimension_2016	FR Factor_2016	DR Factor_2016
PI-31.4	Transparency of legislative scrutiny of audit reports	M	H
8.	**Predictability of Transfers from Higher Level of Government**		
UHLG-01	**Predictability of Transfers from Higher Level of Government**	**M**	**H**
UHLG-01.1	Annual deviation of actual total HLG transfers from the original total estimated amount provided by HLG to the SN entity for inclusion in the latter's budget.	M	H
UHLG-01.2	Annual variance between actual and estimated transfers of earmarked grants.	M	H
UHLG-01.3	In-year timeliness of transfers from HLG (compliance with timetables for in-year distribution of disbursements agreed within one month of the start of the SN fiscal year)	M	H

Table 6. Other Fiduciary and Development Risk Factors for Other Diagnostics

PI_No_Other	Other Indicator-Dimension	FR Factor	DR Factor
FS	**Fiscal Space**		
PI-FS	**Fiscal Space Competencies**	**M**	**H**
PI-FS.1	Fiscal space analysis competencies (estimation, creation, and filling)	M	H
CBE	Controls in budget execution		
PI-NTR	**Transparency and effectiveness of administrative arrangements for non-tax revenue**	**H**	**H**
PI-NTR.1	Effectiveness of measures for natural resource import and export industry registration and licensing	H	H
PI-NTR.2	Extent to which authorised fees are not charged	H	H
PI-NTR.3	Extent to which unauthorised fees are charged	H	H
PI-CM	**Competition, value for money and controls in contract management**	**H**	**H**
PI-CM.1	Extent of procedures in place to monitor compliance and independence in conducting procurement and managing contracts	H	H
PI-CM.2	Extent of procedures in place to identify and address potential conflicts of interest in awarding contracts and conducting procurement and contract management	H	H
PI-CM.3	Extent of active management (revisions and cancellations etc) of contracts based on contractors' performance to ensure continuing value for money]	H	H
PI-PC	**Controls in procured goods**	**H**	**H**
PI-PC.1	Extent of quality inspection and audit at receipt of goods and services procured	H	H
PI-PC.2	Extent of adequate storage system and prevention of stock out and theft [in the sector]	H	H
PI-GRPFM	**Gender**		
PI-GRPFM–1	**Gender impact analysis of budget policy proposals**	**M**	**M**
PI-GRPFM–1.1	Gender impact analysis of expenditure policy proposals	M	M
PI-GRPFM–1.2	Gender impact analysis of revenue policy proposals	L	M
PI-GRPFM–2	**Gender responsive public investment management**	**L**	**M**
PI-GRPFM–2.1	Gender responsive public investment management	L	M
PI-GRPFM–3	**Gender responsive budget circular**	**L**	**M**
PI-GRPFM–3.1	Gender responsive budget circular	L	M
PI-GRPFM–4	**Gender responsive budget proposal documentation**	**L**	**M**
PI-GRPFM–4.1	Gender responsive budget proposal documentation	M	M
PI-GRPFM–5	**Sex-disaggregated performance information for service delivery**	**M**	**M**
PI-GRPFM–5.1	Sex-disaggregated performance plans for service delivery	H	H
PI-GRPFM–5.2	Sex-disaggregated performance achieved for service delivery	H	H
PI-GRPFM–6	**Tracking budget expenditure for gender equality**	**H**	**H**
PI-GRPFM–6.1	Tracking budget expenditure for gender equality	L	M
PI-GRPFM–7	**Gender responsive reporting**	**L**	**M**
PI-GRPFM–7.1	**Gender responsive reporting**	**M**	**H**

PI_No_Other	Other Indicator-Dimension	FR Factor	DR Factor
PI-GRPFM–8	Evaluation of gender impacts of service delivery	M	H
PI-GRPFM–8.1	Evaluation of gender impacts of service delivery	L	M
PI-GRPFM–9	**Legislative scrutiny of gender impacts of the budget**	**L**	**M**
PI-GRPFM–9.1	Gender-responsive legislative scrutiny of budgets	M	M
PI-GRPFM–9.2	Gender responsive legislative scrutiny of audit reports	M	M
BS	**Banking Supervision**		
PI-BS	**Compliance with Basel Core Principles and AML**	**H**	**H**
PI-BS.1	Compliance with preconditions for effective banking supervision	H	H
PI-BS.2	Compliance with licensing and structure, prudential regulations and requirements and methods of ongoing banking supervision	H	H
PI-BS.3	Compliance with information requirements, formal powers of supervisors and cross-border banking	H	H
AML	**Anti-Money Laundering**		
PI-AML	**Effectiveness of anti-money laundering**	**H**	**H**
PI-AML.1	Risk of money laundering and terrorist financing	H	H
SC	**Statistics**		
PI-SC	**Capacity for Social and Economic Statistics**	**M**	**H**
PI-SC.1	Compliance with methodology	M	H
PI-SC.2	Adequacy of source data	M	H
PI-SC.3	Periodicity and timeliness of statistics	M	H
AC	**Anti-Corruption**		
PI-AC	**Effectiveness of Anti-Corruption Measures**	**H**	**H**
PI-AC.1	Effectiveness and enforcement of administrative and criminal sanctions (including discipline and referral procedures)	H	H
PI-AC.2	The number of the listed elements of anti-corruption measures fulfilled: a) signed and ratified the UN Convention Against Corruption; b) an anti-corruption strategy; c) strategic objectives are clear and being implemented; and d) a clear self-assessment	H	H
PI-AC.3	The number of the listed elements for prevention and enforcement fulfilled: a) public sector ethics and asset declarations; b) access to information and whistle-blower protection; c) public education; and d) private sector standards including accounting and auditing standards.	H	H
PI-AC.4	Completeness of Sanctions in Anticorruption Laws	H	H
PI-AC.5	Powers of Oversight Institutions	H	H
PI-AC.6	Funding of anti-corruption bodies	H	H
PI-AC.7	Quality of new preventative measures being implemented	H	H
PI-AC.8	International Cooperation on Extradition, Mutual Legal Assistance, Transfer of Criminal Proceedings, Law Enforcement and Special Investigations.	H	H
PI-AC.9	Effectiveness of Asset Recovery Measures	H	H
PI-AC.10	Technical assistance and information exchange	H	H
Coms	**Communications**		
PI-Coms	**Effectiveness of Government communications in public finance**	**M**	**H**
PI-Coms.1	Effectiveness of horizontal communication	M	H
PI-Coms.2	Effectiveness of vertical communication	M	H
PI-Coms.3	Effectiveness of internal communication	M	H
PI-Coms.4	Effectiveness of external communication	M	H
TADAT	**Taxation**		
PI-TADAT	**Tax Performance Areas**	**H**	**H**
PI-TADAT - POA 1	Integrity of the Registered Taxpayer Base	H	H
PI-TADAT - POA 2	Effective Risk Management	H	H
PI-TADAT - POA 3	Performance Measurement Framework	H	H
PI-TADAT - POA 4	Timely Filing of Tax Declarations	H	H
PI-TADAT - POA 5	Timely Payment of Taxes	H	H

PI_No_Other	Other Indicator-Dimension	FR Factor	DR Factor
PI-TADAT - POA 6	Accurate Reporting in Declarations	H	H
PI-TADAT - POA 7	Tax Dispute Resolution	H	H
PI-TADAT - POA 8	Efficient Revenue Management	H	H
PI-TADAT - POA 9	Accountability and Transparency	H	H
GF	**Grant Funding Systems**		
PI-GF1	**Predictability of Performance-based Block Grants (Budget support)**	**M**	**H**
PI-GF1.1	Annual deviation of actual grants from the forecast provided by the federal agencies at least six weeks prior to the government submitting its budget proposals to the legislature (or equivalent approving body).	M	H
PI-GF1.2	In-year timeliness of granting agency disbursements (compliance with aggregate quarterly estimates)	M	H
PI-GF2	**Grant information (third party payers / in kind assistance) provided by donor agencies for budgeting and reporting on project and program aid**	**M**	**H**
PI-GF2.1	Completeness and timeliness of budget estimates by granting agencies for project support.	M	H
PI-GF2.2	Frequency and coverage of reporting by granting agencies on actual grant flows	M	H
PI-GF3	**Proportion of grant funds that is managed by use of national procedures**	**M**	**H**
PI-GF3.1	Overall proportion of grant funds to central government that are managed through national procedures (procurement, payment/ accounting, audit, and reporting)	M	H
CPI	**Corruption Perceptions**		
PI-CPI	**Corruption Perception Index**	**H**	**H**
PI-CPI.1	Corruption Perception Index Score Grade	H	H
OBI	**Open Budget Survey**		
PI-OBI	**Open Budget Index**	**M**	**H**
PI-OBI.1	Open Budget Index Rank Score Grade	M	H
WGI	**Worldwide Governance Indicators**		
PI-WGI	**Worldwide Governance Indicators (Avg)**	**H**	**H**
PI-WGI.1	Voice and Accountability	H	H
PI-WGI.2	Political Stability	H	H
PI-WGI.3	Government Effectiveness	H	H
PI-WGI.4	Regulatory Quality	H	H
PI-WGI.5	Rule of Law	H	H
PI-WGI.6	Control of Corruption	H	H
CPIA	**IDA resource allocation index (Risk Adj)**		
PI-CPIA	**IDA resource allocation index**	**M**	**H**
PI-CPIA.A	Economic Management Cluster	M	H
PI-CPIA.A.1	Macroeconomic Management	M	H
PI-CPIA.A.2	Fiscal Policy	M	H
PI-CPIA.A.3	Debt Policy	M	H
PI-CPIA.B	**Structural Policies Cluster**	**L**	**H**
PI-CPIA.B.1	Trade	L	H
PI-CPIA.B.2	Financial Sector	L	H
PI-CPIA.B.3	Business Regulatory Environment	L	H
PI-CPIA.C	**Policies For Social Inclusion/Equity Cluster**	**L**	**H**
PI-CPIA.C.1	Gender Equality	L	H
PI-CPIA.C.2	Equity Of Public Resource Use	L	H
PI-CPIA.C.3	Building Human Resources	L	H
PI-CPIA.C.4	Social Protection	L	H
PI-CPIA.C.5	Policy And Institutions for Environmental Sustainability	L	H
PI-CPIA.D	**Public Sector Management and Institutions Cluster**	**H**	**H**

PI_No_Other	Other Indicator-Dimension	FR Factor	DR Factor
PI-CPIA.D.1	Property Rights and Rule-Based Governance	H	H
PI-CPIA.D.2	Quality Of Budgetary and Financial Management	H	H
PI-CPIA.D.3	Efficiency Of Revenue Mobilization	H	H
PI-CPIA.D.4	Quality Of Public Administration	H	H
PI-CPIA.D.5	Transparency, Accountability, And Corruption in The Public Sector	H	H
RoL	**Rule of Law Index (Risk Adj)**		
PI-RoL	**WJP Rule of Law Index: Overall Score**	**H**	**H**
PI-RoL.F1	**Factor 1: Constraints on Government Powers**	**H**	**H**
PI-RoL.F1.1	1.1 Government powers are effectively limited by the legislature	H	H
PI-RoL.F1.2	1.2 Government powers are effectively limited by the judiciary	H	H
PI-RoL.F1.3	1.3 Government powers are effectively limited by independent auditing and review	H	H
PI-RoL.F1.4	1.4 Government officials are sanctioned for misconduct	H	H
PI-RoL.F1.5	1.5 Government powers are subject to non-governmental checks	H	H
PI-RoL.F1.6	1.6 Transition of power is subject to the law	H	H
PI-RoL.F2	**Factor 2: Absence of Corruption**	**H**	**H**
PI-RoL.F2.1	2.1 Government officials in the executive branch do not use public office for private gain	H	H
PI-RoL.F2.2	2.2 Government officials in the judicial branch do not use public office for private gain	H	H
PI-RoL.F2.3	2.3 Government officials in the police and the military do not use public office for private gain	H	H
PI-RoL.F2.4	2.4 Government officials in the legislative branch do not use public office for private gain	H	H
PI-RoL.F3	**Factor 3: Open Government**	**H**	**H**
PI-RoL.F3.1	3.1. Publicized laws and government data	H	H
PI-RoL.F3.2	3.2 Right to information	H	H
PI-RoL.F3.3	3.3 Civic participation	H	H
PI-RoL.F3.4	3.4 Complaint mechanisms	H	H
PI-RoL.F4	**Factor 4: Fundamental Rights**	**H**	**H**
PI-RoL.F4.1	4.1 Equal treatment and absence of discrimination	H	H
PI-RoL.F4.2	4.2 The right to life and security of the person is effectively guaranteed	H	H
PI-RoL.F4.3	4.3 Due process of law and rights of the accused	H	H
PI-RoL.F4.4	4.4 Freedom of opinion and expression is effectively guaranteed	H	H
PI-RoL.F4.5	4.5 Freedom of belief and religion is effectively guaranteed	H	H
PI-RoL.F4.6	4.6 Freedom from arbitrary interference with privacy is effectively guaranteed	H	H
PI-RoL.F4.7	4.7 Freedom of assembly and association is effectively guaranteed	H	H
PI-RoL.F4.8	4.8 Fundamental labor rights are effectively guaranteed	H	H
PI-RoL.F5	**Factor 5: Order and Security**	**H**	**H**
PI-RoL.F5.1	5.1 Crime is effectively controlled	H	H
PI-RoL.F5.2	5.2 Civil conflict is effectively limited	H	H
PI-RoL.F5.3	5.3 People do not resort to violence to redress personal grievances	H	H

PI_No_Other	Other Indicator-Dimension	FR Factor	DR Factor
PI-RoL.F6	**Factor 6: Regulatory Enforcement**	**H**	**H**
PI-RoL.F6.1	6.1 Government regulations are effectively enforced	H	H
PI-RoL.F6.2	6.2 Government regulations are applied and enforced without improper influence	H	H
PI-RoL.F6.3	6.3 Administrative proceedings are conducted without unreasonable delay	H	H
PI-RoL.F6.4	6.4 Due process is respected in administrative proceedings	H	H
PI-RoL.F6.5	6.5 The government does not expropriate without lawful process and adequate compensation	H	H
PI-RoL.F7	**Factor 7: Civil Justice**	**H**	**H**
PI-RoL.F7.1	7.1 People can access and afford civil justice	H	H
PI-RoL.F7.2	7.2 Civil justice is free of discrimination	H	H
PI-RoL.F7.3	7.3 Civil justice is free of corruption	H	H
PI-RoL.F7.4	7.4 Civil justice is free of improper government influence	H	H
PI-RoL.F7.5	7.5 Civil justice is not subject to unreasonable delay	H	H
PI-RoL.F7.6	7.6. Civil justice is effectively enforced	H	H
PI-RoL.F7.7	7.7 Alternative dispute resolution mechanisms are accessible, impartial, and effective	H	H
PI-RoL.F8	**Factor 8: Criminal Justice**	**H**	**H**
PI-RoL.F8.1	8.1 Criminal investigation system is effective	H	H
PI-RoL.F8.2	8.2 Criminal adjudication system is timely and effective	H	H
PI-RoL.F8.3	8.3 Correctional system is effective in reducing criminal behavior	H	H
PI-RoL.F8.4	8.4 Criminal system is impartial	H	H
PI-RoL.F8.5	8.5 Criminal system is free of corruption	H	H
PI-RoL.F8.6	8.6 Criminal system is free of improper government influence	H	H
PI-RoL.F8.7	8.7. Due process of law and the rights of the accused	H	H
WCO	**WCO Checklist for SAFE Framework**		
PI_WCO	**WCO Checklist for SAFE Framework**	**H**	**H**
PI_WCO1	1. Strategic Management	H	H
PI_WCO2	2. Resources	H	H
PI_WCO3	3. Legal Framework	H	H
PI_WCO4	4. Systems and Procedures	H	H
PI_WCO5	5. Information and Communication Technology	H	H
PI_WCO6	6. External Cooperation, Communication and Partnership	H	H
PI_WCO7	7. Integrity	H	H
BTI	**BTI Political and Economic Transformation**		
PI_BTI	**BTI Political and Economic Transformation Status**	**H**	**H**
PI_BTI1	1. SI | Democracy Status	H	H
PI_BTI2	2. SII | Economy Status	H	H
PI_BTI3	3. G | Governance Index	H	H
PI_BTI4	4. GII | Governance Performance	H	H
PI_BTI5	5. Level of Difficulty Category	H	H
OECD MAPS	**MAPSv 2009**		
PI_2009_MAPS	**OECD MAPS 2009**	**H**	**M**
PI_2009_MAPS_P1	Pillar I: Legislative and Regulatory Framework	H	M
PI_2009_MAPS_P2	Pillar II: Institutional Framework and Management Capacity	H	M
PI_2009_MAPS_P3	Pillar III: Procurement Operations and Market Practices	H	M

PI_No_Other	Other Indicator-Dimension	FR Factor	DR Factor
PI_2009_MAPS_P4	Pillar IV: Integrity and Transparency of the Public Procurement System	H	M
SPI	**Statistical Performance**		
PI-SPI	**SPI Index**	**M**	**H**
PI-SPI P1	P 1 - Data Use	M	H
PI-SPI P2	P 2 - Data Services	M	H
PI-SPI P3	P 3 - Data Products	M	H
PI-SPI P4	P 4 - Data Sources	M	H
PI-SPI P5	P 5 - Data Infrastructure	M	H

Table 7. Follow-the-Money Cycle Bridging Table – PEFA 2011

PI_No_2011	Indicator-Dimension_2011	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
A	**PFM-OUT-TURNS: Credibility of the budget**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-01	**Aggregate expenditure out-turn**	**Budget**														
PI-01.1	The difference between actual and original budget	Budget														
PI-02	**Composition of expenditure**	**Budget**														
PI-02.1	Extent of the variance in expenditure composition	Budget														
PI-02.2	Contingency reserve	Budget														
PI-03	**Aggregate revenue out-turn**	**Budget**														
PI-03.1	Domestic revenue out-turn	Budget														
PI-04	**Stock and monitoring of expenditure payment arrears**	**Budget**	**Treas**	**Proc**					**ARR**							
PI-04.1	Stock of expenditure payment arrears (as a % of actual total expenditure for the corresponding fiscal year) & any recent change in the stock.	Budget	Treas	Proc					ARR							
PI-04.2	Availability of data for monitoring the stock of expenditure payment arrears	Budget	Treas	Proc					ARR							
B	**Comprehensiveness and Transparency**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-05	**Classification of the budget**	**Budget**	**Treas**						**ARR**							
PI-05.1	The classification system	Budget	Treas						ARR							
PI-06	**Comprehensiveness of budget documentation**	**Budget**														
PI-06.1	Content of budget documentation	Budget														
PI-07	**Unreported government operations**	**Budget**	**Treas**						**ARR**							
PI-07.1	The level of extra-budgetary expenditure	Budget	Treas						ARR							
PI-07.2	Income /expenditure information on donor-funded projects	Budget	Treas						ARR							
PI-08	**Transparency of inter-governmental fiscal relations**	**Budget**	**Treas**													
PI-08.1	Transparent and rules based systems	Budget														
PI-08.2	Timeliness of reliable information	Budget														
PI-08.3	Extent of consolidation of fiscal data	Budget	Treas													
PI-09	**Oversight of aggregate other fiscal risk**	**Budget**	**Treas**						**ARR**							
PI-09.1	Monitoring of AGAs and PEs.	Budget	Treas						ARR							
PI-09.2	Monitoring of SNGs	Budget	Treas						ARR							
PI-10	**Public access to fiscal information**	**Budget**														
PI-10.1	Scope of public access to information	Budget														
C	**BUDGET CYCLE**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
C (i)	**Policy based Budgeting**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**

PI_No_2011	Indicator-Dimension_2011	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-11	**Orderliness and participation in the annual budget process**	**Budget**														
PI-11.1	Budget calendar	Budget														
PI-11.2	Political involvement in setting budget guidance	Budget														
PI-11.3	Approval by the legislature	Budget														
PI-12	**Multi-year perspective**	**Budget**	**Treas**								**BSM**					
PI-12.1	Multi -year fiscal forecasts and functional allocations	Budget														
PI-12.2	Scope and frequency of debt sustainability analysis	Budget	Treas								BSM					
PI-12.3	Sector strategies with multi-year costings of recurrent and investment	Budget														
PI-12.4	Linkages between investment budgets and forward estimates.	Budget														
C (ii)	**Predictability and Control in Budget Execution**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-13	**Transparency of taxpayer obligations and liabilities**									**Revenue**						
PI-13.1	Clarity and comprehensiveness of tax liabilities									Revenue						
PI-13.2	Taxpayer access to information									Revenue						
PI-13.3	Tax appeals mechanism.									Revenue						
PI-14	**Taxpayer registration and tax assessment**						**Audit**			**Revenue**						
PI-14.1	Controls in the taxpayer registration system									Revenue						
PI-14.3	Penalties for non-compliance									Revenue						
PI-14.2	Tax audit and fraud investigation						Audit			Revenue						
PI-15	**Effectiveness in collection of tax payments**	**Budget**	**Treas**							**Revenue**						
PI-15.1	Collection ratio for gross tax arrears	Budget	Treas							Revenue						
PI-15.2	Transfer of tax collections to the Treasury		Treas							Revenue						
PI-15.3	Accounts reconciliation between tax information and receipts		Treas							Revenue						
PI-16	**Predictability in the availability of funds for commitment**		**Treas**					**Payroll**								
PI-16.1	Cash flows forecasting and monitoring		Treas					Payroll								
PI-16.2	In-year information to MDAs on ceilings for commitment		Treas					Payroll								
PI-16.3	Adjustments to budget allocations		Treas					Payroll								
PI-17	**Recording and management of cash balances, debt and guarantees**		**Treas**								**BSM**					
PI-17.1	Quality of debt data recording and reporting		Treas								BSM					
PI-17.2	Extent of consolidation of the government's cash balances		Treas								BSM					
PI-17.3	Systems for contracting loans and issuance of guarantees		Treas								BSM					

PI_No_2011	Indicator-Dimension_2011	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-18	**Effectiveness of payroll controls**		**Treas**				**Audit**	**Payroll**								
PI-18.1	Integration and reconciliation of personnel and payroll data.		Treas					Payroll								
PI-18.2	Changes to personnel and payroll records		Treas					Payroll								
PI-18.3	Internal controls for personnel and payroll records		Treas					Payroll								
PI-18.4	Payroll audits		Treas				Audit	Payroll								
PI-19	**Competition, value for money and controls in procurement**			**Proc**												
PI-19.1	Legal and regulatory framework			Proc												
PI-19.2	Use of competitive procurement methods			Proc												
PI-19.3	Public access to procurement information			Proc												
PI-19.4	Independent administrative procurement complaints system			Proc												
PI-20	**Effectiveness of internal controls for non-salary expenditure**		**Treas**	**Proc**	**Contracts**	**V&P**			**ARR**							
PI-20.1	Effectiveness of expenditure commitment controls		Treas	Proc	Contracts	V&P			ARR							
PI-20.2	Understanding of other internal controls		Treas	Proc	Contracts	V&P			ARR							
PI-20.3	Compliance with rules		Treas	Proc	Contracts	V&P			ARR							
PI-21	**Effectiveness of internal audit**			**Proc**			**Audit**									
PI-21.1	Coverage and quality of the internal audit function			Proc			Audit									
PI-21.2	Frequency and distribution of reports			Proc			Audit									
PI-21.3	Extent of management response to internal audit findings			Proc			Audit									
C (iii)	**Accounting, Recording and Reporting**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-22	**Timeliness and regularity of accounts reconciliation**		**Treas**						**ARR**							
PI-22.1	Regularity of bank reconciliations		Treas						ARR							
PI-22.2	Regularity of reconciliation and clearance of suspense accounts		Treas						ARR							
PI-23	**Availability of information on resources of service delivery units**	**Budget**	**Treas**						**ARR**							
PI-23.1	Collection and processing of service delivery information	Budget	Treas						ARR							
PI-24	**Quality and timeliness of in-year budget reports**		**Treas**						**ARR**							
PI-24.1	Scope of reports		Treas						ARR							
PI-24.2	Timeliness of reports		Treas						ARR							
PI-24.3	Quality of information		Treas						ARR							
PI-25	**Quality and timeliness of annual financial statements**		**Treas**						**ARR**							
PI-25.1	Completeness of the financial statements		Treas						ARR							

PI_No_2011	Indicator-Dimension_2011	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-25.2	Timeliness of submission of the financial statements		Treas						ARR							
PI-25.3	Accounting standards		Treas						ARR							
C (iv)	**External Scrutiny and Audit**	**Budget**	**Treas**				**Audit**									
PI-26	**Scope, nature and follow-up of external audit**	**Budget**					**Audit**									
PI-26.1	Scope/nature of audit performed						Audit									
PI-26.2	Timeliness of submission of audit reports to legislature						Audit									
PI-26.3	Evidence of follow up on audit recommendations	Budget					Audit									
PI-27	**Legislative scrutiny of the annual budget law**	**Budget**					**Audit**									
PI-27.1	Scope of the legislature's scrutiny						Audit									
PI-27.2	Legislature's procedures						Audit									
PI-27.3	Time for the legislature to provide a response to budget proposals	Budget					Audit									
PI-27.4	Rules for in-year amendments to the budget without ex-ante approval						Audit									
PI-28	**Legislative scrutiny of external audit reports**	**Budget**					**Audit**									
PI-28.1	Timeliness of examination of audit reports by the legislature						Audit									
PI-28.2	Extent of hearings on key findings undertaken by the legislature						Audit									
PI-28.3	Recommendations by legislature and response by executive	Budget					Audit									
D	**D. Donor Practices**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
UD-01	**Predictability of Direct Budget Support**	**Budget**													**Granting**	
UD-01.1	Annual deviation of actual budget support	Budget													Granting	
UD-01.2	In-year timeliness of donor disbursements	Budget													Granting	
UD-02	**Financial information provided by donors**	**Budget**													**Granting**	
UD-02.1	Completeness and timeliness of budget estimates for projects	Budget													Granting	
UD-02.2	Frequency and coverage of reporting by donors	Budget													Granting	
UD-03	**Proportion of aid that is managed by use of national procedures**														**Granting**	
UD-03.1	Proportion of aid to central government that follow national procedures														Granting	

Table 8. Follow-the-Money Cycle Bridging Table – PEFA 2016

PI_No_16	Indicator-Dimension_2016	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
1.	**Budget reliability**	**Budget**	**Treas**												**Granting**	
PI-01	**Aggregate expenditure out-turn**	**Budget**													**Granting**	
PI-01.1	Aggregate expenditure outturn	Budget													Granting	
PI-02	**Expenditure composition outturn**	**Budget**													**Granting**	
PI-02.1	Expenditure composition outturn by function	Budget													Granting	
PI-02.2	Expenditure composition outturn by economic type	Budget													Granting	
PI-02.3	Expenditure from contingency reserves.	Budget													Granting	
PI-03	**Revenue outturn**	**Budget**													**Granting**	
PI-03.1	Aggregate revenue outturn	Budget													Granting	
PI-03.2	Revenue composition outturn	Budget													Granting	
2.	**Transparency of public finances**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-04	**Budget Classification**	**Budget**														
PI-04.1	Budget Classification	Budget														
PI-05	**Budget Documentation**	**Budget**														
PI-05.1	Budget Documentation	Budget														
PI-06	**Central government operations outside financial reports**	**Budget**	**Treas**						**ARR**						**Granting**	
PI-06.1	Expenditure outside financial reports	Budget	Treas						ARR						Granting	
PI-06.2	Revenue outside financial reports	Budget	Treas						ARR						Granting	
PI-06.3	Financial reports of extra-budgetary units	Budget	Treas						ARR						Granting	
PI-07	**Transfers to subnational governments**	**Budget**	**Treas**						**ARR**						**Granting**	
PI-07.1	System for allocating transfers	Budget	Treas						ARR						Granting	
PI-07.2	Timeliness of information on transfers	Budget	Treas						ARR						Granting	
PI-08	**Performance information for service delivery**	**Budget**	**Treas**						**ARR**							
PI-08.1	Performance plans for service delivery	Budget	Treas						ARR							
PI-08.2	Performance achieved for service delivery	Budget	Treas						ARR							
PI-08.3	Resources received by service delivery units	Budget	Treas						ARR							
PI-08.4	Performance evaluation for service delivery	Budget	Treas						ARR							
PI-09	**Public access to fiscal information**	**Budget**	**Treas**													
PI-09.1	Public access to fiscal information	Budget	Treas													
3.	**Management of assets and liabilities**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-10	**Fiscal risk reporting**	**Budget**	**Treas**						**ARR**		**BSM**					
PI-10.1	Monitoring of public corporations	Budget	Treas						ARR		BSM					
PI-10.2	Monitoring of sub-national government (SNG)	Budget	Treas						ARR		BSM					
PI-10.3	Contingent liabilities and other fiscal risks	Budget	Treas						ARR		BSM					
PI-11	**Public investment management**	**Budget**	**Treas**						**ARR**							
PI-11.1	Economic analysis of investment proposals	Budget	Treas													
PI-11.2	Investment project selection	Budget	Treas													
PI-11.3	Investment project costing	Budget	Treas													
PI-11.4	Investment project monitoring	Budget	Treas						ARR							

PI_No_16	Indicator-Dimension_2016	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-12	**Public asset management**	**Budget**	**Treas**						**ARR**		**BSM**					
PI-12.1	Financial asset monitoring	Budget	Treas						ARR		BSM					
PI-12.2	Nonfinancial asset monitoring	Budget	Treas						ARR		BSM					
PI-12.3	Transparency of asset disposal	Budget	Treas						ARR		BSM					
PI-13	**Debt management**	**Budget**	**Treas**						**ARR**		**BSM**					
PI-13.1	Recording and reporting of debt and guarantees	Budget	Treas						ARR		BSM					
PI-13.2	Approval of debt and guarantees	Budget	Treas						ARR		BSM					
PI-13.3	Debt management strategy	Budget	Treas						ARR		BSM					
4.	**Policy-based fiscal strategy and budgeting**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-14	**Macroeconomic and fiscal forecasting**	**Budget**	**Treas**													
PI-14.1	Macroeconomic forecasts	Budget	Treas													
PI-14.2	Fiscal forecasts	Budget	Treas													
PI-14.3	Macro-fiscal sensitivity analysis	Budget	Treas													
PI-15	**Fiscal strategy**	**Budget**	**Treas**													
PI-15.1	Fiscal impact of policy proposals	Budget	Treas													
PI-15.2	Fiscal strategy adoption	Budget	Treas													
PI-15.3	Reporting on fiscal outcomes	Budget	Treas													
PI-16	**Medium term perspective in expenditure budgeting**	**Budget**														
PI-16.1	Medium-term expenditure estimates	Budget														
PI-16.2	Medium-term expenditure ceilings	Budget														
PI-16.3	Alignment of strategic plans and medium-term budgets	Budget														
PI-16.4	Consistency of budgets with previous year estimates	Budget														
PI-17	**Budget preparation process**	**Budget**														
PI-17.1	Budget calendar	Budget														
PI-17.2	Guidance on budget preparation	Budget														
PI-17.3	Budget submission to the legislature	Budget														
PI-18	**Legislative scrutiny of budgets**	**Budget**					**Audit**									
PI-18.1	Scope of budget scrutiny	Budget					Audit									
PI-18.2	Legislative procedures for budget scrutiny	Budget					Audit									
PI-18.3	Timing of budget approval	Budget					Audit									
PI-18.4	Rules for budget adjustments by the executive	Budget					Audit									
5.	**Predictability and control in budget execution**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-19	**Revenue administration**	**Budget**	**Treas**				**Audit**			**Revenue**	**BSM**					
PI-19.1	Rights and obligations for revenue measures	Budget	Treas							Revenue	BSM					
PI-19.2	Revenue risk management	Budget	Treas							Revenue	BSM					
PI-19.3	Revenue audit and investigation	Budget	Treas				Audit			Revenue	BSM					
PI-19.4	Revenue arrears monitoring	Budget	Treas							Revenue	BSM					
PI-20	**Accounting for revenues**	**Budget**	**Treas**						**ARR**	**Revenue**						
PI-20.1	Information on revenue collections	Budget	Treas						ARR	Revenue						
PI-20.2	Transfer of revenue collections	Budget	Treas						ARR	Revenue						
PI-20.3	Revenue accounts reconciliation	Budget	Treas						ARR	Revenue						

PI_No_16	Indicator-Dimension_2016	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-21	**Predictability of in-year resource allocation**	**Budget**	**Treas**					**Payroll**	**ARR**		**BSM**					
PI-21.1	Consolidation of cash balances		Treas						ARR		BSM					
PI-21.2	Cash forecasting and monitoring		Treas						ARR		BSM					
PI-21.3	Information on commitment ceilings		Treas					Payroll	ARR		BSM					
PI-21.4	Significance of in-year budget adjustments		Treas						ARR		BSM					
PI-22	**Expenditure arrears**	**Budget**	**Treas**						**ARR**		**BSM**					
PI-22.1	Stock of expenditure arrears	Budget	Treas						ARR		BSM					
PI-22.2	Expenditure arrears monitoring	Budget	Treas						ARR		BSM					
PI-23	**Payroll controls**	**Budget**					**Audit**	**Payroll**								
PI-23.1	Integration of payroll and personnel records	Budget						Payroll								
PI-23.2	Management of payroll changes							Payroll								
PI-23.3	Internal control of payroll							Payroll								
PI-23.4	Payroll audit						Audit	Payroll								
PI-24	**Procurement**			**Proc**												
PI-24.1	Procurement monitoring			Proc												
PI-24.2	Procurement methods			Proc												
PI-24.3	Public access to procurement information			Proc												
PI-24.4	Procurement complaints management			Proc												
PI-25	**Internal controls on nonsalary expenditure**		**Treas**		**Contracts**	**V&P**										
PI-25.1	Segregation of duties		Treas		Contracts	V&P										
PI-25.2	Effectiveness of expenditure commitment controls		Treas		Contracts	V&P										
PI-25.3	Compliance with payment controls		Treas		Contracts	V&P										
PI-26	**Internal audit effectiveness**		**Treas**				**Audit**									
PI-26.1	Coverage of internal audit		Treas				Audit									
PI-26.2	Nature of audits and standards applied		Treas				Audit									
PI-26.3	Internal audit activity and reporting		Treas				Audit									
PI-26.4	Response to internal audits		Treas				Audit									
6.	**Accounting and reporting**	**Budget**	**Treas**				**Audit**		**ARR**		**BSM**					
PI-27	**Financial data integrity**		**Treas**						**ARR**		**BSM**					
PI-27.1	Bank account reconciliation		Treas						ARR		BSM					
PI-27.2	Suspense accounts		Treas						ARR		BSM					
PI-27.3	Advance accounts		Treas						ARR		BSM					
PI-27.4	Financial data integrity processes		Treas						ARR		BSM					
PI-28	**In-year budget reports**	**Budget**	**Treas**						**ARR**							
PI-28.1	Coverage and comparability of reports	Budget	Treas						ARR							
PI-28.2	Timing of in-year budget reports	Budget	Treas						ARR							
PI-28.3	Accuracy of in-year budget reports	Budget	Treas						ARR							
PI-29	**Annual financial reports**	**Budget**	**Treas**				**Audit**		**ARR**							
PI-29.1	Completeness of annual financial reports	Budget	Treas				Audit		ARR							
PI-29.2	Submission of reports for external audit	Budget	Treas				Audit		ARR							
PI-29.3	Accounting standards	Budget	Treas				Audit		ARR							
7.	**External scrutiny and audit**	**Budget**	**Treas**				**Audit**									

PI_No_16	Indicator-Dimension_2016	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-30	**External audit**	**Budget**					**Audit**									
PI-30.1	Audit coverage and standards						Audit									
PI-30.2	Submission of audit reports to the legislature						Audit									
PI-30.3	External audit follow-up	Budget					Audit									
PI-30.4	Supreme Audit Institution (SAI) independence						Audit									
PI-31	**Legislative scrutiny of audit reports**	**Budget**					**Audit**									
PI-31.1	Timing of audit report scrutiny						Audit									
PI-31.2	Hearings on audit findings						Audit									
PI-31.3	Recommendations on audit by the legislature	Budget					Audit									
PI-31.4	Transparency of legislative scrutiny of audit reports						Audit									
8.	**Predictability of Transfers from Higher Level of Government**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
UHLG-01	**Predictability of Transfers from Higher Level of Government**	**Budget**	**Treas**													
UHLG-01.1	Annual deviation of actual total HLG transfers from the original total estimated amount provided by HLG to the SN entity for inclusion in the latter's budget.	Budget														
UHLG-01.2	Annual variance between actual and estimated transfers of earmarked grants.	Budget														
UHLG-01.3	In-year timeliness of transfers from HLG (compliance with timetables for in-year distribution of disbursements agreed within one month of the start of the SN fiscal year)	Budget	Treas													

Table 9. Follow-the-Money Cycle Bridging Table – Other Diagnostics

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
FS	**Fiscal Space**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-FS	**Fiscal Space Competencies**	**Budget**														
PI-FS.1	Fiscal space analysis competencies (estimation, creation and filling)	Budget														
CBE	**Controls in budget execution**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-NTR	**Transparency and effectiveness of administrative arrangements for non-tax revenue**									**Revenue**						
PI-NTR.1	Effectiveness of measures for natural resource import									Revenue						

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
	and export industry registration and licensing															
PI-NTR.2	Extent to which authorised fees are not charged									Revenue						
PI-NTR.3	Extent to which unauthorised fees are charged									Revenue						
PI-CM	**Competition, value for money and controls in contract management**			**Proc**	**Contracts**											
PI-CM.1	Extent of procedures in place to monitor compliance and independence in carrying out procurement and managing contracts			Proc	Contracts											
PI-CM.2	Extent of procedures in place to identify and address potential conflicts of interest in awarding contracts and carrying out procurement abd contract management			Proc	Contracts											
PI-CM.3	Extent of active management (revisions and cancellations etc) of contracts based on contractors' performance to ensure continuing value for money]			Proc	Contracts											
PI-PC	**Controls in procured goods**			**Proc**		**V&P**	**Audit**									
PI-PC.1	Extent of quality inspection and audit at receipt of goods and services procured			Proc		V&P	Audit									
PI-PC.2	Extent of adequate storage system and prevention of stock out and theft [in the sector]			Proc		V&P	Audit									
PI-GRPFM	**Gender**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-GRPFM–1	**Gender impact analysis of budget policy proposals**	Budget														
PI-GRPFM–1.1	Gender impact analysis of expenditure policy proposals	Budget														
PI-GRPFM–1.2	Gender impact analysis of revenue policy proposals	Budget														
PI-GRPFM–2	**Gender responsive public investment management**	Budget	Treas	Proc	Contracts											

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-GRPFM–2.1	Gender responsive public investment management	Budget	Treas	Proc	Contracts											
PI-GRPFM–3	**Gender responsive budget circular**	Budget														
PI-GRPFM–3.1	Gender responsive budget circular	Budget														
PI-GRPFM–4	**Gender responsive budget proposal documentation**	Budget														
PI-GRPFM–4.1	Gender responsive budget proposal documentation	Budget														
PI-GRPFM–5	**Sex-disaggregated performance information for service delivery**	Budget														
PI-GRPFM–5.1	Sex-disaggregated performance plans for service delivery	Budget														
PI-GRPFM–5.2	Sex-disaggregated performance achieved for service delivery	Budget														
PI-GRPFM–6	**Tracking budget expenditure for gender equality**	Budget														
PI-GRPFM–6.1	Tracking budget expenditure for gender equality	Budget														
PI-GRPFM–7	**Gender responsive reporting**	Budget	Treas						ARR							
PI-GRPFM–7.1	Gender responsive reporting	Budget	Treas						ARR							
PI-GRPFM–8	**Evaluation of gender impacts of service delivery**	Budget	Treas						ARR							
PI-GRPFM–8.1	Evaluation of gender impacts of service delivery	Budget	Treas						ARR							
PI-GRPFM–9	**Legislative scrutiny of gender impacts of the budget**	Budget														
PI-GRPFM–9.1	Gender-responsive legislative scrutiny of budgets	Budget														
PI-GRPFM–9.2	Gender responsive legislative scrutiny of audit reports	Budget														
BS	**Banking Supervision**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-BS	**Compliance with Basel Core Principles and AML**						Audit						Banking			

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-BS.1	Compliance with preconditions for effective banking supervision						Audit						Banking			
PI-BS.2	Compliance with licensing and structure, prudential regulations and requirements and methods of ongoing banking supervision						Audit						Banking			
PI-BS.3	Compliance with information requirements, formal powers of supervisors and cross-border banking						Audit						Banking			
AML	**Anti-Money Laundering**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-AML	**Effectiveness of anti-money laundering**						**Audit**					AC	Banking			
PI-AML.1	Risk of money laundering and terrorist financing						Audit					AC	Banking			
SC	**Statistics**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-SC	**Capacity for Social and Economic Statistics**	Budget												Stats		
PI-SC.1	Compliance with methodology	Budget												Stats		
PI-SC.2	Adequacy of source data	Budget												Stats		
PI-SC.3	Periodicity and timeliness of statistics	Budget												Stats		
AC	**Anti-Corruption**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-AC	**Effectiveness of Anti-Corruption Measures**	**Budget**			**Proc**		**Audit**					**AC**				
PI-AC.1	Effectiveness and enforcement of administrative and criminal sanctions (including discipline and referral procedures)	Budget			Proc		Audit					AC				
PI-AC.2	The number of the listed elements of anti-corruption measures fulfilled: a) signed and ratified the UN Convention Against Corruption; b) an anti-corruption strategy; c) strategic objectives are clear and being implemented; and d) a clear self-assessment	Budget			Proc		Audit					AC				

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-AC.3	The number of the listed elements for prevention and enforcement fulfilled: a) public sector ethics and asset declarations; b) access to information and whistle-blower protection; c) public education; and d) private sector standards including accounting and auditing standards.	Budget			Proc		Audit					AC				
PI-AC.4	Completeness of Sanctions in Anticorruption Laws	Budget			Proc		Audit					AC				
PI-AC.5	Powers of Oversight Institutions	Budget			Proc		Audit					AC				
PI-AC.6	Funding of anti-corruption bodies	Budget			Proc		Audit					AC				
PI-AC.7	Quality of new preventative measures being implemented	Budget			Proc		Audit					AC				
PI-AC.8	International Cooperation on Extradition, Mutual Legal Assistance, Transfer of Criminal Proceedings, Law Enforcement and Special Investigations.	Budget			Proc		Audit					AC				
PI-AC.9	Effectiveness of Asset Recovery Measures	Budget			Proc		Audit					AC				
PI-AC.10	Technical assistance and information exchange	Budget			Proc		Audit					AC				
Coms	**Communications**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-Coms	**Effectiveness of Government communications in public finance**	**Budget**					**Audit**									**Coms**
PI-Coms.1	Effectiveness of horizontal communication	Budget					Audit									Coms
PI-Coms.2	Effectiveness of vertical communication	Budget					Audit									Coms
PI-Coms.3	Effectiveness of internal communication	Budget					Audit									Coms
PI-Coms.4	Effectiveness of external communication	Budget					Audit									Coms
TADAT	**Taxation**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-TADAT	**Tax Performance Areas**															

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-TADAT - POA 1	Integrity of the Registered Taxpayer Base															
PI-TADAT - POA 2	Effective Risk Management															
PI-TADAT - POA 3	Performance Measurement Framework															
PI-TADAT - POA 4	Timely Filing of Tax Declarations															
PI-TADAT - POA 5	Timely Payment of Taxes															
PI-TADAT - POA 6	Accurate Reporting in Declarations															
PI-TADAT - POA 7	Tax Dispute Resolution															
PI-TADAT - POA 8	Efficient Revenue Management															
PI-TADAT - POA 9	Accountability and Transparency															
GF	**Grant Funding Systems**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-GF1	**Predictability of Performance-based Block Grants (Budget support)**	**Budget**	**Treas**												**Granting**	
PI-GF1.1	Annual deviation of actual grants from the forecast provided by the federal agencies at least six weeks prior to the government submitting its budget proposals to the legislature (or equivalent approving body).	Budget	Treas												Granting	
PI-GF1.2	In-year timeliness of granting agency disbursements (compliance with aggregate quarterly estimates)	Budget	Treas												Granting	
PI-GF2	**Grant information (third party payers / inkind assistance) provided by donor agencies for budgeting and reporting on project and program aid**	**Budget**													**Granting**	
PI-GF2.1	Completeness and timeliness of budget estimates by granting agencies for project support.	Budget													Granting	

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-GF2.2	Frequency and coverage of reporting by granting agencies on actual grant flows	Budget													Granting	
PI-GF3	**Proportion of grant funds that is managed by use of national procedures**	**Budget**													**Granting**	
PI-GF3.1	Overall proportion of grant funds to central government that are managed through national procedures (procurement, payment/ accounting, audit and reporting)	Budget													Granting	
CPI	**Corruption Perceptions**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-CPI	**Corruption Perception Index**						**Audit**					AC				
PI-CPI.1	Corruption Perception Index Score Grade						Audit					AC				
OBI	**Open Budget Survey**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-OBI	**Open Budget Index**	**Budget**					**Audit**					AC				
PI-OBI.1	Open Budget Index Rank Score Grade	Budget					Audit					AC				
WGI	**Worldwide Governance Indicators**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-WGI	**Worldwide Governance Indicators (Avg)**						**Audit**					**AC**				
PI-WGI.1	Voice and Accountability						Audit					AC				
PI-WGI.2	Political Stability						Audit					AC				
PI-WGI.3	Government Effectiveness						Audit					AC				
PI-WGI.4	Regulatory Quality						Audit					AC				
PI-WGI.5	Rule of Law						Audit					AC				
PI-WGI.6	Control of Corruption						Audit					AC				
CPIA	**IDA resource allocation index (Risk Adj)**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-CPIA	**IDA resource allocation index**	**Budget**														
PI-CPIA.A	**Economic Management Cluster**	**Budget**														
PI-CPIA.A.1	Macroeconomic Management	Budget														
PI-CPIA.A.2	Fiscal Policy	Budget														
PI-CPIA.A.3	Debt Policy	Budget														
PI-CPIA.B	**Structural Policies Cluster**	**Budget**														
PI-CPIA.B.1	Trade	Budget														
PI-CPIA.B.2	Financial Sector	Budget														

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-CPIA.B.3	Business Regulatory Environment	Budget														
PI-CPIA.C	**Policies For Social Inclusion/Equity Cluster**	**Budget**														
PI-CPIA.C.1	Gender Equality	Budget														
PI-CPIA.C.2	Equity Of Public Resource Use	Budget														
PI-CPIA.C.3	Building Human Resources	Budget														
PI-CPIA.C.4	Social Protection	Budget														
PI-CPIA.C.5	Policy And Institutions For Environmental Sustainability	Budget														
PI-CPIA.D	**Public Sector Management And Institutions Cluster**	**Budget**					**Audit**					**AC**				
PI-CPIA.D.1	Property Rights And Rule-Based Governance	Budget					Audit					AC				
PI-CPIA.D.2	Quality Of Budgetary And Financial Management	Budget					Audit					AC				
PI-CPIA.D.3	Efficiency Of Revenue Mobilization	Budget					Audit					AC				
PI-CPIA.D.4	Quality Of Public Administration	Budget					Audit					AC				
PI-CPIA.D.5	Transparency, Accountability, And Corruption In The Public Sector	Budget					Audit					AC				
RoL	**Rule of Law Index (Risk Adj)**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-RoL	**WJP Rule of Law Index: Overall Score**	**Budget**					**Audit**					**AC**				
PI-RoL.F1	**Factor 1: Constraints on Government Powers**	**Budget**														
PI-RoL.F1.1	1.1 Government powers are effectively limited by the legislature	Budget														
PI-RoL.F1.2	1.2 Government powers are effectively limited by the judiciary	Budget														
PI-RoL.F1.3	1.3 Government powers are effectively limited by independent auditing and review	Budget														
PI-RoL.F1.4	1.4 Government officials are sanctioned for misconduct	Budget														
PI-RoL.F1.5	1.5 Government powers are subject to non-governmental checks	Budget														

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-RoL.F1.6	1.6 Transition of power is subject to the law	Budget														
PI-RoL.F2	**Factor 2: Absence of Corruption**	**Budget**														
PI-RoL.F2.1	2.1 Government officials in the executive branch do not use public office for private gain	Budget														
PI-RoL.F2.2	2.2 Government officials in the judicial branch do not use public office for private gain	Budget														
PI-RoL.F2.3	2.3 Government officials in the police and the military do not use public office for private gain	Budget														
PI-RoL.F2.4	2.4 Government officials in the legislative branch do not use public office for private gain	Budget														
PI-RoL.F3	**Factor 3: Open Government**	**Budget**														
PI-RoL.F3.1	3.1. Publicized laws and government data	Budget														
PI-RoL.F3.2	3.2 Right to information	Budget														
PI-RoL.F3.3	3.3 Civic participation	Budget														
PI-RoL.F3.4	3.4 Complaint mechanisms	Budget														
PI-RoL.F4	**Factor 4: Fundamental Rights**	**Budget**														
PI-RoL.F4.1	4.1 Equal treatment and absence of discrimination	Budget														
PI-RoL.F4.2	4.2 The right to life and security of the person is effectively guaranteed	Budget														
PI-RoL.F4.3	4.3 Due process of law and rights of the accused	Budget														
PI-RoL.F4.4	4.4 Freedom of opinion and expression is effectively guaranteed	Budget														
PI-RoL.F4.5	4.5 Freedom of belief and religion is effectively guaranteed	Budget														
PI-RoL.F4.6	4.6 Freedom from arbitrary interference with privacy is effectively guaranteed	Budget														

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-RoL.F4.7	4.7 Freedom of assembly and association is effectively guaranteed	Budget														
PI-RoL.F4.8	4.8 Fundamental labor rights are effectively guaranteed	Budget														
PI-RoL.F5	**Factor 5: Order and Security**	**Budget**														
PI-RoL.F5.1	5.1 Crime is effectively controlled	Budget														
PI-RoL.F5.2	5.2 Civil conflict is effectively limited	Budget														
PI-RoL.F5.3	5.3 People do not resort to violence to redress personal grievances	Budget														
PI-RoL.F6	**Factor 6: Regulatory Enforcement**	**Budget**														
PI-RoL.F6.1	6.1 Government regulations are effectively enforced	Budget														
PI-RoL.F6.2	6.2 Government regulations are applied and enforced without improper influence	Budget														
PI-RoL.F6.3	6.3 Administrative proceedings are conducted without unreasonable delay	Budget														
PI-RoL.F6.4	6.4 Due process is respected in administrative proceedings	Budget														
PI-RoL.F6.5	6.5 The government does not expropriate without lawful process and adequate compensation	Budget														
PI-RoL.F7	**Factor 7: Civil Justice**	**Budget**														
PI-RoL.F7.1	7.1 People can access and afford civil justice	Budget														
PI-RoL.F7.2	7.2 Civil justice is free of discrimination	Budget														
PI-RoL.F7.3	7.3 Civil justice is free of corruption	Budget														
PI-RoL.F7.4	7.4 Civil justice is free of improper government influence	Budget														
PI-RoL.F7.5	7.5 Civil justice is not subject to unreasonable delay	Budget														
PI-RoL.F7.6	7.6. Civil justice is effectively enforced	Budget														

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI-RoL.F7.7	7.7 Alternative dispute resolution mechanisms are accessible, impartial, and effective	Budget														
PI-RoL.F8	**Factor 8: Criminal Justice**	**Budget**														
PI-RoL.F8.1	8.1 Criminal investigation system is effective	Budget														
PI-RoL.F8.2	8.2 Criminal adjudication system is timely and effective	Budget														
PI-RoL.F8.3	8.3 Correctional system is effective in reducing criminal behavior	Budget														
PI-RoL.F8.4	8.4 Criminal system is impartial	Budget														
PI-RoL.F8.5	8.5 Criminal system is free of corruption	Budget														
PI-RoL.F8.6	8.6 Criminal system is free of improper government influence	Budget														
PI-RoL.F8.7	8.7. Due process of law and the rights of the accused	Budget														
WCO	**WCO Checklist for SAFE**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI_WCO	**WCO Checklist for SAFE Framework**										**Revenue**					
PI_WCO1	1. Strategic Management										Revenue					
PI_WCO2	2. Resources										Revenue					
PI_WCO3	3. Legal Framework										Revenue					
PI_WCO4	4. Systems and Procedures										Revenue					
PI_WCO5	5. Information and Communication Technology										Revenue					
PI_WCO6	6. External Cooperation, Communication and Partnership										Revenue					
PI_WCO7	7. Integrity										Revenue					
BTI	**BTI Political and Economic Transformation**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI_BTI	**BTI Political and Economic Transformation Status**						Audit					AC				
PI_BTI1	1. SI | Democracy Status						Audit					AC				
PI_BTI2	2. SII | Economy Status						Audit					AC				
PI_BTI3	3. G | Governance Index						Audit					AC				
PI_BTI4	4. GII | Governance Performance						Audit					AC				

PI_No_Other	Indicator-Dimension	Budget	Treas	Proc	Contracts	V&P	Audit	Payroll	ARR	Revenue	BSM	AC	Banking	Stats	Granting	Coms
PI_BTI5	5. Level of Difficulty Category						Audit					AC				
OECD MAPS	**MAPSv 2009**	**Budget**	**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI_2009_MAPS	**OECD MAPS 2009**			Proc												
PI_2009_MAPS_P1	Pillar I: Legislative and Regulatory Framework			Proc												
PI_2009_MAPS_P2	Pillar II: Institutional Framework and Management Capacity			Proc												
PI_2009_MAPS_P3	Pillar III: Procurement Operations and Market Practices			Proc												
PI_2009_MAPS_P4	Pillar IV: Integrity and Transparency of the Public Procurement System			Proc												
SPI	**Statistical Performance**		**Treas**	**Proc**	**Contracts**	**V&P**	**Audit**	**Payroll**	**ARR**	**Revenue**	**BSM**	**AC**	**Banking**	**Stats**	**Granting**	**Coms**
PI-SPI	**SPI Index**													Stats		
PI-SPI P1	P 1 - Data Use													Stats		
PI-SPI P2	P 2 - Data Services													Stats		
PI-SPI P3	P 3 - Data Products													Stats		
PI-SPI P4	P 4 - Data Sources													Stats		
PI-SPI P5	P 5 - Data Infrastructure													Stats		

Attachment E: Reconciliation of Economic COFOG Classification Data on IMF GFS/COFOG Databases by Government Sector

283. **As part of work to estimate the costs of corruption and inefficiency from weak public finance systems some consistency issues were discovered in Government Finance Statistics (GFS) data** held on IMF fiscal databases. GFS is an internationally recognized statistical reporting framework that was designed to help governments strengthen their capacity to formulate fiscal policy and monitor fiscal performance. The GFS framework establishes a common language that analysts can use to understand and guide complex government activities (IMF, 2017). The framework is also designed to work with other statistical systems, most importantly, the System of National Accounts (SNA)/ESA 2010).

284. **The IMF GFS economic and functional databases are different databases, and often functional expenditure data is missing** for a country or sometimes COFOG expenditure totals are different to economic classification database for total expenditures, though they should be consistent, especially if standard bridging table methodologies are used to create COFOG tables. Multi-dimensional and multi-resolution fiscal consolidation systems allow a single database to be used to report on both economic and functional classifications, amongst others. Assessment of accuracy of economic and COFOG classified expenditure data was conducted. er

285. **The review found a lot of countries had COFOG totals that were very different to the economic classification totals** including for different levels of the general government sector. Less problems were found at the general government sector comparted to budgetary central government sector, essentially reflecting statistical performance differences between higher and low income countries (as higher income countries tend to deliver more complete GFS data, comparted to low income countries. Results are below. Some differences can be explainable if COFOG tables are cash rather than accrual, though figures out by greater than 20% would be unusually. Hence colour thresholds used to signify size (absolute percentage difference) set are: 0.3% Green, 20% Yellow, Above 20% Red.

Figure 28. QA of General Government Economic and COFOG Reporting 2016-20

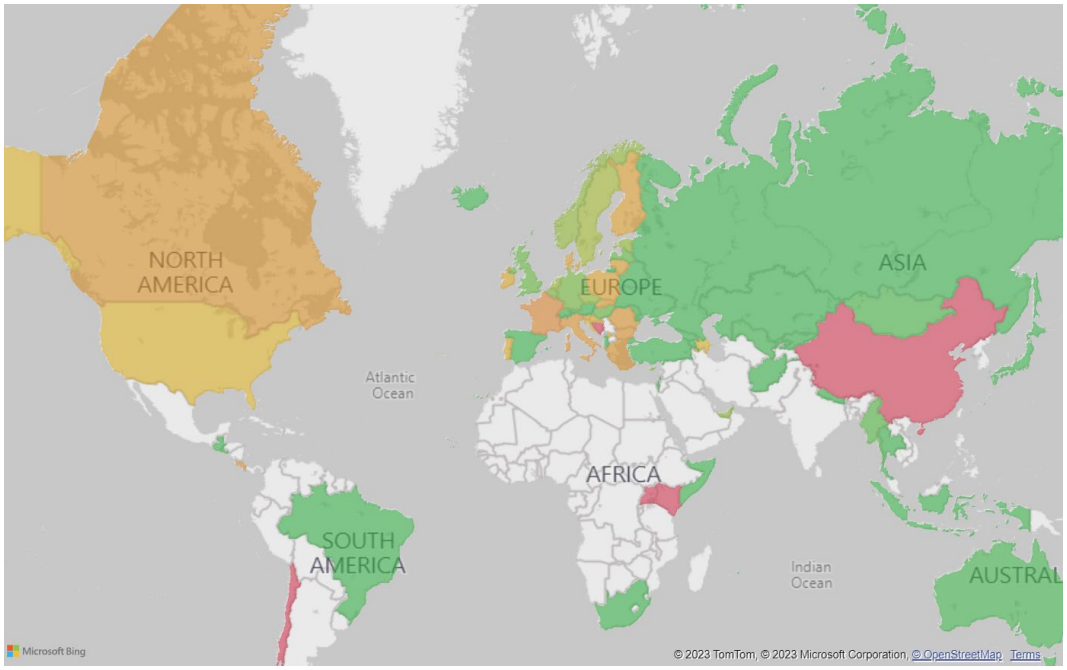


Table 38. QA of General Government Economic and COFOG Reporting 2016-20

Sector Name Long	2016	2017	2018	2019	2020	Total
1-General government						
Austria	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Hong Kong	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Georgia	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Spain	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Indonesia	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Brazil	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Afghanistan	0.00%	0.00%				**0.00%**
Switzerland	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Macao	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Iceland	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
South Africa	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Turkey	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Ukraine	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Thailand	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Moldova	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Japan	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Nepal				0.00%	0.00%	**0.00%**
Israel	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Belarus	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Albania	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Russia	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Kazakhstan	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Guatemala	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Kyrgyz Republic	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
New Zealand	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Somalia		0.00%				**0.00%**
Armenia	0.00%	0.00%	0.01%	0.00%	0.00%	**0.00%**
El Salvador	0.00%	0.00%	0.00%	0.00%	0.07%	**0.02%**
Uzbekistan	0.00%	0.10%	0.04%	0.15%	0.15%	**0.09%**
Mauritius	0.00%	0.00%	0.51%	0.00%	0.00%	**0.10%**
Australia	0.08%	0.06%	0.09%	0.09%	0.34%	**0.14%**
Mongolia	1.63%	0.01%	0.00%	0.00%	0.00%	**0.31%**
Kiribati	0.00%	0.00%	0.14%	2.01%	0.00%	**0.50%**
Myanmar	0.78%	0.60%	0.90%	0.30%		**0.60%**
Latvia	0.90%	0.92%	0.99%	1.12%	0.42%	**0.86%**
Hungary	0.76%	0.84%	0.93%	1.03%	0.84%	**0.89%**
United Kingdom	2.26%	0.75%	0.92%	0.28%	2.00%	**0.91%**
Cyprus	1.28%	1.28%	1.03%	1.29%	0.85%	**1.12%**
Germany	1.18%	1.18%	1.21%	1.18%	1.09%	**1.16%**
Belgium	1.41%	1.44%	1.42%	1.40%	1.28%	**1.39%**
United Arab Emirates	0.59%	4.28%	4.13%	0.00%	0.00%	**1.57%**
Norway	1.63%	1.66%	1.69%	1.70%	1.63%	**1.66%**
Estonia	1.67%	1.69%	1.68%	1.76%	1.70%	**1.70%**
Czech Republic	1.68%	1.74%	1.81%	1.85%	1.50%	**1.71%**
Netherlands	1.84%	1.88%	1.90%	1.86%	1.65%	**1.82%**

Sector Name Long	2016	2017	2018	2019	2020	
Sweden	1.89%	1.98%	2.08%	2.03%	2.07%	**2.02%**
Kosovo	0.00%	0.00%	0.00%	17.81%	0.00%	**3.31%**
Azerbaijan	0.07%	0.04%	0.21%	14.34%		**3.95%**
United States	4.40%	4.49%	4.33%	3.72%	3.91%	**4.15%**
Croatia	8.65%	7.47%	7.30%	0.00%	0.00%	**4.40%**
Portugal	1.51%	1.42%	1.50%	9.14%	10.50%	**4.99%**
Slovenia	6.26%	4.69%	4.77%	4.84%	5.93%	**5.31%**
Ireland	5.80%	5.65%	6.75%	5.63%	5.64%	**5.89%**
Poland	6.24%	6.62%	5.99%	5.66%	7.26%	**6.39%**
Lithuania	7.26%	6.46%	6.61%	6.41%	7.35%	**6.84%**
Finland	7.10%	6.72%	6.84%	6.82%	7.18%	**6.94%**
Denmark	6.35%	6.61%	7.43%	6.79%	7.78%	**7.02%**
Slovak Republic	5.16%	5.78%	7.22%	7.13%	9.65%	**7.12%**
Canada	10.60%	10.55%	10.28%	8.58%	2.58%	**8.07%**
Romania	8.89%	8.16%	9.01%	7.17%	8.27%	**8.26%**
Greece	5.21%	5.91%	8.28%	8.03%	13.70%	**8.40%**
Bulgaria	7.20%	9.72%	10.32%	5.37%	9.77%	**8.55%**
Italy	7.61%	8.65%	8.10%	8.04%	10.37%	**8.60%**
Malta	8.14%	8.74%	10.51%	9.12%	8.30%	**8.97%**
Costa Rica	11.07%	15.51%	4.50%	8.26%	6.37%	**9.06%**
France	10.35%	10.91%	10.15%	10.14%	10.15%	**10.33%**
Luxembourg	11.19%	11.76%	11.86%	11.71%	11.48%	**11.61%**
Singapore	17.45%	20.97%	17.63%	14.46%	7.35%	**14.54%**
Cabo Verde	19.04%					**19.04%**
Seychelles	0.00%		0.00%			**47.46%**
Chile	0.00%	0.00%	0.00%			**70.28%**
Nauru	0.00%	0.00%	0.00%			**93.80%**
China	97.77%	97.20%	97.37%	97.28%	97.16%	**97.33%**
San Marino				0.00%	0.00%	**143.14%**
Bosnia and Herzegovina	0.00%	0.00%				**180.23%**
Kenya					31.17%	**331.53%**
Uganda	1.11%					**529.73%**

Figure 29. QA of Budgetary Central Government Economic and COFOG Reporting 2016-20

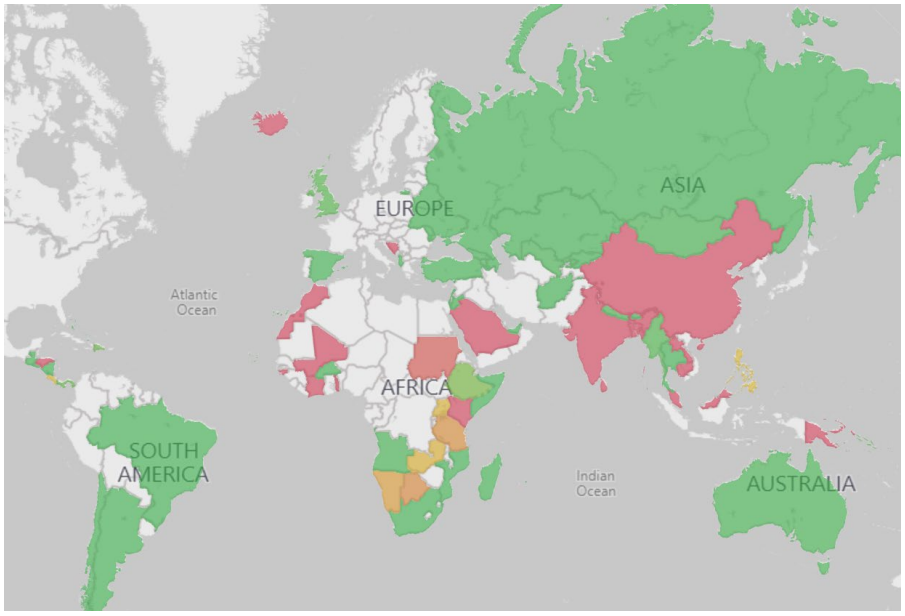


Table 39. QA of Budgetary Central Government Economic and COFOG Reporting 2018-20

Sector Name Long	2016	2017	2018	2019	2020	Total
4-Budgetary central government						
Georgia	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Spain	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Afghanistan	0.00%	0.00%				**0.00%**
Guatemala	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Bhutan	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Macao	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
South Africa	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Samoa	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Turkey	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Brazil	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Argentina	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Seychelles	0.00%	0.00%	0.00%			**0.00%**
Ukraine	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Russia	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Thailand	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Mauritius	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Nicaragua	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Belarus	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Moldova	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
United Arab Emirates	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Albania	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Israel	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
El Salvador	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Lebanon	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Kazakhstan	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Kyrgyz Republic	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Burkina Faso	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Bahamas	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Armenia	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Somalia		0.00%				**0.00%**
Bahrain	0.00%	0.00%	0.00%	0.00%	0.01%	**0.00%**
Jordan	0.00%	0.01%	0.00%	0.00%	0.00%	**0.00%**
Madagascar	0.00%	0.01%	0.01%	0.00%	0.00%	**0.00%**
Mozambique	0.00%	0.00%	0.00%	0.00%	0.04%	**0.01%**
Chile	0.00%	0.00%	0.00%	0.02%	0.03%	**0.01%**
Azerbaijan	0.00%	0.00%	0.13%	0.00%	0.02%	**0.03%**
Kiribati	0.00%	0.00%	0.13%	0.13%	0.00%	**0.06%**
Uzbekistan	0.00%	0.14%	0.01%	0.20%	0.16%	**0.11%**
Angola	0.00%	0.00%	0.01%	0.68%		**0.13%**
Australia	0.09%	0.08%	0.13%	0.12%	0.21%	**0.13%**
Mongolia	0.91%	0.00%	0.00%	0.00%	0.00%	**0.17%**
Nepal	17.91%	0.00%	0.00%	12.64%	0.00%	**0.19%**
Myanmar	0.49%	0.31%	0.93%	0.05%		**0.35%**
Solomon Islands	0.49%	0.58%	0.47%	0.85%	0.00%	**0.47%**
United Kingdom	1.80%	0.02%	1.37%	0.13%	1.68%	**0.50%**
Panama	0.11%	0.10%	0.02%	11.94%	13.12%	**0.73%**
Dominican Republic	5.37%	0.00%	0.00%	0.00%	0.00%	**0.89%**
Cabo Verde	3.38%	1.82%	0.00%	0.00%	0.93%	**1.06%**
Ethiopia	0.00%	0.00%	6.13%	0.00%	0.00%	**1.20%**
Fiji	0.19%	13.43%	0.00%	0.00%	0.00%	**2.97%**
Costa Rica	5.86%	2.55%	0.43%	9.83%	2.55%	**3.17%**
Philippines	0.00%	14.86%	9.64%	3.16%	4.42%	**3.17%**
Uganda	0.00%	0.00%	0.00%	20.12%	0.00%	**3.85%**
Zambia	0.14%	0.04%	0.11%	0.63%	29.98%	**4.45%**
Namibia	1.94%	0.12%	0.01%	51.64%	0.00%	**7.78%**
Tanzania		18.08%	24.01%			**9.79%**
Botswana	20.83%	24.92%	0.54%	5.45%	0.05%	**10.60%**
Singapore	16.22%	20.37%	16.62%	14.00%	7.30%	**14.02%**
Sudan	17.40%					**17.40%**
Kenya		10.28%	0.00%	0.00%	12.96%	**20.11%**
Papua New Guinea		0.00%	0.00%	0.00%	0.00%	**21.64%**
India	20.82%	22.51%	22.16%			**21.89%**
Palau	7.65%	16.21%	7.14%	0.68%		**24.07%**
Iceland	0.00%	0.00%	0.00%	0.00%		**24.49%**

Sector Name Long	2016	2017	2018	2019	2020	**Total**
Sri Lanka	0.74%	0.66%	0.46%	0.41%		**27.65%**
Malaysia	0.00%	0.00%	0.00%	0.00%		**27.73%**
Micronesia	37.87%	52.75%	25.15%	24.31%	28.17%	**33.12%**
Nauru	0.00%	0.00%	0.00%			**93.80%**
China	96.28%	95.47%	96.09%	95.93%	95.41%	**95.82%**
Togo	0.02%	0.00%				**103.65%**
Guinea-Bissau		0.00%				**103.81%**
San Marino				0.00%	0.00%	**147.04%**
Mali	0.00%	0.00%				**160.91%**
Bosnia and Herzegovina	0.00%	0.00%				**194.85%**
Cambodia	0.00%	0.00%				**205.14%**
Morocco	21.63%	9.81%				**218.13%**
Honduras					0.00%	**374.65%**
Lao PDR	0.00%					**422.10%**
Saudi Arabia	0.00%					**499.05%**
Côte d'Ivoire	0.00%					**502.03%**
Bangladesh	0.00%					**625.91%**

Attachment F: Procurement Benchmarking Study Analysis

Table 40. 2017 WB Procurement Benchmarking Comparisons (non-intuitive results)

Country	Rank	WB 2017 Procurement Benchmarks	Average of CPI score
Kazakhstan	1	84.25	27.90
Russia	2	81.00	26.35
China	3	77.75	37.30
Ecuador	4	77.50	29.00
Costa Rica	5	76.75	50.29
Hungary	5	76.75	48.95
Romania	5	76.75	39.10
Canada	8	76.50	83.50
Albania	9	75.50	31.80
North Macedonia	10	74.75	35.95
Spain	10	74.75	63.25
Austria	12	74.50	77.60
Italy	12	74.50	47.80
Philippines	14	74.25	29.90
Singapore	15	74.00	89.00
Morocco	16	73.75	36.30
Taiwan	16	73.75	60.30
Jamaica	18	73.25	37.85
Cambodia	19	73.00	20.82
Slovak Republic	20	72.75	46.35
Estonia	21	72.25	66.80
Poland	21	72.25	51.10
Kosovo	23	71.75	34.42
Malta	23	71.75	57.33
Peru	23	71.75	36.20
Turkey	23	71.75	40.50
Cyprus	27	71.50	58.26
Denmark	27	71.50	88.65
Panama	29	71.25	35.20
Ukraine	29	71.25	26.70
Vietnam	31	70.50	29.95
Argentina	32	70.25	32.80
Avg of Weighted PIs	**16161**	**11,060.00**	**41.95**

Figure 30. 2017 WB Proc. Study Vs PEFA Proc, CPI, CPIA & WGI – CC (non-inutitive results)

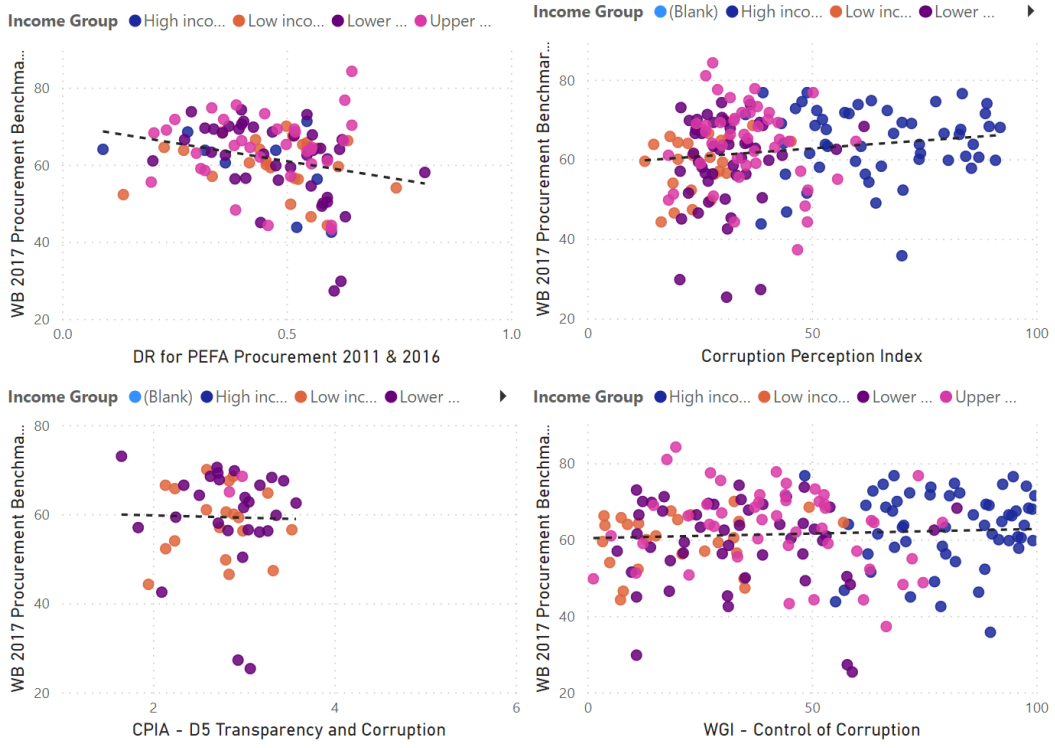
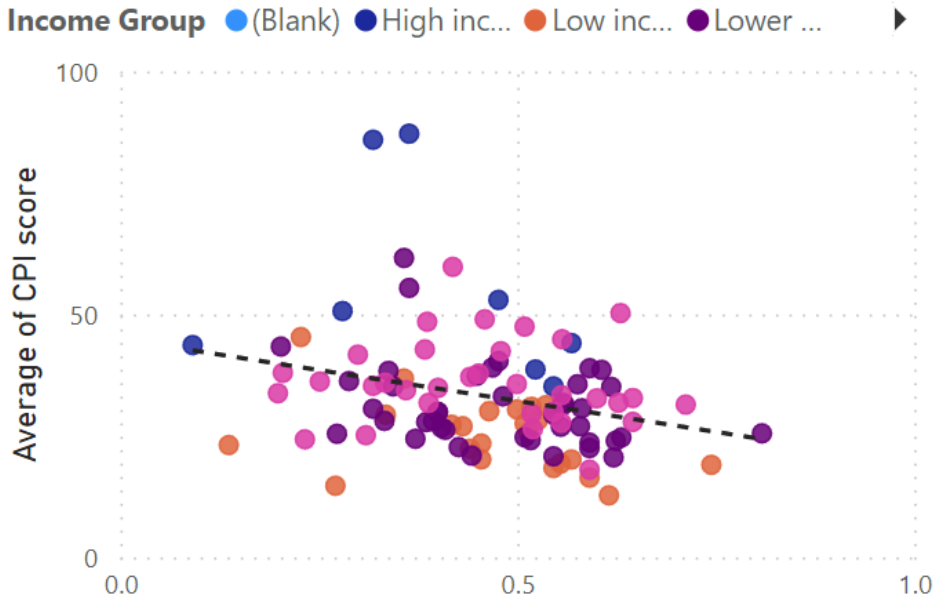


Figure 31. PEFA Procurement Vs CPI (inutitive results)



Attachment G: Data Sources and Updates

Category	Latest Last Updated	First Source
Classification and Bridging		
Classification data for GFS Aggregates	03/09/2021	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
FSI 2022	20/01/2023	https://fragilestatesindex.org/excel/
GFS codes used in IMF datasets	01/11/2021	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
OECD DAC CRS Classification System	21/11/2021	https://www.oecd.org/development/financing-sustainable-development/development-finance-standards/dacandcrscodelists.htm
Others: Classification, Grading and Indexation Systems Country bridging tables and mapping data PEFA 2011-2016 bridging tables	31/12/2021	Various
DFRA		
AML	31/12/2021	Various
BTI	20/08/2022	https://bti-project.org/en/methodology
CPI (TI)	26/08/2021	Various
CPIA	04/03/2022	https://ida.worldbank.org/en/financing/resource-management/ida-country-performance-ratings
HDI	25/11/2022	https://hdr.undp.org/sites/default/files/2021-22_HDR/HDR21-22_Statistical_Annex_HDI_Table.xlsx
Open Budget data	20/08/2022	http://survey.internationalbudget.org/#download
PEFA 2011	21/10/2021	Batch Download Assessments | Public Expenditure and Financial Accountability (PEFA)
PEFA 2011 Annex	21/02/2022	Batch Download Assessments | Public Expenditure and Financial Accountability (PEFA)
PEFA 2016	21/02/2022	Batch Download Assessments | Public Expenditure and Financial Accountability (PEFA)
PEFA Gender	21/02/2022	Batch Download Assessments | Public Expenditure and Financial Accountability (PEFA)
Rule of Law Index	31/12/2021	https://worldjusticeproject.org/our-work/research-and-data/wjp-rule-law-index-2021/current-historical-data
SCI	04/03/2022	https://databank.worldbank.org/reports.aspx?source=Statistical-capacity-indicators#
SDDS	26/12/2022	IMF - SDDS Summary Of Observance Cross Country Query Selection (DSBB)
Specialised (fiscal sustainability, non-tax revenue, contract management, procurement, anti-corruption, communications and grant financing)	31/12/2021	Various
SPI	08/11/2022	https://datacatalog.worldbank.org/search/dataset/0037996/Statistical-Performance-Indicators
TADAT	31/12/2021	Various
WB DSI	16/12/2022	Debt Sustainability Analysis (worldbank.org)
WCO	31/12/2021	Various
Wordwide Governance Indicators	21/08/2022	http://info.worldbank.org/governance/wgi/
World Bank Procurement Benchmarking Study	31/07/2021	https://documents1.worldbank.org/curated/en/121001523554026106/Benchmarking-Public-Procurement-2017-Assessing-Public-Procurement-Regulatory-Systems-in-180-Economies.pdf
Fiscal		
GFS COFOG Data	15/12/2022	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
GFS Expenses	15/12/2022	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
GFS Main Aggregates and Balances	15/12/2022	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
GFS Revenue	15/12/2022	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
IMF Debt - Financial Assets and Liabilities by Counterpart Sector	15/05/2022	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
IMF Debt - Stock Integrated Balance Sheet	14/05/2022	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
IMF Financial Soundeness Indicators	02/04/2022	https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405
Socio-Economic		
WDI	15/12/2022	http://databank.worldbank.org/data/download/WDI_excel.zip

Attachment H: Objectivity Assessment of Underlying Metrics

Description	Category	Objectivity/Subjectivity Category	Objective/Subjective Type	Bias Scope	Latest Last Updated
AML	DFRA	Index of Index	Conceptual framework standards	Moderate	31/12/2021
BOP	Macro-Fiscal	Objective (Factual) Data	Conceptual framework standards	Minor	16/12/2022
BTI	DFRA	Subjective	Conceptual framework standards	High	20/08/2022
China Aid	Aid Data	Subjective and Objective Data	Conceptual framework standards	High	29/09/2021
COVID	Socio-Economic	Objective (Factual) Data	Conceptual framework standards	Moderate	02/02/2023
CPI (TI)	DFRA	Subjective	Conceptual framework standards	Moderate	26/08/2021
CPIA	DFRA	Subjective	Conceptual framework standards	High	04/03/2022
Disability	Socio-Economic	Objective (Factual) Data	Conceptual framework standards	Moderate	01/03/2022
GFS COFOG Data	Fiscal	Objective (Factual) Data	Accounting standards	Minor	15/12/2022
GFS Expenses	Fiscal	Objective (Factual) Data	Accounting standards	Minor	15/12/2022
GFS Main Aggregates and Balances	Fiscal	Objective (Factual) Data	Accounting standards	Minor	15/12/2022
GFS Revenue	Fiscal	Objective (Factual) Data	Accounting standards	Minor	15/12/2022
HDI	DFRA	Index of Index	Conceptual framework standards	Minor	25/11/2022
IMF Debt - Financial Assets and Liabilities by Counterpart Sector	Fiscal	Objective (Factual) Data	Accounting standards	Minor	15/05/2022
IMF Debt - Stock Integrated Balance Sheet	Fiscal	Objective (Factual) Data	Accounting standards	Minor	14/05/2022
IMF Financial Soundeness Indicators	Fiscal	Objective (Factual) Data	Conceptual framework standards	Minor	02/04/2022
IMF Gender Indices	Socio-Economic	Index of Index	Conceptual framework standards	Moderate	31/01/2022
OECD DAC CRS Data	Aid Data	Objective (Factual) Data	Statistical Standards	Moderate	20/04/2022
Open Budget data	DFRA	Objective (Factual) Data	Conceptual framework standards	Moderate	20/08/2022
PEFA 2011	DFRA	Objective (Factual) Data	Conceptual framework standards	Moderate	21/10/2021
PEFA 2011 Annex	DFRA	Objective (Factual) Data	Conceptual framework standards	Moderate	21/02/2022
PEFA 2016	DFRA	Objective (Factual) Data	Conceptual framework standards	Minor	21/02/2022
PEFA Gender	DFRA	Objective (Factual) Data	Conceptual framework standards	Moderate	21/02/2022
Rule of Law Index	DFRA	Subjective	Conceptual framework standards	Moderate	31/12/2021
SCI	DFRA	Objective (Factual) Data	Conceptual framework standards	Minor	04/03/2022
SDDS	DFRA	Objective (Factual) Data	Conceptual framework standards	Minor	26/12/2022
SDGs	Aid Data	Objective (Factual) Data	Conceptual framework standards	High	05/01/2022
SPI	DFRA	Objective (Factual) Data	Conceptual framework standards	Minor	08/11/2022
TADAT	DFRA	Objective (Factual) Data	Conceptual framework standards	Minor	31/12/2021
WB DSI	DFRA	Objective (Factual) Data	Conceptual framework standards	Moderate	16/12/2022
WCO	DFRA	Objective (Factual) Data	Conceptual framework standards	Moderate	31/12/2021
WDI	Socio-Economic	Objective (Factual) Data	Conceptual framework standards	High	15/12/2022
WEO	Macro-Fiscal	Objective (Factual) Data	Statistical Standards + forecasting	High	21/10/2022
Wordwide Governance Indicators	DFRA	Subjective and Objective Data	Conceptual framework standards	Moderate	21/08/2022
World Bank Procurement Benchmarking Study	DFRA	Objective (Factual) Data	Conceptual framework standards	High	31/07/2021

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