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Managing Fiscal Risks from State-Owned Enterprises

by Anja Baum, Paulo Medas, Alberto Soler, and Mouhamadou Sy

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I N T E R N A T I O N A L M O N E T A R Y F U N D

IMF Working Paper

Fiscal Affairs Department

Managing Fiscal Risks from State-Owned Enterprises**Prepared by Anja Baum, Paulo Medas, Alberto Soler, and Mouhamadou Sy**

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Abstract

Ensuring that state-owned enterprises (SOEs) are efficient and managed prudently is important for economic and social reasons. It is also crucial to contain fiscal risks and reduce the burden on taxpayers from recurrent and large bailouts. Governments need to develop stronger capacity to monitor and mitigate the risks from SOEs. We present a *risk tool* to benchmark the performance of SOEs relative to their peers and assess their vulnerabilities, including through stress tests. A strategy to mitigate risks requires the right incentives for managers to perform and for government agencies to conduct effective oversight. Incorporating SOEs in overall fiscal targets would promote greater fiscal discipline and transparency.

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I. INTRODUCTION

Governments must navigate many fiscal risks: one area where the stakes are high are state-owned enterprises (SOEs). In many countries, the portfolio of SOEs remains large, diversified, and complex to assess. SOEs can represent a large cost to the budget when governments have to bail out the company and may even affect the credit rating of the country. But financial difficulties in SOEs may also imply that core public services fail, such as the provision of water and electricity, or impact the financial sector if they default. SOEs may also undermine economic growth if their efficiency is poor especially as they operate in network sectors. In some cases, they manage a large share of the wealth of the country, such as national oil companies.

Given the large risks, it would be natural to expect that governments would ensure these companies are well managed and risks are mitigated. Surprisingly, many governments struggle to monitor and contain the risks from SOEs. This, in part, reflects that governments may be one of the reasons behind the financial problems faced by SOEs due to unfunded policy mandates, like excessive hiring or selling products below cost, or weak governance. Another recurrent problem is the lack of capacity of governments to oversee the companies. Many times, information on SOEs is sparse and undermines the ability to assess all the potential risks.

IMF programs have also been tackling with SOEs given their importance to ensure sound fiscal accounts and contain fiscal risks. Previous policy papers have dealt with SOEs either at a general level or focused on specific issues. IMF (2016a) discusses best practices to manage fiscal risks in general, but there is limited analysis regarding SOEs. Previous papers, mainly reflecting concerns from countries in Latin America, focused on the role of SOEs on public investment and whether they were being too constrained due to fiscal targets. The key criterion was whether public corporations posed a fiscal risk or not.¹ However, it did not address concerns that removing an SOE from fiscal targets may lead to riskier behavior. Other papers analyzed the performance and governance of SOEs in selected groups of countries (Bower 2017; and Richmond et al. 2019). Baum et al. (2019) analyzed the effect of corruption on SOEs' performance and the gains from governance reforms.

This paper presents a comprehensive analysis on managing fiscal risks from SOEs. It first identifies the main channels how SOEs can impact the budget and the main drivers of those risks. In particular, some of the vulnerabilities of SOEs can be caused by government policies that restrict operations of the SOE, including on prices and employment policies, or imposes other non-commercial mandates. Another important aspect is the presence of soft-budget constraints that create the wrong incentives to managers if they expect government support when the firm incurs losses.

¹ A first paper (SM/04/93) concluded that *commercially run* public enterprises could be selectively excluded from fiscal indicators and targets to avoid distorting their operations. However, country pilot studies (IMF 2005) noted that few SOEs can be identified as commercially run, questioning the usefulness of the exclusion criteria. Therefore, the emphasis was placed on the extent of fiscal risks posed by individual SOEs. IMF (2007) developed revised criteria for the exclusion of SOEs from fiscal targets. The paper concluded that the revised criteria allow a distinction between high and low fiscal risks, although judgement needs to be retained.

The paper also introduces a “risk tool” to enhance monitoring of SOEs and discusses the challenges in developing strategies to mitigate fiscal risks. The risk tool can help establish SOE performance benchmarks relative to its peers and provide quantitative estimates of fiscal costs when SOEs are hit by shocks. This information can also be an input for governments when deciding whether to keep or sell SOEs. Many countries have also struggled to adopt successful strategies to mitigate risks. The paper discusses the different options and their limitations. A core element is to promote the right incentives to ensure the firm is managed efficiently and prudently. Another is strengthening the capacity of government agencies to oversee the firms. Finally, the paper also discusses the benefits of fully integrating SOEs in the overall fiscal framework, including to ensure fiscal discipline and transparency and, thus, reduce fiscal risks.

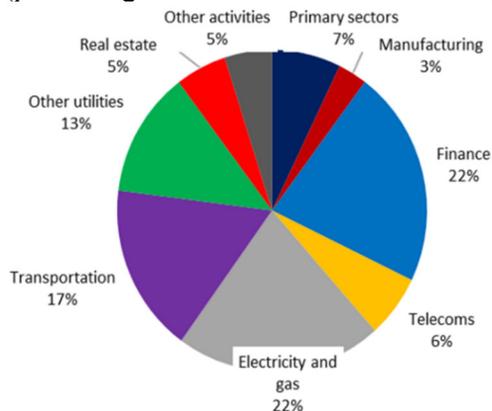
The rest of the paper is organized as follows. Section II discusses the relationship between SOEs and the economy and budget. The next section discusses the different types of risks and its main drivers. Section IV presents a new “risk tool” to help monitor the performance of SOEs and assess fiscal risks. Section V discusses mitigation strategies. The last section concludes.

II. SOES: ECONOMIC AND BUDGETARY IMPACT

SOEs are prevalent in network sectors making their operations critical for well-functioning economies in many countries. In some countries they number in the thousands (e.g. China, Germany, Russia). Many are small, but some are among the world’s largest companies. They operate mainly in sectors such as public utilities, energy (oil and gas), transportation, and banking (Figure 1). SOEs are dominant in the provision of water and public transportation in advanced economies and play a significant role in the electricity sector in most countries. They are leading players in infrastructure (World Bank 2017). SOEs can also be a significant source of employment. According to ILO data, they represent on average 3 percent of the labor force, compared to 13 percent by the general government. In some cases, like Ukraine, the proportions are inverted.

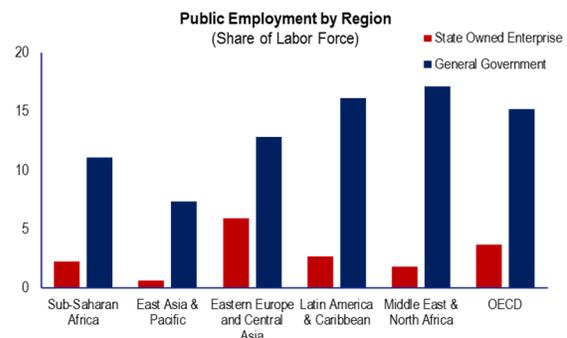
Figure 1. SOEs in the Economy

Figure 1a. SOEs by sector
(percentage of total SOE market value)



Sources: OECD; IMF staff calculations.

Figure 1b. SOEs employment



Source: ILO

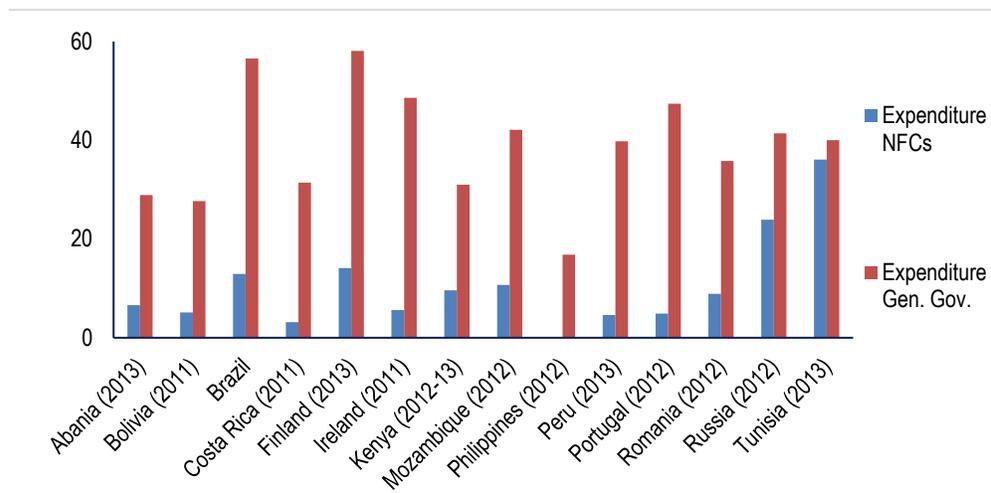
One concern is that many SOEs tend to have relatively weak performance (IMF 2020a), which can have macroeconomic implications:

- As providers of inputs (e.g. electricity), inefficiencies in SOEs can undermine other sectors of the economy (including degree of competitiveness). A poorly managed SOE may lead to unreliable provision of services (e.g. power shortages) or higher input costs. It can also affect households—for example, if the SOEs undersupply core public services, like public utilities and transport.
- If SOEs are less efficient than private competitors but are protected from competition it can undermine productivity in the economy as a whole. One channel goes through the misallocation of resources and can be an important source of aggregate productivity losses (Restuccia and Rogerson 2019; Song and others 2011).

The main reason why governments are likely to worry, however, is that they may be called to financially support the SOEs at an hefty cost to the budget. The risks arise from:

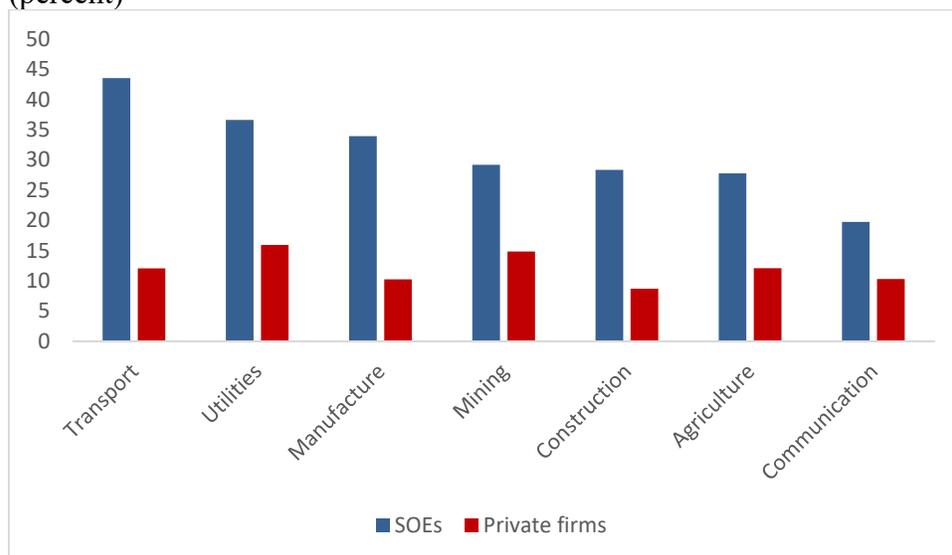
- The sheer size of SOEs operations implies potentially large risks (Figure 2). The risks are exacerbated by the the limited transparency on their operations and how they can impact the health of the overall public sector.
- Many SOEs face *soft* budget constraints as, contrary to their private peers, they can survive for long with systematic losses. The data shows that a large share of SOEs suffer from persistence losses across all sectors (Figure 3). This implies that governments may need to bail out firms. Soft budget constraints may be exacerbated by complex holding structures, which make them less transparent and difficult to monitor.

Figure 2. Expenditures of General Government and Non-financial SOEs
(Percent of GDP)



Sources: IMF Fiscal Transparency Evaluations; IMF staff

Figure 3. Share of Firms With At Least 3 Consecutive Years of Losses (percent)



Sources: Orbis; National Resource Governance Institute; and IMF staff estimates.

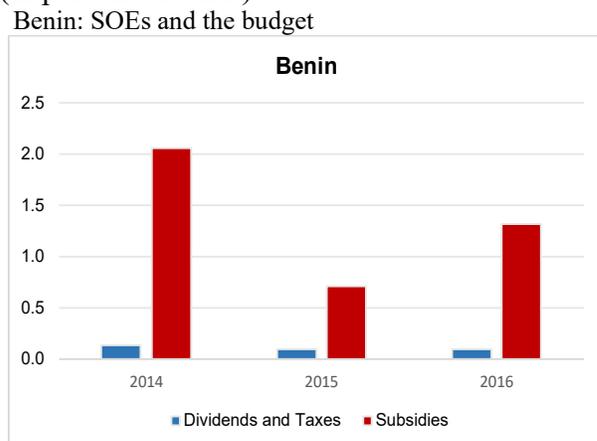
Notes: The measure of persistent losses is based on return on assets. The sample is about 102 counties.

The relationship between SOEs and the budget can take many forms and sizes. Direct links include transfers from SOEs to the budget, including taxes and dividends.² There are also transfers from the budget to SOEs. These can be sizeable, even in a favorable economic environment, either to finance current spending or public investment. In some countries, net flows into the budget are large and persistently negative as Figure 4 illustrates for Benin. There could also be below-the-line operations to inject funds in the SOE, such as loans or equity.³ Finally, governments may provide guarantees to SOEs.

² Where the government has provided loans to SOEs, interest payments to service the interest could also be a source of revenues—however, if the loans are subsidized, the government may face net losses if the interests paid on sovereign debt are higher.

³ Capital injections can involve cash or other assets, including land and equipment. In 2016, Georgian Rail transferred property with a fair value of GEL 86 million (0.25 percent of GDP) to the government for an amount of GEL 147 million (0.43 percent of GDP). The difference between the fair value and the cost to the government was recognized as a non-cash equity contribution by the government.

Figure 4. Transfers between SOEs and the Budget in Benin
(in percent of GDP)



Sources: Benin authorities and IMF staff calculations.

III. TYPES AND DRIVERS OF FISCAL RISKS FROM SOES

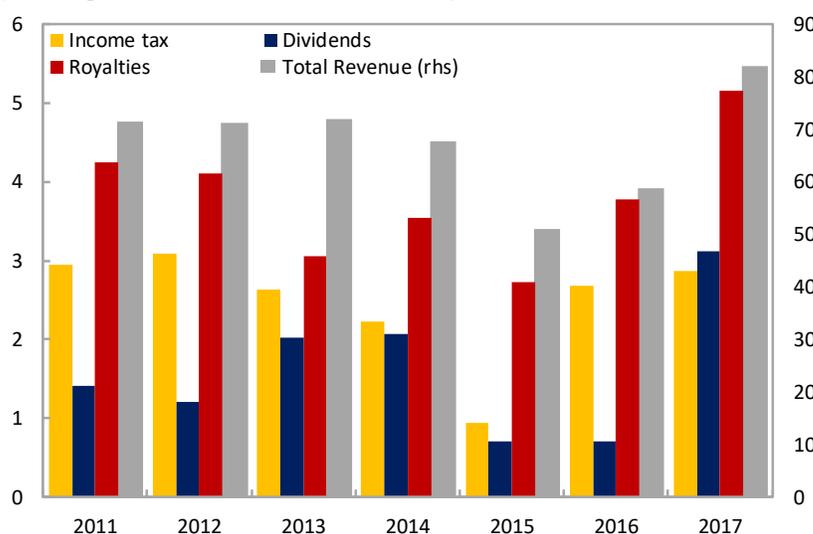
The numerous transmission channels between SOEs and the budget imply that shocks to SOEs are likely to impact the government budget or balance sheet (Table 1). These effects can be automatic, e.g. lower profits lead to lower dividends, while others only materialize if the government provides support to address the deterioration in the financial health of the company. In order to monitor and mitigate fiscal risks, governments need to have a good understanding of the channels and potential factors that explain the buildup of vulnerabilities in the SOEs. We turn to these questions now.

A. Type and size of fiscal risks

Table 1. Fiscal Risks - <i>unexpected impact on:</i>		
Revenue	Expenditure	Net financial position
Variations in taxes and royalties	Higher subsidies or transfers triggered by indexation schemes, bailouts or explicit contingent liabilities	Realization of explicit contingent liabilities of SOEs
Accumulation of tax arrears	Higher interest payments triggered by debt guarantees	Hidden liabilities
Variations in dividends	Equity purchases with below-market returns	Additional borrowing to fill gross financing needs
Credit risks in loans to SOEs	Cancellation of government loans to SOEs	Positive valuation effects on SOEs liabilities or negative effects on SOEs assets

Taxes, royalties and dividends from SOEs can be a significant source of revenue for the government—but also volatile.⁴ In general, tax revenues will follow the business cycle and would not be a specific SOE risk. However, there are exceptions. For example, national oil companies tend to be the largest taxpayer and contributor to the budget in oil exporting countries. Their revenues can be highly volatile due to fluctuation in oil prices (Figure 5), but also because the company entered in high risk projects or it may be involved in non-core activities and subsidizing other sectors of the economy. The volatility of dividends can also have a significant impact on budgets. Another factor is the accumulation of tax arrears than can undermine tax collection. For instance, in Bosnia and Herzegovina it is estimated that tax and social contributions arrears of SOEs reached 4 percent of GDP in 2019.

Figure 5: Revenues and Taxes of National Oil Companies
(Averages, 2011-2017, USD billion)



Source: Natural Resource Governance Institute and IMF staff calculations.

Note: The chart displays the average total revenue (sales plus other income) and average contributions to the budget of 54 national oil companies in 46 countries.

The materialization of risks may also lead to the increase in budget transfers to SOEs, like subsidies, capital transfers, and capital injections from the government. Subsidies have a recurrent nature and are linked either to compensate operational losses or policy mandates, including quasi-fiscal activities.⁵ They can vary considerably. For example, to maintain a

⁴ For example, in Vietnam, SOEs paid 5.4 percent of GDP in taxes in 2015, 1.7 percent of GDP in Seychelles in 2017. The case of national oil or mining companies is particularly striking as the sum of total income (taxes, royalties and dividends) paid to the government can reach sizeable sums (e.g. Saudi Aramco transferred 19 percent of GDP on average in the last three years). Another example is Panama, where dividends from the Panama Canal Company represent 10-15 percent of government revenue.

⁵ SOEs may be required to undertake certain activities that are not commercially viable, which are termed quasi-fiscal activities. The most common example is an SOE providing goods or services at a price which is lower than the cost of production. This often occurs in the electricity, public transport, and water sectors, where prices are regulated to expand access to vulnerable groups. In the financial sector, state-owned banks may provide lending at below market costs. SOEs might also allow arrears with the government or other SOEs.

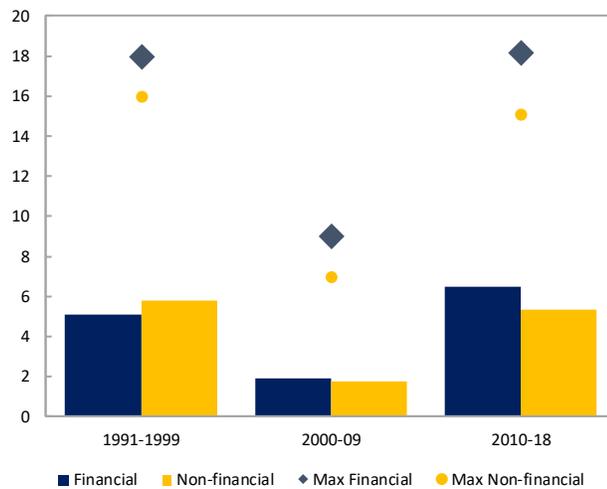
targeted fuel price, the Egyptian government used to pay—before reforming the fuel price system—a fuel subsidy which depended on the international fuel price as well as consumption levels. Transport subsidies may be linked to the number of passengers, mode of transport and journey distance. By contrast, capital transfers tend to be one-off operations, such as funding for public investment, but may also reflect financial difficulties by the company.⁶

Governments may also face substantial costs when SOEs struggle to service their debt. This could reflect explicit loan guarantees. For instance, the South African government provided guarantees totaling 7 percent of GDP to SOEs, and a further 2.5 percent of GDP related to contracts with independent power producers (IPPs) entered into by the state-owned electricity utility (based on March 2019 data). In Vietnam, the amount of guaranteed loans to SOEs is close to 10 percent of GDP. Similarly, explicit contingent liabilities in PPP contracts subscribed by SOEs (such as revenue, debt or exchange rate guarantees, or termination clauses) may also trigger higher government payments to private contractors.

Even when there are no explicit guarantees, if a SOE fails to service its debt, the government may provide support to ensure continuity of operations of the SOE and avoid affecting the economy. Similar interventions can take place when there are guarantees in place, but the government wants to avoid a default of SOEs. In addition, governments may also suffer losses on loans granted to SOEs. This is the case of on-lent funds from donors and international financial institutions to SOEs.

More generally, the cross-country evidence suggest fiscal costs from support to SOEs can be substantial. Based on a sample of 80 countries (see Figure 6), the average cost was above 5 percent of GDP in the 1990s decades and the 2010–18 periods. Only during the boom years of the 2000s was the average lower than 2 percent of GDP. In some cases, the bail out cost exceeded 10 percent of GDP. In Jordan, the government made sizeable transfers between 2012 and 2015 (15 percent of GDP cumulatively) to the state-owned electricity company, NEPCO. Other episodes include the bailout to Polynesian Airlines by the Samoan

Figure 6. Average Fiscal Costs of Government Support
(percent of GDP)



Sources: Bova and others (2016) database, IMF (2020a), and IMF country reports.

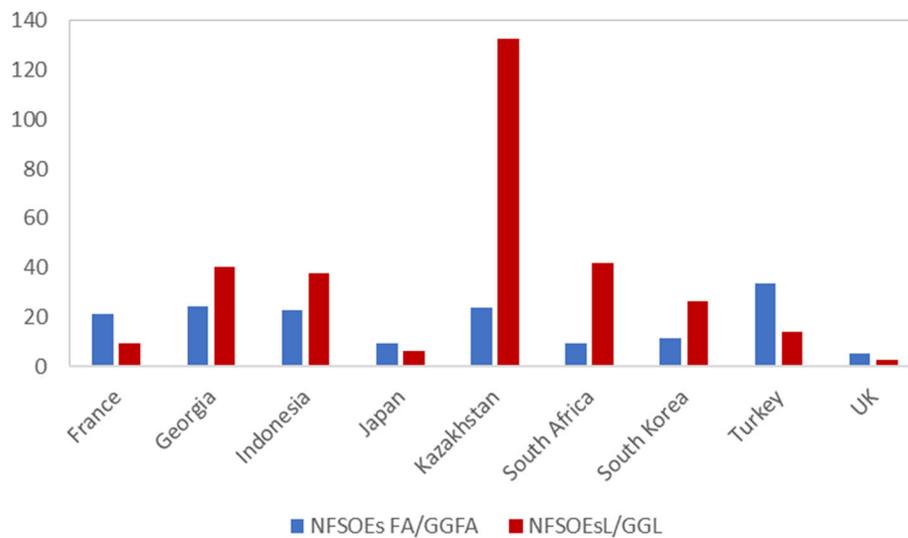
Values represent average bailout costs in one year per country.

⁶ These transfers are sometimes made even in the absence of medium-term of financial profitability of the company. In turn this can be traced to the policy or strategic reasons that often underlie the creation of SOEs. IMF (2020a) reviews more in depth this rationale.

government in 1994 (16 per cent of GDP) and the bailout of the Dubai World by the Emirates' authorities in 2009 (9 percent of Dubai's GDP).

SOEs can also be a significant contributor to the net financial wealth of the public sector. Figure 7 shows relative financial assets and liabilities⁷ of non-financial SOEs and general government in selected advanced and emerging economies. On average, non-financial SOEs financial assets account for 18 percent of those of the general government. Regarding liabilities, those of non-financial SOEs account on average for 34 of general government's stocks, and in Kazakhstan the former is higher. These examples illustrate that shocks to SOEs can have a meaningful impact of the net financial worth of the public sector.

Figure 7. Relative Size of Non-Financial SOEs And General Government Financial Assets and Liabilities



Source: IMF Public Sector Balance Sheet Database

The indirect budgetary impact of distress in SOEs are harder to estimate but can be substantial. Financial distress in large SOEs, or those operating in core sectors of the economy, can have a negative impact in the economy and the financial sector (if SOE cannot service their debt). These, in turn, can lead to a negative impact on the budget as revenues may fall or the government has to bail out banks. For example, in South Africa, the state-owned utility's disruptions in electricity supply were estimated to have reduced the economic growth rate between 1 and 2.5 percent of GDP both in 2015 and 2019.⁸ Where SOEs accumulate arrears, this can create liquidity constraints for their suppliers, including small

⁷ Equity is not included on the liability side. The rest of liabilities and assets are not consolidated.

⁸ Estimates from the Council for Scientific and Industrial Research of South Africa. <https://businesstech.co.za/news/energy/367714/south-africas-load-shedding-horror-show-in-3-graphs>

businesses. When cross-subsidies between SOEs are used, this may divert funds from more productive investment opportunities and ultimately harm the net worth of the holding.

B. Drivers of risk?

One of the main sources of risks are exogenous shocks that affect SOEs finances. They can be linked to macroeconomic variables or market-specific factors. These factors may also be correlated (e.g. slowdown in the economy, rises in interest rates or movements in the exchange rates). In addition, governments may need to help SOEs at the same time they face a shock themselves, as worsening macroeconomic conditions will impact all (e.g. Covid-19 pandemic, see IMF 2020b). The potential impact on the budget will also depend on several factors, including size of the SOE, sector it operates, and the magnitude and duration of the economic shock.

However, SOEs financial difficulties may also reflect a buildup of vulnerabilities. It could be a result of accumulation of losses over the years—and excessive leverage—making it unsustainable to continue to operate.⁹ In addition, the complex relationship between the government and SOEs is another key factor that generates vulnerabilities. Some typical drivers are:

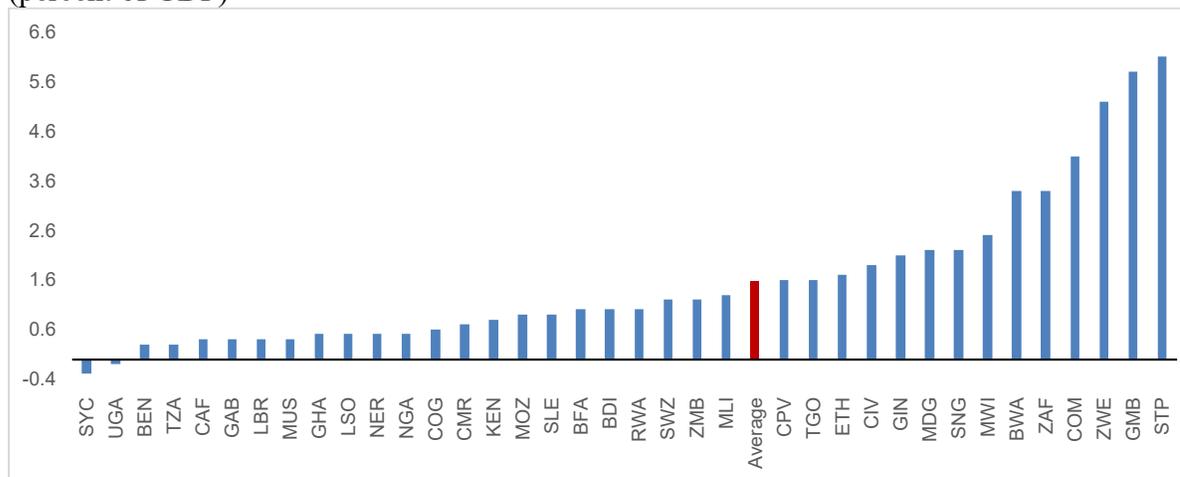
- *Weak SOE corporate governance.* The corporate boards may not have the necessary independence, due to political interference, or management may lack the necessary mix of skills, knowledge and experience, which can be compounded by weak internal controls (OECD 2015).
- *Inadequate oversight may lead to higher risk taking and weaker budget discipline.* When SOEs cannot be properly monitored it may create incentives for less efficiency and more risk taking, including over-indebtedness, in the expectation that taxpayers will ultimately bail out the firm. The weak oversight may reflect lack of information—such as timely, standardized and reliable financial reports—or weak governance and corruption (IMF 2019).
- *Uncompensated quasi-fiscal activities.* These include cases where governments mandate (not always transparently) over-staffing and prices below costs. Over time, these can generate losses and may exacerbate vulnerabilities. For example, weak liquidity or excessive leverage. These quasi-fiscal costs can be sizeable. A study by Trimble et al. (2016) estimated the quasi-fiscal deficits in SSA's electricity sector averaged 1.6 percent of GDP with 10 countries where it exceeded 2 percent of GDP. Petri and Taube (2003) estimated that quasi-fiscal activities in the energy sector in Azerbaijan reached 26.7 percent of GDP in 1999 and 6.5 percent of GDP in Ukraine in 2003.
- *Arrears between SOEs and governments.* Cross arrears between SOEs, which tend to be associated with persistent mismanagement or unresolved legacy issues, can cripple their capacity to service debt or provide returns to the government. In Gambia, the Special

⁹ High debt (including trade-payables) in relation to equity and assets worsens the solvency perception of a company, raise its borrowing costs and increase vulnerabilities. For example, on the eve of the Jordan government's bailout to NEPCO (the National Electricity Power Company) in 2011, its current liabilities were more than 5 times higher than its current assets.

Audit conducted in 2019 revealed that trade arrears to NAWEC (water and electricity company) amounted in 2017 to 1.7 percent of 2017 GDP.

- *Excessive dividend (or tax) extraction.* Retained profits are one of the main sources of investment, growth and value generation for firms, public or private. If governments collect excessive dividends, this can weaken the financial health of the company and make it more vulnerable. For example, in 2015, PEMEX (the Mexican Oil Company) posted MXN 381 billion in losses before royalties and other taxes, but overall tax payments amounted to MXN 331 billion (1.8 percent of GDP).

Figure 8. Quasi-Fiscal Deficits in sub-Saharan Africa’s Electricity Sector
(percent of GDP)



Source: Trimble *et al.* (2016).

IV. MONITORING FISCAL RISKS: AN AGGREGATE VIEW

Monitoring is a core element of good risk management.¹⁰ The analysis should be both at the aggregate level (the whole SOE sector) and a more detailed monitoring at the company level. This dual approach provides a better perspective of aggregate vulnerabilities and risks to the budget and the economy and developing strategies to deal with individual companies that represent a significant risk. Effective monitoring involves:

- A comprehensive inventory of existing SOEs. This stocktaking exercise includes identifying both SOEs at the central and subnational levels, ownership status (fully or partially owned by the government), institutions responsible for exercising the shareholder responsibilities, and the sectors in which they operate. Governments should demand regular and reliable information from all SOEs.
- While all SOEs should be monitored, greater attention or priority could be given to a subset, especially if there are capacity constraints. For example, priority could be given to those that run complex business models (where is difficult to assess performance and

¹⁰ The fiscal risk management cycle typically involves four stages: identification of risks, assessment and quantification of potential fiscal costs, mitigation, and disclosure.

risks), represent large fiscal risks, or SOEs where disruptions could have negative macroeconomic effects (e.g. electricity).¹¹

- Risk monitoring should combine both historical and forward-looking analysis. The first is based on analysis of trends and current financial indicators, while the latter is based on the analysis of plausible baseline, upside, and downside scenarios and their implications, taken into account key macro and SOEs-specific factors.

A. Aggregate SOE sector risk assessment

An overall view of the SOE sector allows to assess the economic relevance, the full impact on the government budget and balance sheet of the public sector, and interactions between SOEs that may intensify risks. Furthermore, a comprehensive view of the budget flows is especially critical when data on individual SOEs is limited or unreliable. Monitoring at the aggregate level should be conducted by SOEs oversight units at least on an annual basis and timed with the government's budget preparation—allowing early assessment of risks.

The size of the SOE sector relative to the economy provides an indication of relevance of the risks. Possible indicators include the magnitude of SOE revenues, expenditures or assets relative to GDP. However, given data limitations, a more commonly used measure is the magnitude of SOE liabilities as a percentage of GDP. It is also useful to consider net financial worth and net worth of the SOEs sector as proxies of their solvency, together with liquidity measures (net liquid assets), currency mismatches and, if time-series are available, risk adjusted assets and liabilities.¹²

Another element of the risk assessment is the magnitude of the SOE sector relative to the government budget. A key indicator is the size of net financial transfers (the sum of subsidies and transfers less taxes and royalties, dividends and interest payments) from government to SOEs, relative to GDP or total government expenditure.

Another key element on the relations between SOEs and governments are quasi-fiscal operations (QFAs)—while these are less understood, they can represent large fiscal risks as discussed. Countries should collect information on unfunded QFAs and assess their aggregate cost. However, the estimation and monitoring of these costs can be challenging:

- It requires to take stock of all non-commercial activities carried out by SOEs, as well as an estimation of costs by activity (including financial costs). Uncompensated losses can be calculated as the difference between prices plus compensation less costs.
- Further complexities may arise when quasi-fiscal costs are linked to regulated commercial activities. In those cases, estimating the QFA requires determining the counter-factual, i.e., what would be the revenues and costs in the absence of regulation. These can sometimes be benchmarked against comparable private companies. More advanced practices can estimate potential in addition to effective costs (for instance,

¹¹ There could be other factors that lead governments to closely monitor specific SOEs independent of fiscal risks. For example, if the SOE is a monopoly.

¹² For a comprehensive view on the analysis of public sector balance sheets, see Yousef (2019).

stemming from directed lending to higher risk companies). It is also possible to differentiate quasi-fiscal costs before taxes and after taxes and dividends, to account for the impact of income extraction on the liability structure and financing costs.

- Quasi-fiscal costs estimates can change over time and can be closely linked to varying macroeconomic conditions. As such, it is important to coordinate with line ministries and sectoral regulators for an adequate monitoring and ensure regular updates of the estimates and their periodic reporting to ministries of finance.¹³

Risk monitoring should also involve identify interactions between SOEs that could lead to significant spillovers and intensify risks. Comprehensive data on gross liabilities can help identify risks associated with links between SOEs or between SOEs and private financial corporations. Data on commercial and tax arrears should also be taken into consideration. On other occasions, spillover effects may not be as clear, but shocks to SOEs can be highly correlated, which adds significance to the risk assessment of the whole SOEs portfolio.

B. More Transparency

Fiscal coverage of SOEs is often limited contributing to the unexpected materialization of fiscal costs and deviations from fiscal forecasts. Furthermore, incomplete coverage of SOEs in the fiscal accounts weakens fiscal analysis and create incentives to shift fiscal pressures to SOEs and ultimately generate higher fiscal risks:

- Government spending may be shifted to SOEs reducing the government deficit in a first instance. However, these could carry future costs to the budget if they undermine the ability of the company to operate and may lead to excessive leverage. For example, subsidies to SOEs may be cut without addressing the factors that required the subsidies (e.g. QFAs). Similarly, governments may demand excessive dividends from SOEs and require them to undertake public investment without proper vetting or funding.
- SOEs can also be used to circumvent fiscal rules. Where countries have expenditure or deficit ceilings, subsidies to SOEs may be recorded as an equity investment (below the line). Fiscal targets may also be explicitly formulated to exclude some or all SOEs and allow to shift spending from the budget to the SOE.¹⁴

The coverage of national fiscal statistics varies significantly across the Fund membership (Box 1). In many LICs, data coverage beyond budgetary central government is very limited (see Annex 1 for the structure of the public sector). Timely and reliable data on SOEs is often not available. Accounting and auditing standards may not be in line with international practice and long delays in reporting financial statements are common in many countries.¹⁵

¹³ Allen and Alves (2016) includes some examples of estimation of the size of quasi-fiscal activities.

¹⁴ For instance, in Panama, the non-financial public-sector deficit explicitly excludes four of the largest SOEs, while in Brazil the two largest SOEs are excluded.

¹⁵ Typical factors (or a combination of them) that can explain the break of audit trails are missing receipts and invoices, undocumented management adjustments or financial transactions or unreconciled trial ledgers. All these factors are usually traceable to faulty financial control systems and weak governance. Sometimes national

(continued...)

Even in advanced economies reporting is often fragmented with no consolidated report available. The budgeted transfers may be reported under the accounts of the line ministries responsible for respective SOEs, but no overall summary is included, and actual transfers may not be reflected. Contingent liabilities are often at least partially reported, but generally quasi-fiscal activities and non-monetary transfers are not.

The trend, however, is to expand the coverage of fiscal reporting towards the whole public sector.¹⁶ Countries are increasingly reporting on the financial soundness of their SOEs. Some of them are gradually moving towards capturing the whole public sector in their statements. Additionally, more qualitative and quantitative information on the financial performance and risks of the SOE sector and individual SOEs is being published. This can be part of the fiscal risk statements (e.g. Georgia, Tajikistan), constitute a separate item in budget documents (e.g. South Africa) or as a standalone annual report (e.g. Sweden, Lithuania). As for the desirable content of these reports, the Fund's Fiscal Transparency Code encourages countries to disclose SOEs-related contingent liabilities assumed by the government, quasi-fiscal activities undertaken by SOEs and details on transactions with the government. As an advanced practice, aggregate information on SOEs can also contain projections of SOEs financials over the medium-term to lend credibility to the overall fiscal strategy.

BOX 1. COVERAGE OF SOES BY REGION

Reporting and accounting vary substantially across countries and country groups:

Europe. EU countries and most of other countries in Europe report in line with EU guidelines, which mandates that the main fiscal reports cover the General Government (GG). Coverage of SOEs in Europe is therefore often limited as most are outside the GG sector. Financial reports of individually SOEs are usually produced, but rarely for the consolidated SOE sector, and reports on quasi-fiscal activities (QFAs) are not common. For example, in the case of Ireland, while government transfers to and dividends from public corporations are disclosed in the budget, there is no comprehensive combined reporting on a sector whose liabilities accounts for 50 percent of total public liabilities. In addition, there is a lack of information on QFAs of financial corporations. This is similar to Finland, where there is no consolidated report on SOEs or on QFAs. In Romania, the exact number of SOEs is not clear, owing to discrepancies in the registers of SOEs maintained across organizations. In Russia, where the SOE sector is large, individual financial reports are collected by different government agencies, but there is no aggregated financial information of the whole public sector, levels of indirect government support, risks, or QFAs.

Middle East and Central Asia (MECA). Coverage in MECA countries is relatively narrow, with only about half of the countries reporting general government statistics and even fewer reporting on the financial position of public enterprises. Less than a third of Fund staff reports for MECA countries present information on the operations of public financial institutions, and less than 7 percent report on the activities of SOEs (Zakharova, 2008).

legislations foster lack of compliance with international standards, by exempting SOEs from compliance. In some jurisdictions, the SOEs financial year is not even synchronized with the government's financial year, which challenges the integration of SOEs risk assessments in the budget cycle.

¹⁶ Integrating SOEs in fiscal statistics entails some pre-requirements, namely mapping all active SOEs, together with their statutory objectives, and classifying them either inside or outside the general government following GFSM 2014 criteria.

Sub-Saharan Africa. With a few exceptions, fiscal reporting in SSA countries is usually limited to the central or budgetary central government. Therefore, other than for direct transfers between the government and SOEs, their activities are not covered by general statistics. Monitoring is often poor. A survey conducted by IMF staff concluded that coverage of the fiscal accounts is mostly limited to the budgetary central government. Coverage gets particularly weak when it comes to non-financial public enterprises which are covered only in less than 10 percent of the 45 countries surveyed.

The Americas. Latin America has one of the broadest fiscal coverage of SOEs. In many countries, the main fiscal indicators are for the non-financial public sector, although the coverage of SOEs can vary. This partly reflects a history in the region of using SOEs for fiscal purposes and sizable bailouts by the central government. Some countries publish reports on all the SOE sector (e.g. Brazil).

Asia and Pacific. In most countries, coverage of fiscal reports is circumscribed to general or central government. The main exception is New Zealand, that publishes a public sector balance sheet, whereas Australia has a full coverage of general government flow and stocks. Some governments publish annual aggregate reports on the aggregate SOEs financial situation. Philippines is one example but does not include all SOEs. Otherwise, financial information of SOEs is scattered and often limited to listed companies.

V. A “RISK TOOL” TO MONITOR PERFORMANCE AND RISKS AT THE FIRM LEVEL

We next present a tool to assess individual SOEs financial performance and potential fiscal risks.¹⁷ The tool has two blocks. In the first one, it provides an historical, static analysis by benchmarking SOEs financial indicators against those of its peers in other countries. A second block, which builds on previous Fund’s work on SOEs stress testing (IMF 2017, 2018) includes a forward-looking perspective including alternative scenarios. The information from the template could be used to identify the largest risks and produce a matrix to help prioritize focus of government agencies.

A. Benchmarking financial performance

Benchmarking SOEs helps to better understand its relative performance, vulnerabilities, and identify possible risks. The focus is on financial indicators, including on profitability and productivity. The benchmarking provides an indication of potential weaknesses if an SOEs performs worse than its sectoral peers in other countries—requiring further study to understand the drivers¹⁸. For example, if labor costs are significantly higher than in other SOEs, it could reflect mismanagement or imposed employment policies. The financial benchmarks can also be useful for governments to help set goals and expectation regarding the financial performance of the SOE.

The set of financial indicators used describe both the financial and operating aspects of a firm. We group the indicators according to the following categories (see also Annex 2):

¹⁷ The template can be downloaded here. A forthcoming How to Note describes in detail the structure and functionalities of the tool. It applies only to non-financial SOEs.

¹⁸ When information about regional specific patterns exist, they could also be used to complement the benchmarking results by income groups.

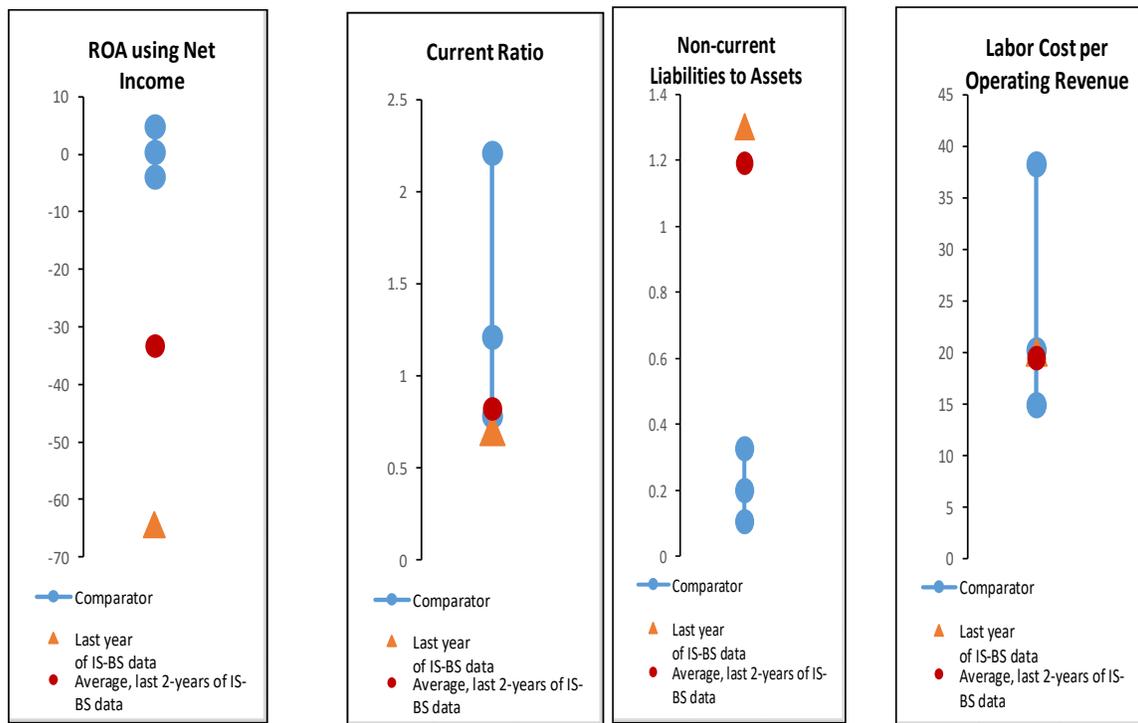
- *profitability* (e.g. return on equity or assets), which provides an indication whether the assets of the government are being well used and likely future flows to the government—either transfers from the budget to the SOEs or payments of dividends;
- *leverage* (e.g. the ratio of non-current liabilities to total assets) to gauge the level of indebtedness of the SOEs and risk of financial distress and need for government support;
- *liquidity* (e.g. current ratio) to assess the cash needed by the SOE to cope with short term obligations;
- *revenues and costs per worker* (e.g. operating revenue per employee or labor cost per operating revenue) to help assess the efficiency of the SOE.¹⁹

The benchmarks are calculated as the median, top 75th and bottom 25th percentile of the distribution of each indicator across all countries, by income group, years, and by sector at the 4-digit level where enough detail is available. Using the median, and lower and bottom percentiles, it allows to assess how the SOE compares to the average and against the best and worse group of performers, while reducing the influence of outliers. The firm-level data is mainly from Orbis (Annex 3).

As an example, figure 9 shows the benchmarking of a state-owned airline. The different panels show that the company is in a precarious financial situation. It is unprofitable and the ROA is well below the 75th percentile for other SOEs in the same sector (high ROA and ROE). Similarly, its liquidity (the current ratio) appears very weak and the company is highly leveraged (non-current liabilities to assets ratio) compared to its peers. However, its operating revenue per employee seems adequate. The low profitability, high leverage and short of liquidity indicate significant vulnerabilities and possible fiscal risks.

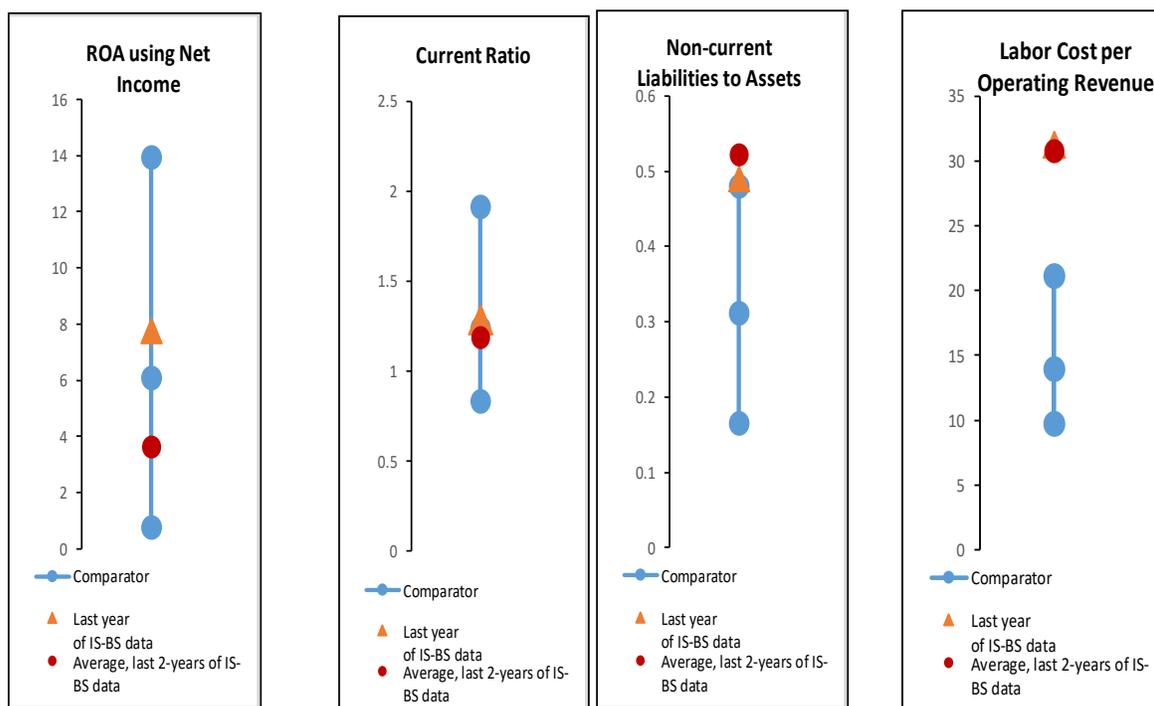
¹⁹ A true measure of efficiency should consider all the inputs of the firms. However, revenue per employee is a useful proxy for efficiency, given data constraints, allowing for comparison across SOEs.

Figure 9. Benchmarking a Public Airline Company



Source: Authors' calculations.

Figure 10 displays the benchmarking of an SOE in the electricity, gas, steam, and air conditioning supply sector. The different panels show that the company is relatively profitable (high ROA and ROE). The firm has exceptionally high labor cost per operating revenue. Liquidity seems to be adequate, but the company is highly leveraged compared to other SOEs in the same sector. The indicators flag the need to assess more carefully the firm's operations and potential future risks.

Figure 10. Benchmarking an Electricity Company

Source: Authors' calculations.

B. Forward-looking Assessment

Analyzing historical benchmarks provides indication of performance and risks, but it may not be sufficient to detect all vulnerabilities. For example, while a firm may be profitable, the high debt may make it vulnerable to frequent shocks. As such, it needs to be complemented by a more dynamic, forward-looking risk analysis building on:

- *Medium-term macroeconomic projections* (domestic and world GDP growth and inflation, exchange rate, and short-term and long-term interest rates). These projections have been developed in a baseline and a risk scenario, while the latter reflecting their baseline plus a number of shocks whose length and size can be entered by the user.
- *A matrix of shocks to macroeconomic variables*. The choice is based on past financial distress episodes.²⁰ In the three countries considered below, the stress test use at least 2–3 standard deviations from baseline real GDP growth (domestic and world) consistent with previous literature on fiscal stress tests (IMF 2016a).
- *A set of behavioral and structural parameters customized to each SOE*, encompassing: (i) its main operational characteristics, such as the share of sales in domestic and world markets, share of imported inputs, share of oil on sales and inputs, or planned investments in financial and non-financial assets; (ii) sensitivity of sales volumes and prices to macroeconomic variables (such as real GDP growth and inflation) and wage

²⁰ Shocks considered include all macroeconomic variables as well as liquidity conditions.

indexation; (iii) debt structure: share of FX-denominated, publicly guaranteed and on-lent debt and average debt tenor; (iv) policy parameters, regarding tax rates (CIT, sales, royalties and fees) and agreed dividend pay-out ratios.²¹

Combining the growth of macroeconomic fundamentals with structural and behavioral parameters, the risk tool generates projections for the SOEs revenues, costs, assets and liabilities, and aggregate financial indicators (profit and loss, cash flows and financial position), gross financing needs, net financial worth and major profitability, liquidity and solvency financial indicators.

The tool calculates net inflows from SOEs to the budget in different scenarios. Inflows include taxes, dividends and interest payments from on-lent loans.²² Outflows comprise subsidies and transfers, associated with capital injections, and they can occur either in the baseline or risk scenario. Capital injections are registered as a government expense or as an increase in financial assets depending on whether government has a realistic expectation that the ensuing rate of return will be sufficient to generate dividends or holding gains at a later date.²³ The size of transfers reflects plausible assumptions about the reaction of the government when the SOEs undergoes financial distress, and they strike a balance between two considerations:

- *Ensuring a minimum liquidity level* for the SOE.²⁴ This is assumed as most distress events are associated with liquidity problems, that may be caused either because of transitory shocks, but could ultimately reflect solvency issues.
- *Striking a balance between moral hazard and solvency considerations.* When financing needs arise, the SOE is assumed to borrow or use existing cash balances as a first resort. However, when solvency (debt-to-equity ratio) approaches a ceiling, transfers are triggered. The liquidity and solvency thresholds that prompt transfers can be calibrated, taking into consideration: (i) critical values of these ratios observed in previous distress episodes, either in the same company or in peers; (ii) the soundness of governance settings and the monitorability of management's efforts; (iii) reputational factors of the company in capital markets; (iv) the relative size of the SOEs needs to fiscal space, its size and strategic importance and (v) degree of risk aversion of the government.²⁵

²¹ The choice of these parameters is the final stage of an analysis of the drivers of the company incomes and costs, as well as its competitive strengths of vulnerabilities. Plausible values for some of these parameters can be found in SOEs financial statements or debt prospectus, but others require some degree of judgement based on past economic performance or market trends.

²² No refunds of losses are assumed. In practice, introducing these refunds would generate a trade-off with the size of transfers, but the size of net inflows would not be significantly altered.

²³ In the first case, capital injections reduce government's net worth and in the second either generate a neutral short-run effect on government's net worth, as they can be financed either by cash drawdowns or by borrowing.

²⁴ Proxied by the quick liquidity ratio, which is calculated as the sum of cash, receivables and other liquid financial assets as a share of current liabilities.

²⁵ Part of these transfers can be due to explicit contingent liabilities (debt guarantees) or government's credit risk (on-lent debt). The rest of them entails the materialization of implicit contingent liabilities.

Setting liquidity and leverage thresholds is equivalent to imposing a constraint in the way gross financing needs are met (i.e. limiting financing through cash drawdowns or borrowing). When both constraints are binding and there are no other alternatives to fill the financing gap, the government is assumed to step in.²⁶ In addition to bailouts, the tool captures other instruments that the government can use to strengthen the financial position of SOEs. For example, cutting excessively high tax or dividend pay-out ratios thereby strengthening simultaneously equity and liquidity ratios. In addition, reducing uncompensated QFAs can mitigate medium-term financial risks for SOEs. In the tool, this can be done by increasing the sensitivity of regulated prices to domestic inflation and allowing for a higher cost recovery.

Examples of three SOEs

To illustrate how the tool works, we use the example of three SOEs. They operate in emerging markets, in different sectors (electricity, air transport and oil), and have different starting financial conditions (see Annex 4 for the description of the SOEs). In baseline scenarios (drawn from WEO October 2019), sales and non-oil output prices grow around trend, exchange rates remain stable and oil prices decline slightly²⁷.

- Company A has low but positive profitability and is particularly vulnerable to domestic shocks (90 percent of its sales are domestic). High debt triggers government's capital injections even in the baseline, together with new borrowing, to meet prudential liquidity levels. Around 20 percent of these transfers are to ensure the service of government's guaranteed debt, which accounts for 50 percent of the outstanding domestic stock.
- Company B has negative equity due to large cumulative losses and it sells 50 percent of its production in international markets. Oil accounts for 50 percent of its variable costs. The negative equity, together with a relatively low liquidity, requires capital injections rather than new borrowing to meet gross financing needs, even in the baseline scenario.
- Company C has slightly negative profits at the outset of the projection period, but declining oil prices steadily deteriorate the situation; however, a starting low leverage ratio allows to avoid capital injections in the baseline.

The adverse scenarios are customized to reflect different types of shocks. For companies A and B, the shocks include capital outflows and a combination of sharp falls in real GDP growth, exchange rate depreciation, an initial spike in inflation and rising risk premia. For country A the shock is asymmetric and does not impact world growth, while for country B it is assumed that instability in global financial markets is associated with a slowdown in global growth (1.5 standard deviations) and inflation, and decline in oil prices (around one standard deviation, or USD 40 per barrel). For firm C, it assumes a COVID-like shock, with a large fall in global growth (4 standard deviations) and oil prices falling to USD 20 per barrel and a currency depreciation. The three shocks are temporary, but in the last one oil prices do not return to their baseline levels and remain at USD 40 per barrel in the medium term.

²⁶ Other ways to fill the financing gap include divestment in assets or incurrence in arrears. The first possibility is incorporated in the tool, while the latter is ruled out.

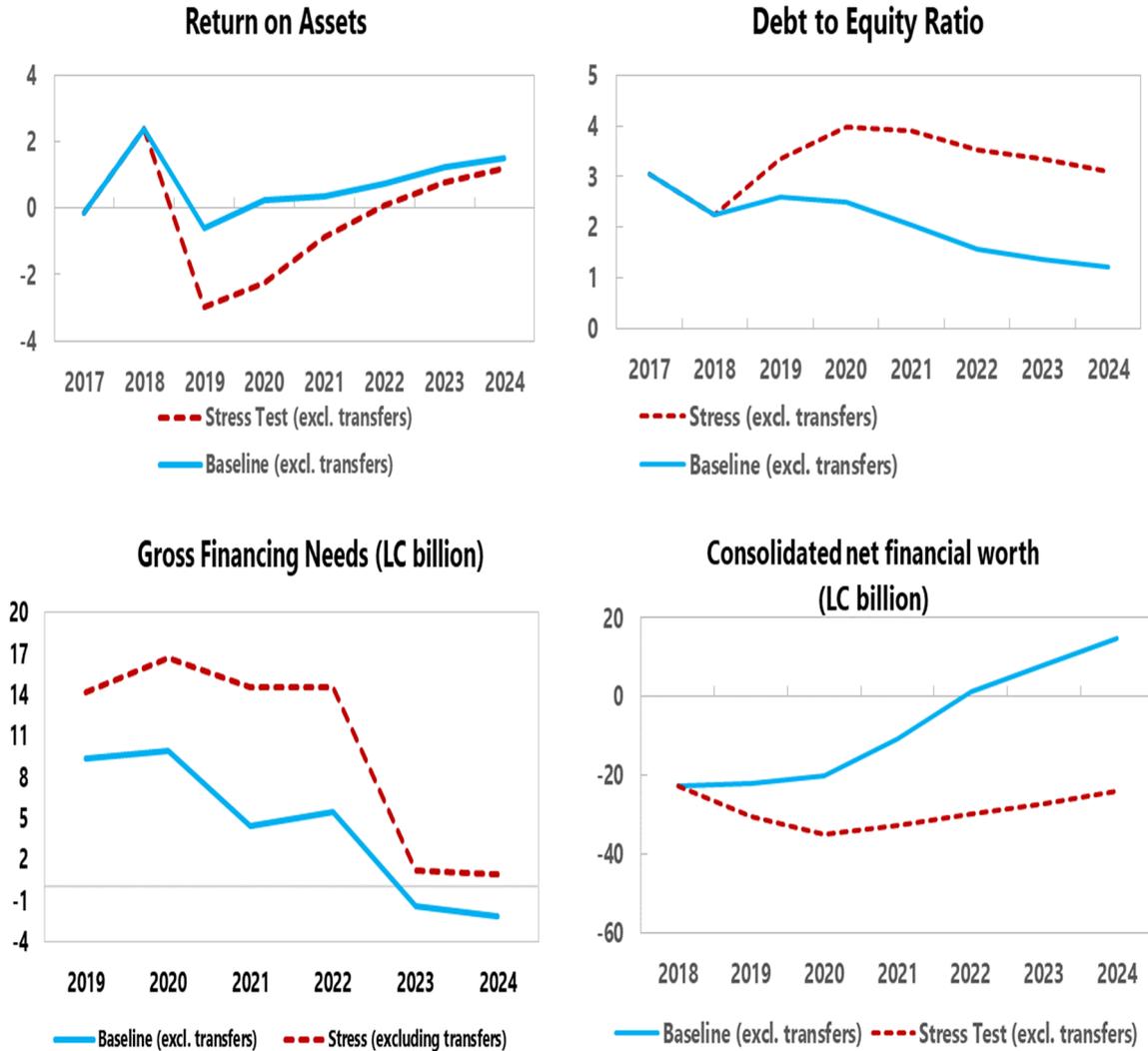
²⁷ Liquidity floors are set for the three companies between 0.5 and 0.6 of current liabilities, and the debt-to-equity ratio cap between 1.4 and 2, depending on the strength of their fundamentals.

Worsening macroeconomic fundamentals in the adverse scenarios have detrimental effects on SOEs financials:

- Real GDP growth (domestic and world) affects volume sales growth.
- Inflation has a twofold impact, on output prices and costs, each of them with opposite effects on operating profits. The relative sensitivities of each variable to inflation, as well as their starting level, will determine the net outcome.
- Exchange rates operate through multiple channels. It can affect revenues and costs the higher exports and imported inputs are. Exchange rate changes also generate valuation effects on FX-denominated debt and can affect interest payments. Stocks and returns of FX-denominated assets can also be impacted, though these effects are likely to be small.
- Oil prices are generally detrimental for operating profits, as they are part of SOEs costs. But it is the opposite for oil companies unless price effects are more than offset by exchange rate movements.
- Interest rates variations have effects on non-operating profits and expenses, through investment incomes and debt interest payments. They can also modify net present values of net inflows in the government budget.
- Domestic and international asset price swings cause valuation effects on SOEs balance sheets.
- Liquidity conditions can alter the ratio between SOEs receivables and their gross revenues (e.g. aggregate credit constraints can reduce the share of clients that pay in cash). In addition, liquidity shocks may impact expectations of commercial debt recovery and raise liquidity needs.²⁸

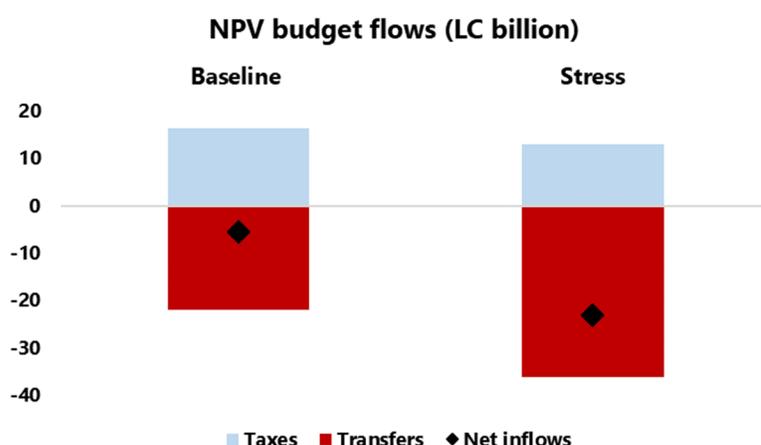
Company A is hit by the slowdown in domestic growth. The indexation of regulated electricity prices to domestic inflation is not enough to outweigh the fall in demand, and this is amplified by the currency depreciation, which increases the import bill, and higher debt service. However, oil prices (one-third of operating costs) partially mitigate the impact of the shock on net operating profits. All these effects drives profitability into negative rates (Figure 11) and larger gross financing needs. In the absence of government transfers, the company would need to borrow, and the debt-to equity ratio would surge. In turn, this would heighten solvency risks. More borrowing would also translate into a weaker contribution to public net financial worth, falling from 0.3 percent of GDP to -0.5 percent in 2024.

²⁸ Targeted cash balances, calculated as the level of cash that allows to meet liquidity thresholds, depend positively on current liabilities, and negatively on the level of receivables adjusted by risk. The worse liquidity conditions are, the lower receivables adjusted by risk, and the higher cash balances are needed.

Figure 11: Company A Selected Financial Indicators (Ex-Transfers)

To avoid a deterioration of solvency, the government steps-in more aggressively than in the baseline (Figure 12). NPV of capital injections is 0.4 percent of GDP higher in the stress scenario, and this effect is compounded by a loss of revenues (albeit to a much lesser extent). More than 30 percent of the transfers are used to service debt guaranteed by the government. Moreover, the NPV of net inflows into the budget worsens from -0.1 to -0.4 percent of GDP, mainly reflecting the increase in capital injections. However, from a medium-term perspective net financial worth remains positive and on an upward trend after the shock.

Figure 12. NPV of Net Budget Inflows
(2018 LC Billion)



Company B sells half of its services in foreign markets. The drop-in sales volumes and prices are partially mitigated by the currency depreciation, which unwinds towards the end of the projection period. Since oil accounts for half of its inputs, it softens the shock during the two first years. Still, there is a worsening in the EBIT and equity with respect to the baseline (Figure 13). Confronted with higher gross financing needs and a weaker capacity to generate cash, the company would be forced to borrow in the absence of government transfers, further deteriorating the solvency indicators.²⁹ This would cause a fall in the SOE contribution to public net financial worth (by 0.4 percent of GDP).

In view of the negative equity, it is assumed that further borrowing would not be possible and larger financing gaps would be met by capital injections (Figure 14). This differs from the government's reaction in the case of company A, which is still able to borrow in the adverse scenario. Hence, the NPV of transfers to company B raises by 0.25 percent of the pre-shock GDP and net inflows deteriorate by 0.3 percent of GDP to -0.8 percent. Thus, the main difference with firm A is that, despite vulnerabilities in B being larger, natural hedges in the structure of its operations mitigate the consequences for the government budget. However, the strongly negative contribution of the company to the public sector balance sheet even in the baseline puts the rationale of this intervention into question.

²⁹ Since profitability and debt-to-equity ratios are negative even in the baseline scenario, the analysis focuses on EBIT (the numerator of the return-to-assets ratio) and debt and equity separately. Otherwise, changes in negative ratios do not have a meaningful economic interpretation.

Figure 13. Selected Financial Indicators of Company B

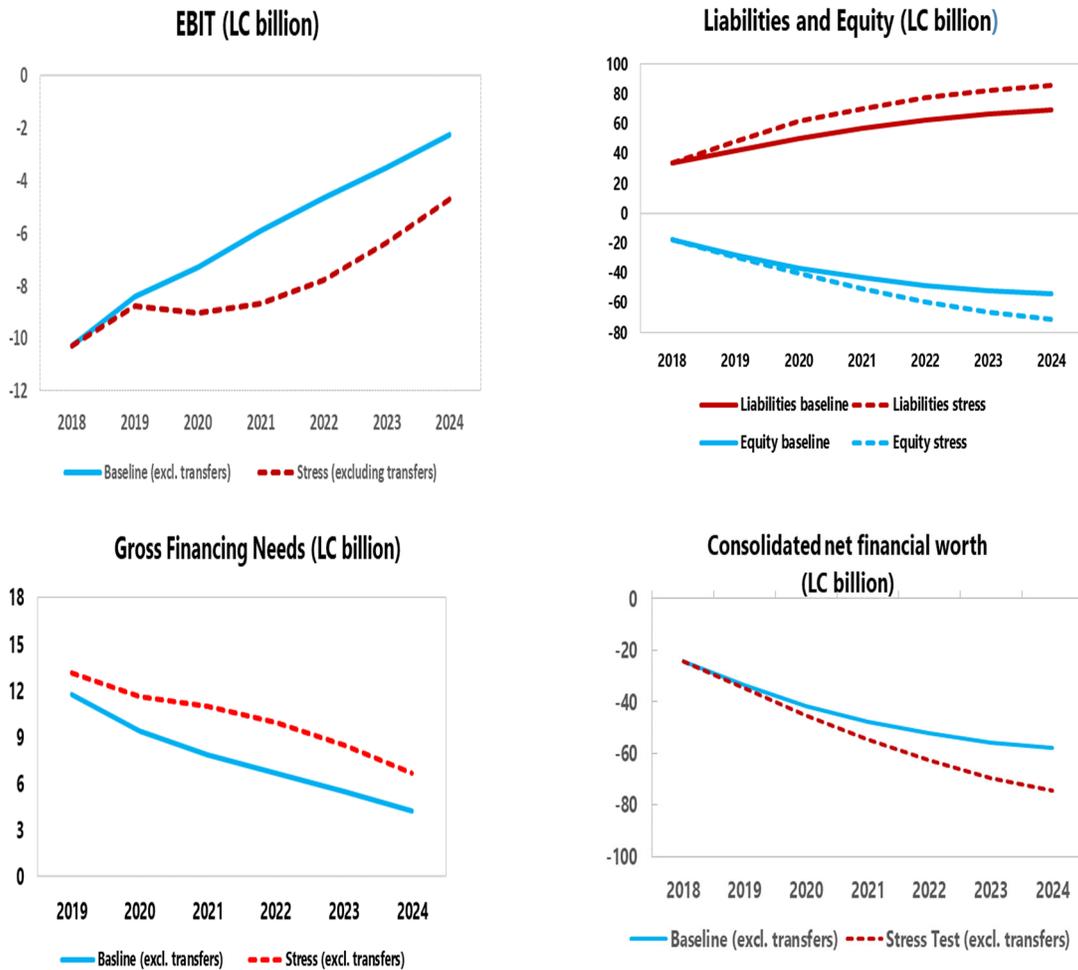
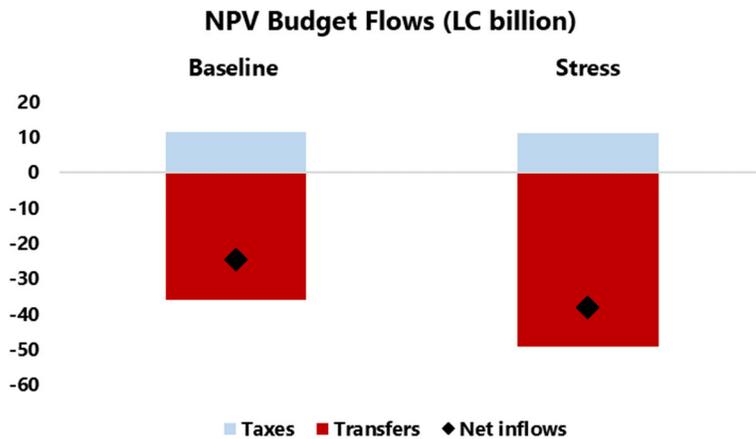
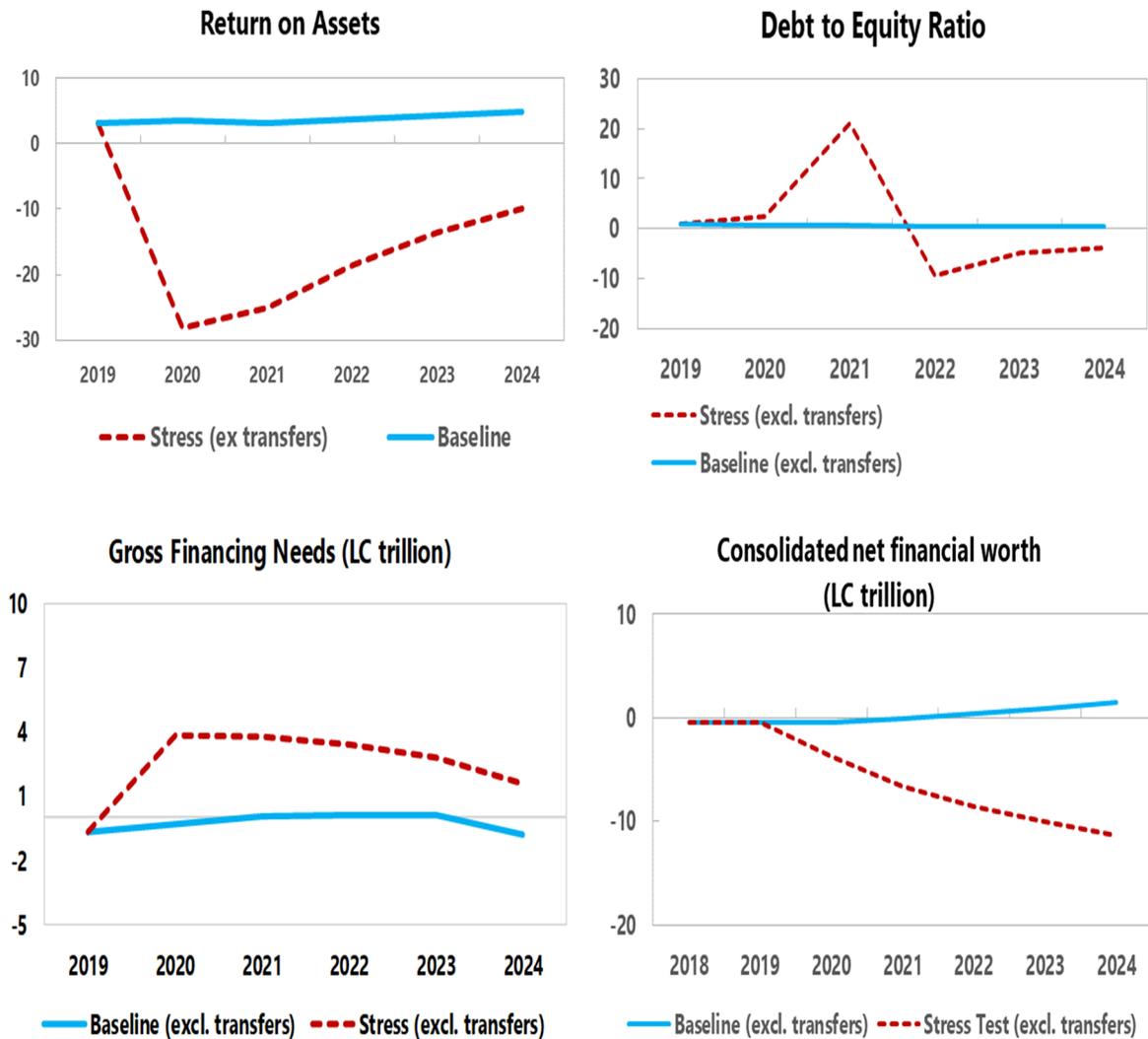


Figure 14. NPV of Net Budget Inflows (LC Billion)



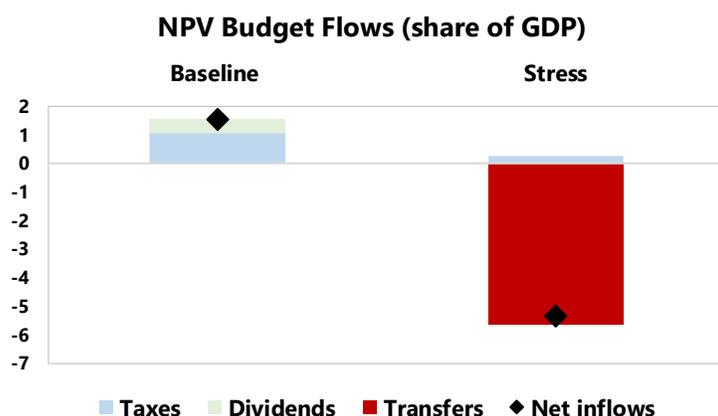
Company C sells 80 percent of oil in foreign markets. In this case, the sharp oil price fall and subsequent partial recovery, as well as the slowdown in world economy, severely hurt operating profits. In addition, non-operating revenues fall due to losses in subsidiary companies. The currency depreciates. However, because the shock has a global nature, the depreciation is limited and does not fully offset the fall in oil prices and production. The return on assets nears -30 percent at the peak of the shock, and gross financing needs surge (Figure 15). Because the company’s leverage is initially low and cash balances are relatively high, the financing needs can be partly met by using the deposits and borrowing. Some capital injections are still needed to avoid a spike in the debt-to-equity ratio and equity become negative. Absent capital injections, the contribution of the company to public net financial worth would worsen by almost 20 percent of GDP in 2024.

Figure 15. Selected Financial Indicators of Company C



The NPV of capital injections is sizeable (8.6 percent of the pre-shock GDP), dividends go to zero and taxes drop significantly. This results in a negative net contribution of the company to the budget, falling from 2.4 percent of GDP to -8.2 percent (Figure 16). This example illustrates that even relatively healthy companies can entail large budgetary costs when tail risks materialize. This reinforces the rationale for setting ambitious performance targets, and building buffers, in normal times, particularly the capacity to generate net income from the core activities of the company is low. It also reflects the usefulness of using adverse scenarios to prepare for future shocks.

Figure 16. NPV Of Net Budget Inflows from Company C
(2019 LC Trillion)



VI. MITIGATING FISCAL RISKS

A. Firm-level strategies to mitigate risks: getting incentives right

In order to contain and mitigate risks from SOEs it is crucial to ensure firms adopt prudent strategies. Informational asymmetries are a significant obstacle to ensure SOEs managers have the right incentives to be efficient and avoid excessive risk taking. Kornai (1979) coined the term “soft budget” constraints to refer to adverse incentives of public corporations in socialist economies. The problem involves managers making borrowing decisions before government decides on transfers to SOEs. If the expectation is that a bailout will occur if debt cannot be serviced, borrowing will be higher than otherwise. These types of distorted incentives—leading to excessive risk-taking and inefficiencies—apply more generally to SOEs especially when:

- the government (owner) is not able to monitor management efforts. This is a problem faced by some private firms, but there are specific challenges to SOEs. The low effort by managers may be easier to hide in companies which are not run on a commercial basis (profit-oriented). In addition, performance objectives may be ill-defined. This can be a particularly complex issue, as governments need to be able to decide on what is a reasonable level of profitability after taking into account the policy mandates (which may or not involve significant costs to the company).

- the SOE recurrently receives subventions or there are bailout precedents (moral hazard)—as SOEs are not always subject to bankruptcy laws.³⁰ Moreover, as long as markets also believe there is an expectation of bailout, they may underprice the risk of lending to the company, reinforcing the adverse incentives for management. It is common that rating agencies give similar ratings to SOEs as to the sovereign for this reason.

Adoption of bankruptcy laws or non-bailout clauses can be useful to impose discipline but may not be enough in practice. For market discipline to help, it requires several conditions. One is a high degree of transparency, namely comprehensive and frequently disclosed financial information of SOEs (including contingent liabilities). In addition, SOEs should not have preferential access to other financing sources, such as cheap credit from public banks or preferential loans from other non-financial SOEs. Moreover, the strength of incentives will also depend on the government's commitment to a no-bailout clause (or allow a SOE to go bankrupt). If the SOE has systemic importance (for example, could impact negatively financial sector given its large debt or have a negative impact on economic activity) or provides critical social services (e.g. water) such a commitment is like to be less credible. SOEs may also be hit by large macroeconomic shocks. In these cases, there may be economic and social reasons for government intervention to avoid further economic damage (see Box 2).

BOX 2. MATERIALIZATION OF LARGE SHOCKS

State-owned enterprises may need government support, even when well-managed, if hit by large and temporary economic shocks. These may involve only a few, but large, firms (e.g. oil company) or many SOEs like in the Covid-19 pandemic. In such cases, moral hazard is less relevant—as it was not behavior of management that cause the shock—but care is still needed to ensure effective use of public funds and contain the cost to taxpayers.

Some principles to prioritize and contain the cost of the government support:

- It should be directed to address only the impact of the shock and prioritize SOEs that have larger social and economic impact. Such targeted support would limit the fiscal cost while protecting core areas, such as the provision of core services (water, electricity, public transportation).
- Assess if the support to a specific SOE is the best use of limited budgetary resources. This is especially the case for SOEs that have recurrent large losses even before the crisis. If the SOE has mixed ownership there should be appropriate burden sharing with private investors.
- It should be temporary and accompanied by an exit strategy. Preferably, the support package fiscal costs and risks (e.g. from guarantees) should be capped ex ante.
- Involve high level of transparency to ensure accountability and limit moral hazard. It may require creating a framework to ensure financial monitoring and fiscal risk oversight, if the former is not place before the crisis. All types of support (including contingent liabilities) should be approved by parliament and fully reported in budget documents, fiscal reports and financial statements.

The strategy should take into account the firm-specific situation (assuming it meets principles above):

³⁰ In most OECD countries, SOEs face the same bankruptcy regulation as private firms, but less so in other countries.

- *SOEs that were profitable before the shock and impact is likely temporary.* In these cases, the first assessment is if the company has the ability to manage the temporary turbulence on its own. For example, this is usually the case for national oil companies. They can weather the volatility through several means, including borrowing, selling non-core assets, or postponing investments. Government will need to focus on protecting the budget from volatile taxes and dividends. But there may be cases when SOEs may need a temporary and limited support.
- *SOEs with low debt, but dependent on regular transfers from the budget to cover costs.* In these cases, additional financial support is likely needed through transfers or capital injections. Moral hazard issues may have some relevance, especially if the drivers of the company's losses are not easily identifiable. As such, the support should come with a strategy to improve efficiency, contain costs (wages) and improve financial planning (e.g. performance targets). It should also come with high degree of monitoring and scrutiny.
- *SOEs with systematic and large losses, and weak balance sheets.* There are the cases likely involving the largest costs to the budget. The decision to provide support should go through greater scrutiny and assess trade-offs of different options. It may be better to consider close or sell the company and have a package for workers. If public interest reasons prevail, financial support should be subject to the implementation of a reform package depending on a diagnostic of weakness (e.g. governance, technological, productive and organizational improvements).

It is also important to align management incentives with the owner's own priorities—governments need to be involved in setting and monitoring financial targets. SOE management should have the autonomy to decide how best to pursue the company's objectives, but these should be coordinated with governments to ensure they are in line with the owner's priorities. The monitoring arrangements between owners and boards can be done through performance contracts. They should contain a clear definition of the objectives, strategy, a set of key performance indicators, reporting obligations to allow for regular evaluations, the dividend policy, and a clear allocation of responsibilities for non-compliance. Financial objectives should preferably be set in multi-year corporate plans. Suitable benchmarks (as discussed above), together with the initial position of the company can be a useful input to set targets. However, these also need to take into account the costs of non-commercial mandates given to the company and sectoral strategies.

Performance contracts can be complex to design, especially regarding non-commercial mandates, and difficult to implement.

- One challenge is taking into account both the commercial and non-commercial obligations of SOEs. This includes the need to compensate SOEs that face systematic losses due to social or other policy mandates (QFAs), while taking into account the cost to the government budget. Some countries (e.g. Australia) require SOEs to add value to their shareholders and earn at least a commercial return that justify the long-term retention of assets in the business. This can be done by adequately balancing commercial and non-commercial activities, and/or covering the average costs of non-commercial—when they are significant—through subsidies. Other countries opt for adjusting the targeted profitability ratios by the share of the uncompensated costs of the non-commercial activities. Further, service quality of non-commercial obligations is underpinned in performance contracts by specific targets and/or economic incentives.

- Performance contracts have been relatively effective in some countries (New Zealand or the Nordic countries), but not in others. Some of the weaknesses have been due to (i) multiple or changing objectives or lack of link between targets and the effort of the manager; (ii) unrealistic weighting of objectives when establishing performance indexes; (iii) ill-designed incentives for management (e.g. bonus, sanctions); (iii) insufficient monitoring mechanisms, often due to a weak involvement by the board in the design and execution of the agreements, or to a faulty assessment of the costs of non-commercial activities; and (iv) lack of legal mechanisms or political will to enforce the contracts. The effectiveness of performance contracts depends on the relative bargaining powers of the supervisor and SOE management.³¹

A main source of risk from SOEs is excessive leverage, as such an option is to set limits to borrowing or debt ceilings per firm. These would need to take into consideration the firm-specific conditions.

- Borrowing limits can be easily monitored with high frequency and slippages can be quickly detected and corrected. They can be linked to firm operation (operating balance plus investment in non-financial assets and debt amortization) and can be integrated in medium-term financing plans. These limits should strike a balance between delivering the right incentives and providing some flexibility to react to unexpected events.
- Liability ceilings can be used as a medium-term anchor for financial planning, but they need to be designed carefully. In countries where information on operating revenues and expenditures is incomplete, limits to below the line operations may contribute to risk mitigation (IMF, 2015). However, care is needed. Using net financial assets (NFA) floors may be a better alternative, since they are a better indicator of solvency conditions.³² If use limits in liabilities, may want to differentiate ceilings for commercial debt with short-term maturities, not to curtail working capital financing. These ceilings should also be accompanied with prohibition of arrears.
- Use both borrowing and stock ceilings. When relying only on debt (or liability) ceilings may create the incentive to always be close to the limit, increasing vulnerabilities to shocks and make it more difficult to reverse deterioration of the financial situation. Possible valuation shocks on the stock of liabilities represent another reason for combining flow and stock targets.
- Governments could consider setting caps for leverage ratios, where assets are weighted by their risk. This could be relevant, for example, when assets are dominated by receivables from other companies in financial difficulties, real estate, equity shares, etc. All these micro-prudential ratios could be established together with ceilings for liabilities or as an alternative to them, depending on the specific risk sources of each SOE.

³¹ Shirley (1998) documents that no pattern of improvement (in productivity or profitability) was found in sample of countries (China, Ghana, India, Mexico, Philippines, Senegal and South Korea) after the implementation of performance contracts. More recent research on design shortfalls of performance contracts includes Simpson and Nyante (2015), for Ghana and Kenya, and IMF (2016b) for Thailand.

³² This is particularly relevant when increases in liabilities are linked to acquisitions of non-financial assets. If NFA floors are set, it is advisable to supplement them with liquidity performance targets or limits on short FX positions at the company level.

Ceilings on debt guarantees or other explicit contingent liabilities assumed by the government on behalf of the SOEs, or by the firms themselves, can also be useful. Explicit contingent liabilities of SOEs (such as contingent obligations undertaken in PPP contracts, or guarantees of subsidiaries debt) or government (guarantees on SOEs borrowing) may threaten fiscal targets if the risks materialize. Further, they may also undermine incentives for responsible management if they are not limited and accompanied by appropriate safeguards. Risk mitigation may be achieved by a rigorous cost-benefit analysis preceding the provision of guarantees by the government. Likewise, governments often establish quantitative limits for contingent liabilities (especially guarantees) in annual budget laws or require guarantees to be backed by collaterals. Additionally, the government may charge fees linked to expected losses to SOEs when assuming such risks or require a collateralization of guarantees³³.

A common weakness in the risk mitigation strategies has been the limited ability to effectively oversee the SOEs. The persistent problems across countries has highlighted the need to strengthen the financial oversight. Investing in improving in corporate governance standards (OECD 2015) and the tools discussed above may not sufficient if the government agency, or agencies, overseeing has limited legal or technical capacity or authority (e.g. due to fragmented responsibilities). This is even more challenging if companies are large and involve complex businesses and organizational structures. A centralized model may provide the best potential for ensuring consistency between the ownership and financial oversight functions.³⁴ This could involve an autonomous agency or holding company,³⁵ especially if they have technical expertise and can shield the firm from undue political interference. Another approach can be found in New Zealand, where the Treasury (previously it was the Crown Ownership Monitoring Unit) supports the shareholding ministers in drafting a letter of expectations for SOEs based on homogeneous criteria, as well as specific aspects for each entity. The Treasury also plays an active role in the consultations between line ministries and SOEs. This structure provides a common analytical framework for the assessment and benchmarking of performance.

B. Including SOEs in fiscal targets: limiting macro-critical vulnerabilities

SOEs use significant public resources, pursue policy goals, and can lead to large fiscal risks—this argues for ensuring their actions are in line with the broader macro-fiscal

³³ A rigorous methodology for the determination of guarantee fees, based on international best practices and objective criteria, may also reduce the risk of biasing the assessment of expected fiscal costs in favor of SOEs.

³⁴ Musacchio and Pineda (2019) argue that the evidence in Latin America shows that a strong oversight and control agency can yield better performance from SOEs.

³⁵ This includes the examples of Finland, France, Kenya, Malaysia, Peru, Philippines and Singapore. Ensuring an insulation from political interference requires a solid legal framework for the central agency. This framework can include mechanisms such as severing linkages between top managerial mandates and the political cycle, maximizing independence criteria and transparency in the appointment of management and introducing strong accountability mechanisms for the performance of the agency.

objectives of the government. There are important advantages to include SOEs in fiscal targets (in addition to fiscal statistics):³⁶

- More incentives for fiscal discipline. Firms will be under an aggregate target (e.g. overall deficit or debt limits) implying there will be competition for resources and fiscal space. Governments will likely exercise greater oversight over SOEs to ensure it abides by the targets.
- More transparency. It will reduce governments' ability to circumvent fiscal targets by shifting expenditures to SOEs. It will also reduce incentives to mandate SOEs with unfunded quasi-fiscal activities as the costs would be reflected in the consolidated targets.
- It would ensure that the broader fiscal policy goals are consistent across the public sector, for example, in keeping total public debt at safe levels. It will also help identify the risks to the broader public sector.

Some argue that including SOEs in fiscal targets could constrain their operations, especially borrowing for large investments. However, fiscal targets can, and should, be set take into account the investment plans of the government and SOEs among other considerations. The targets will ensure there is a credible and sustainable strategy to achieve the policy goals. Nevertheless, incorporating SOEs in the targets, will require strengthening medium-term planning and taking into account the specificities of SOEs.³⁷

One alternative is to include only SOEs that represent fiscal risks, but this poses some challenges.³⁸ The inclusion of SOEs under fiscal targets has been a long-standing discussion including at the IMF. IMF (2005, 2007) proposed deciding which firms should be included based on several criteria that reflected the managerial independence of the firm and the degree of risks.³⁹ While these variables are relevant in risk assessments of individual SOEs, they can yield different conclusions over time, which poses operational challenges. For example, the two largest SOEs in Brazil were excluded from the fiscal targets on the grounds they did not pose risks. However, a few years later they required financial support and their dividends dropped sharply affecting the federal budget. In addition, such criteria, would imply the definition of fiscal targets (and fiscal rules) would need to keep changing depending on subjective assessment whether the SOE posed a risk—undermining the credibility of the fiscal framework. If this approach is adopted, it would be important to have

³⁶ At a minimum, governments should ensure comprehensive coverage in fiscal targets of at least non-financial SOEs that pose significant fiscal risks and for which the government is a majority shareholder (IMF 2007).

³⁷ For example, including oil companies could potentially distort fiscal targets, but this is already an issue faced by large oil exporters. For those, fiscal sustainability can be better pursued by using non-oil primary fiscal balances as medium-term targets.

³⁸ For example, at a minimum, governments should ensure comprehensive coverage in fiscal targets of at least non-financial SOEs that pose significant fiscal risks and for which the government is a majority shareholder.

³⁹ These variables referred to: i) managerial independence regarding pricing and employment policy; ii) relations with the government (existence of subsidies and transfers; uncompensated quasi-fiscal activities and nature of regulations and tax regime); iii) governance structure and disclosure of audited financial information; iv) market access, financial condition and sustainability and v) other risk factors.

a robust assessment of possible risks over the medium term (a dynamic approach) and a high threshold to remove firms from the targets.

If SOEs are included in the consolidated fiscal targets, it will require setting individual performance targets in a coordinated manner. These targets are often negotiated between shareholding ministers and SOEs boards. The Ministry of Finance (MoF) could have a gatekeeper role in defining and monitoring financial objectives of SOEs:

- Setting-up a department for SOEs risk monitoring and assessment.⁴⁰ They should have a good understanding of all the actions undertaken by regulatory bodies and cooperate closely with shareholding ministries.⁴¹ Once fiscal targets have been set, the MoF should verify that policy objectives of SOEs are aligned with these targets. The MoF could be provided by law with veto capacity when annual budgets and corporate plans are submitted for government approval.
- Establish reporting standards to allow monitoring. These could include monthly or quarterly financial reporting, standardization of reports, ensuring publication of SOEs following IFRS standards and their conversion to GFS for fiscal reporting purposes, as well as the consolidation of SOEs individual data.
- Individual borrowing decisions should be closely monitored, and potentially authorized, by MoF to ensure compliance with their approved financial plans. Any incurrence in liabilities outside those financial plans could be submitted to a previous authorization based on a risk assessment.

VII. CONCLUSIONS

State-owned enterprises are a significant presence in countries as many operate in core economic sectors and provide basic goods and services. However, at their worse they can cause large disruptions in the economy, including recessions, and place governments in financial distress due to the need to provide bailouts. But even abstracting from the worse scenarios, the weak performance of SOEs will limit productivity and economic growth. It will also mean a burden to governments either because it will need to support the company (transfers, capital) or because of loss of revenue (dividends, taxes). Badly managed SOEs will also be less prepared to manage shocks increasing the fiscal risks to governments.

This paper presents a comprehensive analysis of the fiscal risks associated with SOEs. It identifies the main channels how SOEs can impact budgets and the most common drivers of vulnerabilities. These, in part, are driven by actions of the government (owner), especially

⁴⁰ This could be part of the centralized agency with broader control powers discussed above but the it could also be a separate unit with financial oversight responsibilities. In some countries, these units (or broader departments whose competencies include these responsibilities) are inside the MoF or the Treasury (e.g. France, New Zealand, South Africa, Jamaica), in others it is located in a specific minister in charge of SOEs (e.g. Sweden).

⁴¹ This understanding can be improved by introducing strict requirements of publication of all decisions of regulatory bodies, and by strengthening technical capacity of oversight units regarding regulatory mechanisms and analysis.

when it does not compensate the firm for non-commercial mandates that involve significant costs.

Governments, in general, have room to strengthen the capacity to better monitor the performance and risks from SOEs. A priority it that governments need to demand timely and reliable reporting from SOEs to ensure accountability. In addition, the paper introduces a “risk tool” that benchmark the SOE with its peers in other countries—providing a starting point to evaluate if the company is operating efficiently and help identify potential risks. The tool also allows to take a more forward-looking approach to better assess risks by analyzing the impact of different shocks.

There are several strategies that can be pursued to mitigate risks. A key element is to promote the right incentives by managers and avoid soft-budget constraints. Setting a no bailout condition is unlikely to be credible or sufficient in most countries. Other tools will also have to be used, including setting performance goals and limits to borrowing. Another element is strengthening the capacity of government to oversee the firms.

It is equally important to ensure governments have the right incentives. We argue there are advantages to include SOEs in fiscal targets. It creates more incentives for fiscal discipline—governments will exercise greater oversight over SOEs to ensure it abides by targets. It will prevent that governments circumvent fiscal targets by shifting expenditures to SOEs—including, reducing incentives for unfunded quasi-fiscal activities. Finally, it would ensure that the broader fiscal policy goals are consistent across the public sector, for example, in keeping total public debt at safe levels.

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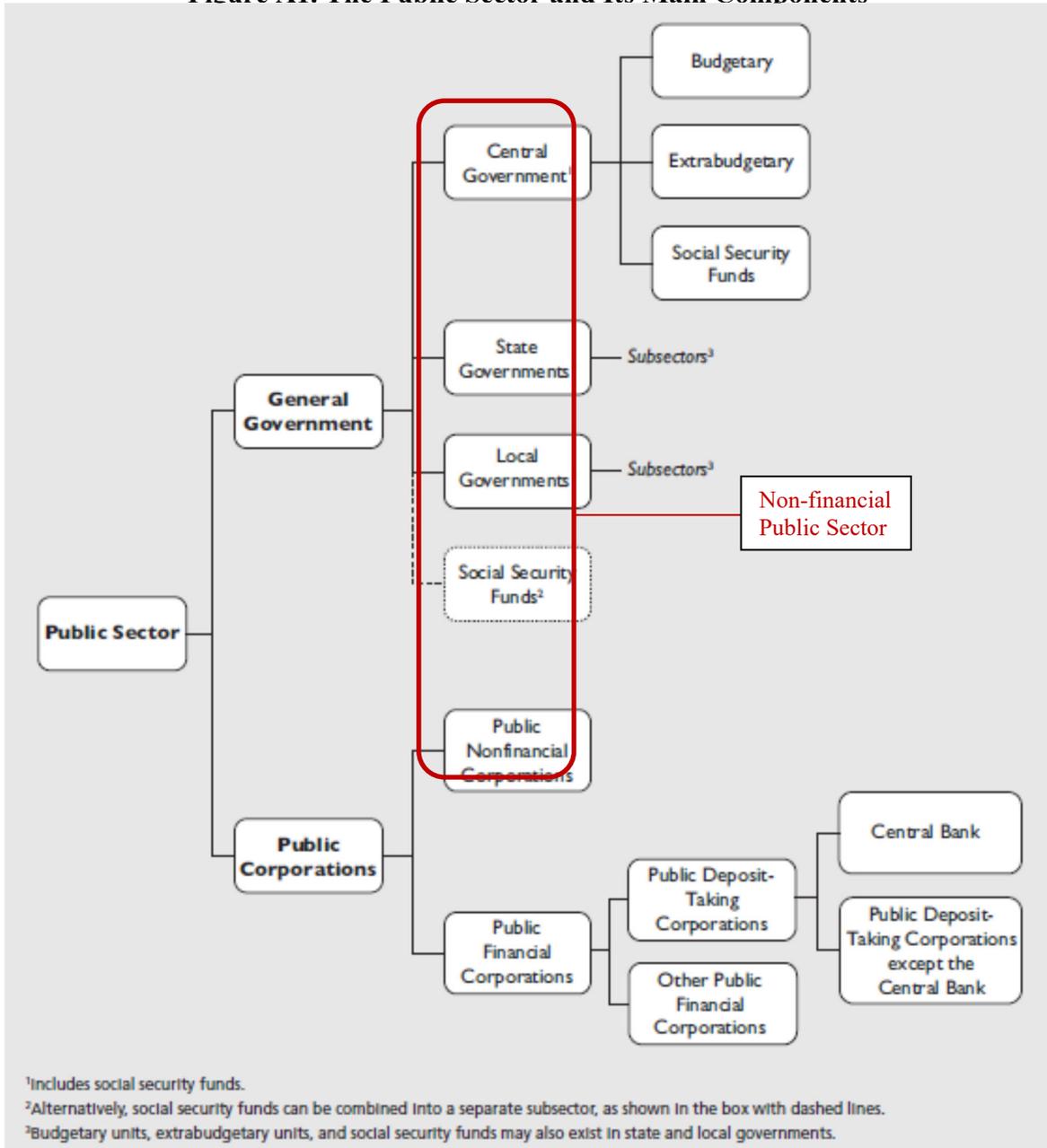
ANNEX 1. THE PUBLIC SECTOR

Publicly owned companies may be covered either under general government (GG),⁴² the nonfinancial public sector (NFPS), or the whole public-sector accounts. General government covers only non-market public companies, while the NFPS covers nonfinancial public corporations, and the public sector finally covers the entire public corporation sector (including financial public enterprises). Figure A1 summarizes this structure. Some issues on classifying SOEs:

- A public corporation is a market producer when its output is sold at economically significant prices, i.e. average costs are recovered (IMF's Government Finance Statistic Manual 2014). To verify this significance, it is tested whether the majority of the SOE's operating revenue stems from its own activities or from the budget over a 3-year period.
- However, this assessment can be complicated when profitable SOEs are given non-commercial mandates and undertake large QFAs which require annual subsidies from the budget. In these cases, it can be debatable whether the test applies, or other criteria should be developed (regarding, for instance, the expected length of QFAs, the extent of their compensation and the profitability of commercial mandates).
- Lastly, in deciding whether some market producers partially owned by the government should be classified within the public sector, GFSM 2014 proposes to assess whether there is public control of key aspects of corporate decisions: majority of voting interests, control of the board and/or appointment of key personnel or existence of golden shares or equivalent options that confers government greater control than represented by its shareholding.

⁴² General government encompasses the budgetary central government, extrabudgetary funds (EBFs), including social security funds (SSFs), non-market public corporations, and subnational governments. Countries with fiscal reporting limited to the central government do not include public corporations in fiscal statistics.

Figure A1. The Public Sector and Its Main Components



Source: Government Finance Statistics Manual 2014 (GFSM 2014) and IMF staff.

ANNEX 2. FINANCIAL INDICATORS USED FOR BENCHMARKING SOES

Variables Used in the Benchmarking		
Profitability	ROE using net income	$ROE \text{ (in percent)} = \text{net income} / \text{Shareholder funds}$
	ROA using net income	$ROA \text{ (in percent)} = \text{net income} / \text{total assets}$
Liquidity	Current ratio	$\text{Current ratio} = \text{current assets} / \text{current liabilities}$
	Interest cover	$\text{Interest cover} = \text{operating profit} / \text{interest paid}$.
Leverage	Non-current liabilities to assets ratio	$(\text{Total liabilities} - \text{current liabilities}) / \text{total asset}$
Cost and revenue	Operating revenue per employee	<i>By default, in millions of local currencies</i>
	Labor cost per operating revenue	$\text{Wage bill} / \text{operating revenue}$ (<i>In percent</i>)
Sources: ORBIS and IMF staff compilation		

ANNEX 3. A FIRM-LEVEL DATABASE OF STATE-OWNED ENTERPRISES

Cross-country information on SOEs is limited, especially with respect to their financial performance. To fill this information gap, we compile a database on SOEs' income statements and balance sheets using information available through the ORBIS database, compiled by the Bureau Van Dijk.⁴³ SOEs in ORBIS are identified through ownership as "organizations ultimately owned or de facto controlled by public sector entities".⁴⁴

We focus on domestically owned SOEs. Specifically, we drop firms whose Global Ultimate Owner (GUO) and Immediate Shareholders (ISH) have different country origin with respect to the location of the firms. We then follow the cleaning procedure suggested by Kalemli-Ozcan et al. (2015): drop duplicates in terms of identifier and year; drop SOE with limited financials; drop observation with missing year; drop company-years with missing information on total assets and operating revenue and sales and employment (simultaneously); drop the entire company (all years) if total assets is negative in any year ; drop the entire company if employment (in persons) is negative in any year; drop the entire company if sales are negative in any year; drop the entire company if Tangible Fixed Assets

⁴³ The database has in fact: 1) information on over 220 million firms worldwide in more than 100 countries; 2) covers both private and public companies; 3) provides both financial and real information (employment) about the firms; 4) it also provides historical information on firms' ownership.

⁴⁴ For practical purposes, we assume that governments must own or indirectly control at least 50.1 percent of the capital of the company. In reality, countries may control a company with significantly less than 50 percent of the shares.

(such as buildings, machinery) is negative in any year. Finally, we dropped firms that do not have information for at least 5 consecutive years, and retain only firms whose status according to Orbis is “Active”. See Baum and others (2019) for more information. Due to limited country coverage for earlier period, our final database covers the period 2007-2016, with more than 30000 SOEs for almost 80 countries.

ANNEX 4. A SCENARIO OF THREE STATE-OWNED ENTERPRISES

We consider three real SOEs from three different emerging economies. Historical data is from the financial statements until 2018. Baseline projections, given macroeconomic and behavioral assumptions, cover the period 2019–24.

The companies A, B and C operate in the electricity, air transport and oil, respectively. All of them are holding companies. A comprises generation, transmission and distribution activities. B carries out passenger and cargo transport, as well as ground handling and transport services. C covers the whole oil and gas cycle: exploration, production, transportation, refining and marketing. Their starting financial position is also quite different. Company A is highly indebted (its initial debt-to-equity ratio is above 2, which denotes elevated solvency risks) and its liquidity, proxied by the quick liquidity ratio, is also worrying. Its profitability was exceptionally high in 2018, due to some one-off operations, but in the past, it was slightly above zero or even negative. Debt amortizations are also sizeable in the near future. Company B is heavy loss-maker, with a strongly negative profitability and negative equity due to cumulative losses. Its liquidity presents an intermediate degree of risk, but debt amortization is expected to mount. Company C is profitable, but this is mainly due to its non-operating revenues (dividends from subsidiaries and capital gains from transactions with its shares); actually, its operating profits are slightly negative, even with oil prices above USD 60 per barrel, partly because an inefficient cost structure. This peculiar revenue and cost structure makes it more vulnerable to an external shock which hits both its oil and non-financial revenues. The leverage and liquidity indicators of the company remain at comfortable levels.

Over the medium-term, baseline developments in these three companies also differ. The quick ratio threshold is set between 0.5 and 0.6 in the three of them, which can be considered an intermediate risk level. In companies A and B, hitting this target will not be possible due to large debt amortizations, rising interest payments and, in the case of B, large structural losses which shrink only very gradually over time. In company C, a declining oil price trend and rising costs push profitability into negative territory from the second projection year.

The debt-to equity ratio is set at 1.4, except for the company C where it is set at 2 given its stronger fundamentals. Against this background, capital injections (their NPV amounting to 0.4 and 0.7 percent of 2018 GDP respectively) will be needed in companies A and B even in the baseline scenario. In company A, the bail out will be circumscribed to 2019, as enhanced equity will improve solvency after that year and make borrowing possible. However, persistently negative equity in company B will require capital injections over the whole projection period, totaling 1.1 percent of 2018 GDP. In company C, there is no need for the capital injections in the baseline, as there is still room for building liquidity buffers by means of borrowing.

TABLE. SELECTED FINANCIAL INDICATORS OF COMPANIES A, B AND C (BASELINE)

		2018	2019	2020	2021	2022	2023	2024
SOE	Baseline indicators							
A (electricity)	ROA	2.4	11.6	0.2	0.4	0.7	1.2	1.5
	ROA (ex-transfers)	2.4	-0.6	0.2	0.4	0.7	1.2	1.5
	Quick ratio	0.1	0.6	0.6	0.6	0.6	0.6	0.7
	Quick ratio (ex-transfers)	0.1	0.5	0.5	0.5	0.5	0.5	0.5
	Debt-to-equity	2.2	1.5	1.4	1.2	0.9	0.8	0.7
	Debt-to equity (ex-transfers)	2.2	2.6	2.5	2.1	1.6	1.4	1.2
	NPV transfers (share of GDP)	0.4						
B (airline)	ROA	-76.1	10.7	10.4	13.7	13.5	13.5	13.3
	ROA (ex-transfers)	-74.7	-71.8	-64.1	-51.0	-39.0	-27.5	-16.5
	Quick ratio	0.6	0.6	0.6	0.6	0.7	0.7	0.8
	Quick ratio (ex-transfers)	0.6	0.5	0.4	0.4	0.4	0.4	0.5
	Debt-to-equity	-1.9	-1.8	-1.9	-2.0	-2.2	-2.6	-3.3
	Debt-to equity (ex-transfers)	-1.9	-1.5	-1.4	-1.3	-1.3	-1.3	-1.3
	NPV transfers (share of GDP)	0.7						
C (oil)	ROA	5.2	3.1	3.4	3.1	3.6	4.3	4.8
	ROA (ex-transfers)	5.2	3.1	3.4	3.1	3.6	4.3	4.8
	Quick ratio	1.5	1.0	0.6	0.5	0.5	0.7	0.9
	Quick ratio (ex-transfers)	1.5	1.0	0.6	0.5	0.5	0.7	0.9
	Debt-to-equity	1.0	0.9	0.7	0.6	0.5	0.4	0.4
	Debt-to equity (ex-transfers)	1.0	0.9	0.7	0.6	0.5	0.4	0.4
	NPV transfers (share of GDP)	0.0						