MACROECONOMICS, TRADE AND INVESTMENT

EQUITABLE GROWTH, FINANCE & INSTITUTIONS INSIGHT

Assessing Public Investment Management Functions and Institutional Arrangements for State-Owned Enterprises

A Diagnostic Framework

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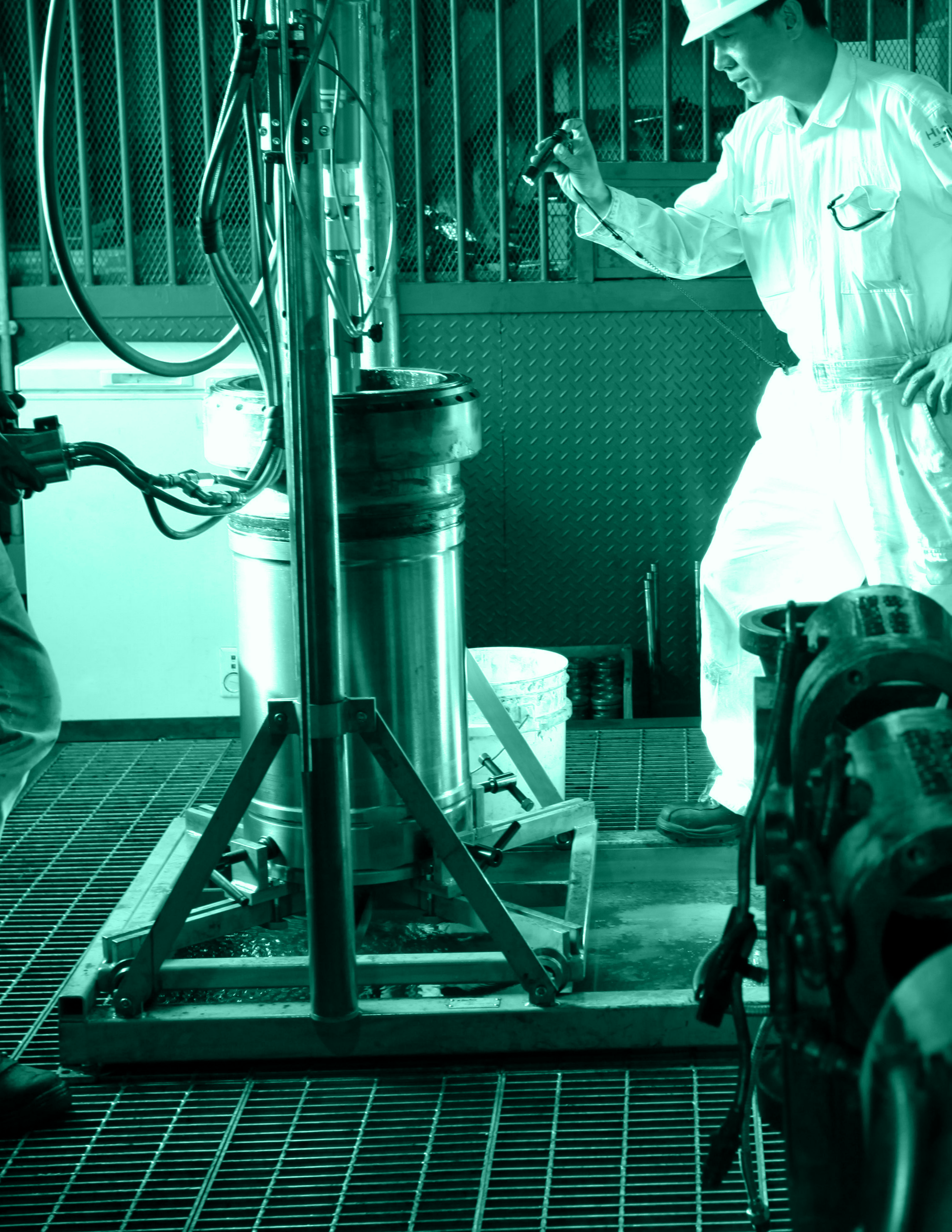

ABSTRACT

This paper provides a diagnostic framework (DF) for helping governments conceptualize and develop desirable functions and institutional arrangements for public investments managed by state-owned enterprises (SOEs).

The DF also extends its coverage to not-for-profit, quasi-independent government entities.

Determining the appropriate approach to managing SOE public investments requires a measured reconciliation of multiple trade-offs. In certain cases, when SOEs make profit-seeking investments for commercial purposes, operate in competitive markets, and make investments that present no major externalities, governments should take a hands-off approach, a scenario that may include cases in which governments simply exit and leave the corporate governance in the hands of private investors. Governments should let SOEs make their own investment decisions in pursuit of business efficiency. In such instances, governments need to establish a level playing field on which SOEs can operate and compete with private actors and exercise their public interest as a shareholder. In other cases, however, governments should establish a robust system—well aligned with the national public investment management (PIM) architecture—to regulate SOE investments. This alignment should occur when SOE investments extend the role of line ministries and are financed by the general government budget or involve large-scale projects, posing significant fiscal risks through implicit or explicit contingent liabilities. The PIM practiced by SOEs should also align with the national PIM system when there are potential detrimental impacts on the environment, climate, and resilience.

Our DF consists of four matrices intended to be used in combination to assess the gap between a country's current SOE PIM and international best practices. Matrix 1 sketches the guideposts to determine which stakeholders should guard SOE investments, focusing on who. Matrix 2 helps assess PIM functions, focusing on what should be done under each PIM function and by whom. Matrix 3 presents a framework and a set of measurement indicators to evaluate how governments should introduce PIM processes and systems. Matrix 4 gives some consideration to the project viability of SOEs. To effectively apply the DF, it cannot be used mechanically: it must be grounded in a good understanding of the country's political economy and the vested incentives of all stakeholders involved in SOE PIM.

Abbreviations and Acronyms

BRICS	Brazil, Russian Federation, India, China, and South Africa
CBA	cost-benefit analysis
DF	diagnostic framework
GDP	gross domestic product
GFS	governance finance statistics
IEG	independent evaluation group
IMF	International Monetary Fund
iSOEF	integrated state-owned enterprise framework
NPV	net present value
OECD	Organisation for Economic Co-operation and Development
PEFA	public expenditure and financial accountability
PFM	public financial management
PIM	public investment management
PPP	public-private partnership
PSBS	public sector balance sheet
RoR	rate of return
SOE	state-owned enterprise
TE	tax expenditures

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MTI INSIGHT

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Assessing Public Investment Management Functions and Institutional Arrangements for State-Owned Enterprises

>> INTRODUCTION

State-owned enterprises (SOEs) play a significant role in economies across the world. Many are ranked among the world's largest companies (World Bank 2018). While the definition of an SOE and the character of its governance structure vary from country to country, the motivations for SOEs to function efficiently and for governments to continue supporting them tend to converge to an extent. This convergence occurs because governments need to oversee SOE investments to compensate for market failures or attain strategic objectives regarding growth, development, and national security. A fundamental question remains as to whether or not SOE investments should be handled within the national public investment management (PIM) system.

Governments face trade-offs when they oversee SOE investments. On the one hand, when SOEs make profit-seeking investments for commercial purposes, operate in competitive markets, and present no major externalities, governments should take a hands-off approach, a scenario that may include cases in which governments simply exit and leave the corporate governance in the hands of private investors. Governments should let SOEs make their own investment decisions for the sake of business efficiency. In such instances, governments need to establish a level playing field on which SOEs can operate and compete with private actors and exercise their public interest as a shareholder. On the other hand, when SOE investments extend the role of line ministries and execute projects funded from the general government budget, governments should ensure financial discipline and good governance. Governments should also ensure sound governance when SOEs engage in large-scale projects, even if they are initiated for commercial purposes. The filtering mechanism could anchor on specific criteria, such as the risk and magnitude of any implicit or explicit contingent liabilities for the state and the impact of proposed projects on the environment, climate and resilience.

In this second set of cases, governments should establish a robust PIM system for SOEs aligned with the national PIM architecture. This system would guarantee that only economically and socially viable projects—aligned with the broader development strategy—enter the project pipeline and are monitored throughout the implementation stage.

The existing literature lacks a comprehensive and functional diagnostic framework (DF) that helps governments navigate these trade-offs and guides them to conceptualize and develop desirable functions and institutional arrangements for SOE PIM. Our DF aims to fill such an analytical gap. The material presented in this paper is based on the premise that a sound PIM system for SOEs—applied to both general government-financed projects and regulated SOE investments—is essential for sound public, corporate governance and efficiency. The DF focuses on the underlying necessary and sufficient functions and institutional arrangements for effective and efficient PIM by nonfinancial SOEs and other corporate government entities.

The DF extends its coverage to not-for-profit, quasi-independent government entities. These entities include a range of revenue, research, development, and statistical agencies that are often established as corporate entities. They pose similar challenges to nonfinancial SOEs in terms of integration into the broader PIM framework.

The target audience of this DF is wide ranging. It includes governments, World Bank country teams, the donor community, technical assistance providers, and academics interested in a country-specific SOE PIM. The DF will help governments and practitioners assess when the national PIM system should extend its coverage to certain SOEs, what the missing functions are, and how to create and make them operational. The DF may be of particular use in developing economies with nascent PIM for SOEs.

>>> METHODOLOGY AND STRUCTURE

The methodology underpinning the DF aligns with and complements other existing frameworks that assess various countries' PIM systems and SOE governance.

First, the DF builds on several PIM diagnostics, but then goes farther because none of the existing diagnostic frameworks specifically address SOE PIM mechanics and its institutional aspects. Rajaram and coauthors (2010) focus on assessing general government capital budgets and their subsequent publication in budget legislation. Rajaram and coauthors (2014) extend the scope of the 2010 diagnostic report with an analytical framework that harmonizes budget-funded PIM and public-private partnerships (PPPs). The IMF's Public Investment Management Assessment (PIMA; see IMF 2015, 2018a) frames the diagnostics around the scoring mechanism covering several institutional design and effectiveness indicators across the main PIM phases and institutions. The PEFA program update (PEFA Secretariat 2016) contains a specific pillar relating to the management of assets and liabilities. One indicator and its various dimensions cover the economic analysis of investment proposals, project selection, costing, and monitoring. All these diagnostic tools are prescriptive and focus on the what-should-be-done aspect of PIM reforms. The DF also draws on a recent PIM Reference Guide (Kim et al. 2020), aiming to fill the gap between what should be done and the immediate demand for pragmatic guidance from countries on how to adapt to the implied reforms.

Second, this report complements recent tools that focus on SOE governance and fiduciary management but that do not specifically address PIM at SOEs. The DF aligns with the World Bank's corporate governance tool kit (2014) and the Integrated State-Owned Enterprises Framework (iSOEF 2019). The tool kit focuses on commercial SOEs at the national level over which the government has significant control through full, majority, or substantial minority ownership. The iSOEF consists of four core modules: (a) SOEs and the markets, (b) the fiscal implications of SOE reforms, (c) the distributional impact of SOE reforms; and (4) corporate governance and accountability mechanisms.

This DF draws on the PIM diagnostics and instruments discussed above while filling in the analytical gap in SOEs. The report is anchored on the premise that SOE PIM quality is determined by two necessary and sufficient factors: the PIM system's overall efficiency and its operability and sound corporate governance. On the one hand, the DF emphasizes identifying the strengths and weaknesses of a country's institutional arrangements and procedural settings for PIM by SOEs. On the other, it is framed within the broad corporate sector governance.

The eight essential PIM functions also apply to investments undertaken by SOEs. PIM may be organized differently by different governments, but it typically comprises eight essential functions (Rajaram et al. 2010, 2014) See table 1 and the further elaboration of these essential PIM functions in Appendix A. The same functions also bind an SOE PIM system.

1. For ease of reference, we use the generic term SOEs throughout this report to refer to nonfinancial corporations and not-for-profit, quasi-independent government entities covered by the DF.
2. The tool kit (World Bank 2014) contains a suite of key transparency and corporate governance reform areas that are summarized in Appendix B. These areas provide good tools for examining ownership, appointments, and transparency issues.
3. More details on the eight essential PIM functions are presented in Appendix A.

> > >
TABLE 1 - Essential PIM Functions

PROJECT PREPARATION	PROJECT IMPLEMENTATION
1. Investment guidance and preliminary screening	5. Project implementation
2. Formal project appraisal	6. Project adjustment
3. Independant review of appraisal	7. Service delivery and facility operation
4. Project selection and budgeting	8. Project evaluation

Source: Rajaram et al. 2010, 2014.

The DF considers the eight functions in light of intrinsic factors that affect SOEs and their public investments, specifically SOE dimensions and their relationship with the central government. The DF is essentially a set of matrices (section 3) containing PIM functions (rows) and SOE dimensions (columns) populated with desirable institutional arrangements. First, the DF allows the user to identify whether an investment by an SOE may be best treated as part of the PIM system or not. Second, if PIM is appropriate, the DF helps the user understand how the central government should be involved throughout the investment phases. The DF offers a framework to assist policymakers in designing a functional architecture for SOE PIM and underpinning future reform actions.

The rest of this report is structured as follows. Section 2 discusses critical factors characterizing both the functioning and quality of SOE PIM. Section 3 presents the DF and describes how to apply it for country-specific SOE PIM diagnostics using several matrices. Section 4 concludes with some suggestions regarding additional research and further developments in assessing and governing SOE PIM.

>> THE SOE LANDSCAPE AND KEY FACTORS UNDERPINNING PIM FOR SOES

>>> SOES AND THEIR INVESTMENTS

SOEs are a core component of the public sector. SOEs play a significant role in implementing public policy by addressing market failures (natural monopolies such as the utilities that provide water, sewer services, electricity, and energy distribution), exploiting natural resources, and promoting other policy goals. The Organisation for Economic Co-operation and Development (OECD) defines an SOE as a corporate entity recognized by national law as an enterprise over which a country’s central government exercises ownership and control (OECD 2015). This definition includes joint-stock companies, limited liability companies, and partnerships limited by shares. The Government Finance Statistics Manual (IMF 2014) further distinguishes between nonfinancial and financial public corporations, as shown in figure 1. SOEs are most common in strategic sectors, such as energy, minerals, infrastructure, and other utilities, and often operate as nonfinancial corporations.

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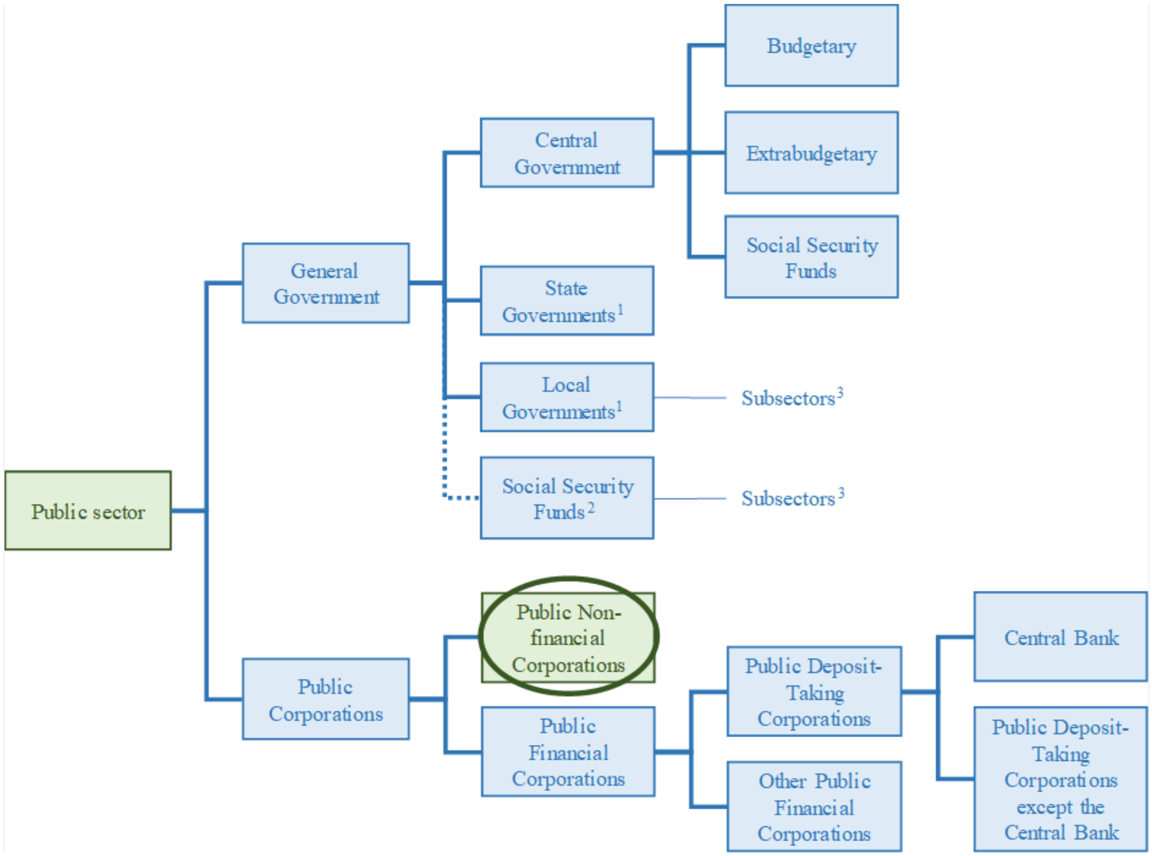
FIGURE 1 - The Public Sector and its Main Components



Source: IMF 2014.

1 Includes social security funds.

2 Alternatively, social security funds can be combined into a separate subsector, as shown in the box with dashed lines.

3 Budgetary units, extrabudgetary units, and social security funds may also exist in state and local governments.

Because SOEs make significant investments in these strategic sectors, they are an essential source of growth and employment. The Independent Evaluation Group (IEG) recently found that SOEs account for 15 percent of gross domestic product (GDP) in OECD countries and 20 to 30 percent of GDP in transitioning economies (World Bank 2018). The World Bank estimates that SOEs account globally for 20 percent of investment and 5 percent of employment (World Bank 2014). The IMF's Public Sector Balance Sheet database reports that fixed assets of nonfinancial SOEs average about 18 percent of GDP for 15 advanced economies, 24 percent for the BRICS countries (Brazil, Russian Federation, India, and South Africa, but excluding China), 17 percent for 10 emerging economies, and 12 percent for 9 developing economies (IMF 2018a).

Public investment is undertaken by the public sector, and it extends to investments by nonfinancial SOEs (figure 2). From a statistical or national accounting perspective, public investment includes investments by general government (budgetary and extrabudgetary, which includes social security funds in particular cases of portfolio investments), capital transfers or subsidies to public corporations and households, and government guarantees for investment financing by public corporations. SOE investments can pose significant explicit and implicit fiscal risks for governments. This DF focuses on investments by nonfinancial SOEs and not-for-profit, quasi-independent government entities.

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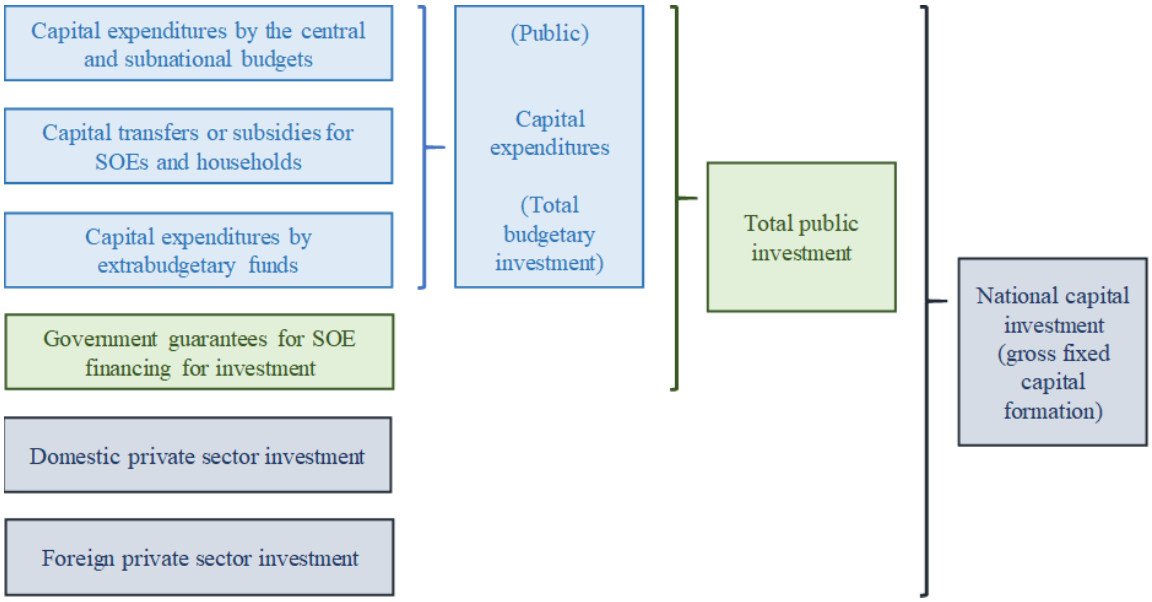
FIGURE 2 - Capital Expenditures, Public Investment, and National Capital Investment



Source: World Bank 2007.

Note: SOE = state-owned enterprise.

A fundamental issue that arises when considering investment functions and institutional arrangements by SOEs is the extent to which their investments fall within the scope of the national PIM system. A full-scope PIM system would cover all national public sector investments with a potential impact on public finances (Kim et al. 2020). In practice, however, PIM tends to be narrower in scope. Subnational governments (and their public corporations), for instance, may enjoy some degree of autonomy and be responsible for their investments. SOEs operating in competitive markets may also be subject to corporate law, their investments managed through general assemblies of shareholders.

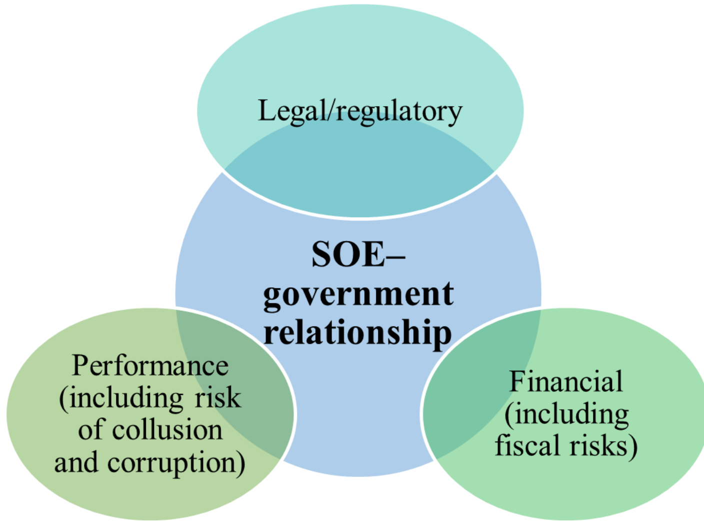
Ultimately, whether some SOE investments are managed under the national PIM system or will follow specific functions and institutional arrangements under the broader SOE governance will be a national decision. There is a strong case, though, for governments to dictate PIM for SOE arrangements in the following situations: SOE investments made with government budget financing (even partially), large-scale projects or those with tangible impact on national security, those with a discernible impact on climate and the environment, and investments (including commercial ones) with significant implicit or explicit contingent liabilities for the government. The following two subsections lay out key intrinsic factors that allow us to identify the extent to which central governments should or should not play a direct role in SOE investment management. These factors include the relationship between SOEs and the central government and SOE dimensions.

>>> SOE-GOVERNMENT RELATIONSHIP

A useful lens that can help us reflect on desirable PIM institutional arrangements for SOEs is the relationship between SOEs and the central government. This relationship can be broken down into three different layers: legal, performance-related, and financial. The following reflections regarding these three layers inform the PIM for SOE institutional arrangements recommended in the DF (figure 3).[4]

4. See the content of matrix 2 and matrix 3 in the sections that address the matrices.

> > >
FIGURE 3 - SOE-Government Relationship Layers



Source: Authors.

Note: SOE = state-owned enterprise.

>>> LEGAL AND REGULATORY FRAMEWORK

The legal framework governing an SOE is typically composed of legislation that covers, among other things, the following: (a) the corporate form of the SOE and its internal operations, (b) its financial and debt management, (c) regulated sectors, and (d) legislation concerning all businesses and corporate entities.

The scope and content of the legal framework in place in a country determine the degree of operational independence of the SOE relative to the government. The degree of operational autonomy raises questions about when and to what degree the national PIM system is applied to govern the SOE investments and how the various core PIM functions are organized and monitored so that SOE projects are consistent with broader public policy. When SOE investments fall under the national PIM system, they are subject to the PIM legal and regulatory framework.[5] Several policy questions arise: What types of appraisals should be conducted to evaluate the feasibility of projects by SOEs and the government? How should these appraisals be mandated, performed, and reviewed? For SOEs expected to be financially self-sustaining entities, how are their potential and actual financial failures assessed and managed, particularly when those entities become heavily indebted and pose a fiscal risk to the government or when they significantly exacerbate climate change and damage the environment? Which functions can an SOE conduct independently? Which functions need external monitoring, review, or direction? How does an SOE choose its methods for appraising, selecting, and implementing projects?

It is critical to consider when and how SOE PIM systems legally relate to and are integrated into the broader government PIM system. There may be wide-ranging legislation affecting SOE operations and investment behavior, but detailed PIM processes may not be explicit. In many countries, SOE PIM systems—and the related regulatory framework, guidelines, appraisal, and operational manuals—are neither developed nor used effectively when left to SOE executive decision-making bodies. In those cases, central government PIM—led by the central finance and planning agencies—is essential for guiding PIM developments or reforms of the SOE sector. On the one hand, this central government–led modality would rely on sound legislation and active oversight by central authorities over the operations of public entities. On the other hand, it demands transparency and accountability by SOEs to ensure that they operate in line with the desired PIM framework (typically a national unified PIM framework).

5. A similar logic applies when different modalities of capital budgeting, including the financing of PPPs, are used in national PIM systems and processes (see Rajaram et al. 2014).
6. In countries where the central finance and planning functions are under separate institutions, ensuring clear PIM leadership and effective collaboration between institutions is a necessary (yet not sufficient) condition for PIM success.

>>> FINANCIAL

SOEs are part of the public sector and may represent an explicit or implicit contingent liability to the general government. SOE investments may bear significant fiscal implications in the future. Several approaches are typically followed to manage SOE borrowing effectively. First, debt sustainability analysis (DSA) can be used outside the bounds of central and general government upon entities like, for instance, nonfinancial public corporations. Second, the government plans and budgets for contingent liabilities arising from SOEs. Third, the government may establish a dedicated unit within the ministry of finance or as a separate entity to actively manage government guarantees underlying large-scale SOE investments. Fourth, the government may require an integrated project appraisal, which includes risk analysis for new, complex, and large projects undertaken by SOEs. A full-scope PIM system may choose to cover all national public sector investments with a potential impact on public finances. Appendix C presents a fiscal risk matrix that helps governments assess how SOE financial operations may increase or decrease government assets and liabilities.

>>> PERFORMANCE

All public sector entities, including SOEs, should set operational and financial performance targets (short- to medium-term objectives and long-term goals). These targets allow SOEs to generate net economic benefits while adhering to resource envelopes consistent with their sales and share of government revenues.

Public corporations generally operate quasi-independently under a board of directors and a management team. Investment management by SOEs can be highly decentralized to function through the board of directors and the management team or be integrated into the government PIM system. Decentralized responsibility in a public entity may represent both a strength and a challenge. Decentralized responsibility can help a public entity become more efficient and accountable (especially when dealing with market response projects). Still, there are also challenges to controlling it and aligning it with broader public policy (the fine line of balancing commercial drive and public sector goals). Therefore, PIM functions must emphasize external review and oversight and transparent dissemination of plans and performance to the government, legislature, and the public. This transparency would strengthen the accountability of SOE corporate boards and their management.

>>> SOE DIMENSIONS

There are seven critical dimensions in a typical SOE (Figure 4). Laying out the dimensions that characterize SOEs and nonprofit government entities helps us think critically about the best institutional arrangements for their investments, conditional on each dimension’s variations.

> > >

FIGURE 4 - SOE Dimensions

1. Legal entity	Corporation or other government legal entity (authority, board, commission) established with powers to conduct financial operations or not
2. Legal basis	Incorporated under general corporate law or under special legislation
3. Purpose	Commercial market production activity, nonmarket production, or nonprofit activity
4. Market status of equity	Listed or not, tradable or not, government-controlled or not
5. Regulatory control	Price-regulated natural monopoly or natural resource exploitation, competitive bidding for provision of regulated product, or unregulated
6. Significance of externalities	Major environmental, other externalities, or insignificant externalities
7. Public financial support	General financial support for sector; entity-specific support through budget, targeted tax expenditures and loan guarantees, or procurement preferences; or no support

Source: Authors, OECD 2017.

Although using all these dimensions could result in a myriad of enterprise typologies, there are in practice only a few entity forms that have great promise as a means for assessing and guiding PIM SOE functions and institutional arrangements. The first four dimensions are related to different forms of incorporation and are directly relevant to SOE PIM governance. The DF focuses on entities that embody the first dimension. The DF covers only PIM by nonfinancial SOEs and other corporate government entities with powers to control their financial expenditures (possibly with some level of government oversight). Expenditures by other government entities are generally extrabudgetary, whether financed wholly or partially by government revenues (see figures 2 and 3).

Dimension 3 (purpose) helps us to distinguish whether SOEs pursue an economic activity or not.[7] Investment by SOEs that do not perform an economic activity (nonmarket production) or are not profit-making should be included under the national PIM system. When SOEs conduct economic activity, the central government's role in SOE investments is more nuanced, as discussed in section 2.2.

Dimensions 2 (legal basis) and 4 (market status) are essential and used explicitly in the DF. Dimension 2 defines whether a corporation operates under the country's general corporate legal system or is established under some special statute (such as a statutory corporation). For those corporations operating under corporate law, a fundamental issue is whether the corporation is listed and open to public trading and whether it is majority-owned by the government (dimension 4).

7. "An economic activity is one that involves offering goods or services on a given market and which could, at least in principle, be carried out by a private operator in order to make profits" (OECD 2015, page 15).

> > >
BOX 1 - OECD Survey of SOEs

The Organisation for Economic Co-operation and Development (OECD) collects data on state-owned enterprises (SOEs) in 40 countries based on dimensions 2 and 4. The survey captures the distribution of SOEs by sector and size. It features 32 OECD member states and eight other countries, including Brazil, China, and India (OECD 2017). An interesting finding is that, outside of India and Italy, less than 5 percent of nonfinancial SOEs are listed as corporations. Companies listed on stock exchanges, however, are usually the larger companies of an economy. As discussed in the development of the matrices form in the DF in Figure 3, these dimensions are important vectors in regard to considering public investments and their oversight in line with central government strategies and plans.

Within these forms of incorporation (dimensions 2 and 4), it is worth considering the last three dimensions in Figure 3, when assessing SOE investments. These three dimensions are also used explicitly in the DF. First, public enterprises may be subject to regulatory controls concerning prices such as natural resources, energy, and utilities (dimension 5). The OECD survey (2017) found that, excluding the financial SOEs, most of the majority-owned listed corporations are in the primary, manufacturing, electricity, and gas sectors. These sector distributions suggest that most SOEs are in regulated sectors. Second, some corporations may cause major environmental or other externalities (dimension 6). Third, some SOEs may receive significant financial support from the central government through direct assistance, tax expenditures, or contingent liabilities (dimension 7). SOE dimensions are a useful lens to look at PIM functions and constitute an integral part of the DF framework.

>> PIM DIAGNOSTIC FRAMEWORK FOR SOES

>>> INTRODUCTION

This section presents the core elements of the DF. It proposes specific institutional arrangements and procedures for each of the eight essential PIM functions (Table 1), conditional on SOE dimensions and the SOE's legally bound relationship with the government. The DF draws on those dimensions that are most relevant to the scope of this report. The DF allows for differences across types of SOEs, products, and economic externalities. It also accounts for differences in regulatory and financial support arrangements between the government and SOEs. The indicator-based conceptual framework developed follows closely the approach presented in the PIM diagnostic framework for general government and a PEFA-style PIM diagnostic tool (Glenday 2015; Glenday and Shukla 2014a, 2014b).

It is crucial to embed SOE PIM functions and systems into the broader government PIM architecture. The DF matrices guide the user regarding when to approach SOE investments under the national public investment set of processes and institutional arrangements. Like any other public sector entity, SOE PIM systems should consider central government–mandated project appraisal manuals and guidelines. These are vital for implementing coherent and coordinated sector policies across the public sector. This integration requires additional institutional arrangements to ensure that the government manages SOEs as part of the overall public sector. When the PIM system is not suitable for managing SOE investments, the various matrices also indicate what role the central government should play alongside the SOE board and regulators and how.

>>> APPLYING THE DIAGNOSTIC FRAMEWORK

As a first step before applying the DF in a particular country, the user is to analyze key factors underpinning SOEs and their investments, including corporate sector governance. This analysis should cover all intrinsic factors discussed, in sections 2.2 and 2.3, allowing the user to gain a good understanding of the following:

- The legal definition of a country's SOEs, including ownership and governance structure
- The number of SOEs and their sectoral distribution
- The market share of each SOE and its employment contribution
- The legal framework governing the creation and functioning of SOEs; some further details on the largest of them and on their dedicated legislative framework (if applicable) may be provided
- Central government budget contributions or budget financing of SOEs and the fiscal risks they pose
- The profile of each SOE in the country against the seven SOE dimensions in figure 4.

The four matrices that follow contain desirable institutional arrangements by PIM function depending on the dimensions of a given SOE. Institutional arrangements are informed by the relationship that the SOE has with the central government. With a good understanding of the country's SOE landscape, the user should analyze a specific SOE along its various dimensions regarding the form of incorporation, externalities, and government support and identify what position the SOE would occupy in the diagnostic matrices. Each cell in each matrix proposes desirable PIM for SOE arrangements given the specifics of each enterprise.

- Matrix 1 focuses on which stakeholders should be involved (who).
- Matrix 2 contains more detailed information by PIM function and focuses on what should be done under each PIM function and by whom.
- Matrix 3 presents more granular information on how PIM processes and systems should be put in place, and it proposes several indicators considering best practices.
- Matrix 4 considers the viability of projects and how financial and economic decisions on SOE public investments can be interrogated.

Matrices 1 to 3 apply to SOEs as entities and should be used sequentially. Matrix 4 relates to projects. They can be used independently for specific SOE investments once the user has established the desirable PIM institutional arrangements for the SOE.

>>> MATRIX 1: INSTITUTIONAL ARRANGEMENTS BY FORM OF INCORPORATION, FINANCIAL SUPPORT, AND EXTERNALITIES

The DF's first matrix combines broad PIM functions with SOE dimensions of incorporation, regulatory controls, public financial support, and externalities (Figure 5.). The matrix's objective is to help determine who should undertake project review, selection, adjustment, and evaluation: the board of the entity, the government, the regulator, or a combination of these stakeholders.[8]

First, Matrix 1 distinguishes between for-profit entities pursuing an economic activity and those that are not (Dimension 3 in Figure 4). Three company or entity types are identified: (a) for-profit companies that produce private goods and services, (b) regulated for-profit companies in natural resource or natural monopoly network sectors (dimension 5), and (c) not-for-profit government entities.

- On the one hand, when the SOE pursues an economic activity, even if the SOE is established as part of a government's industrial policy, the government's role in SOE investments should be at arm's length and its interest exercised mainly through the state's role as shareholder.[9] In countries with more advanced systems, these types of SOE investments generally fall outside the scope of PIM. By contrast, in the Republic of Korea, major public investment projects in SOEs funded by the central government are subject to the national PIM system.
- On the other hand, when a government investment has public policy objectives that are not the SOE's primary economic activity or when an SOE has been established to achieve public policy objectives that enhance welfare or public services, SOE investments may be included in PIM (Kim et al. 2020).[10]

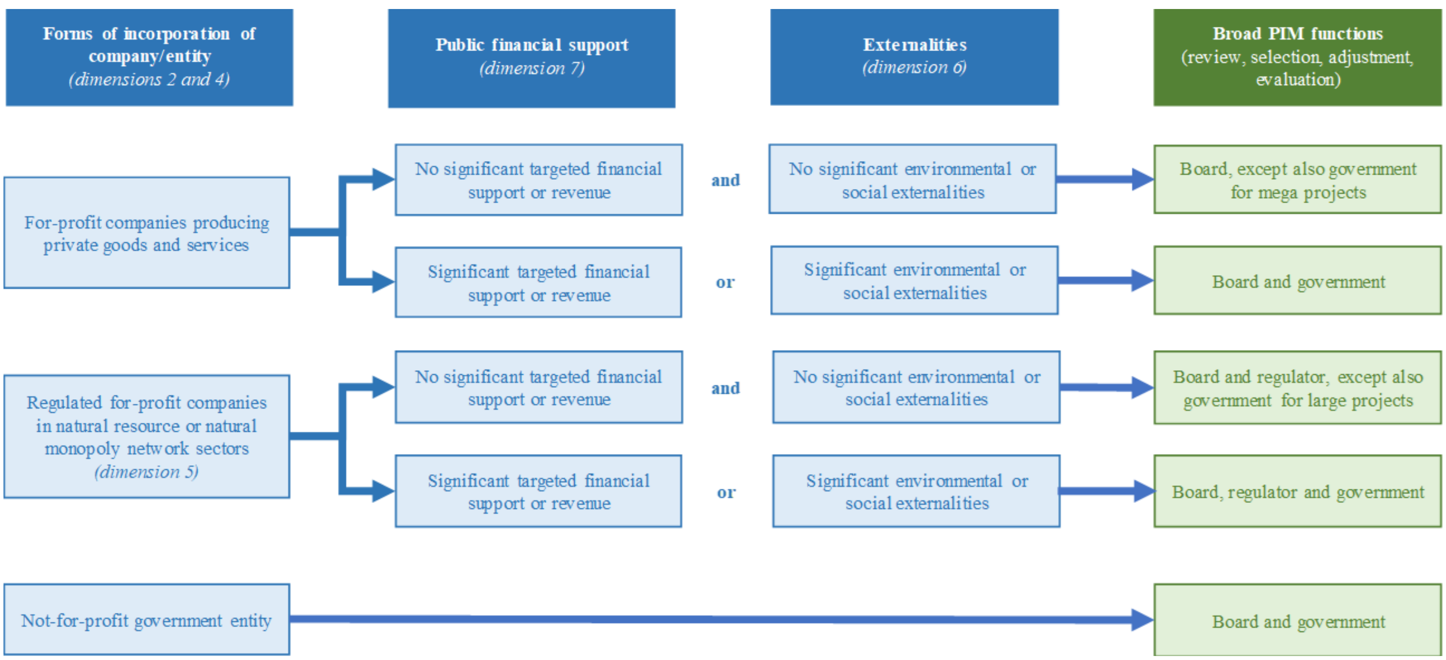
8. From the eight essential PIM functions listed in Table 1: project review includes functions 1–3; project selection includes function 4; project adjustment includes function 6 and project evaluation includes function 8.
9. See also, for example, Kim et al., 2020.
10. "Public" can be interpreted as indicating a public policy purpose—that is, through the delivery of public services or other welfare-improving effects.

The matrix then focuses on whether the SOE receives significant financial support from the central government (dimension 7) and whether it generates substantial environmental or social externalities (dimension 6).[11]

- If for-profit SOE projects are deemed to cause significant environmental or social externalities, the government should be involved in all investment decision-making stages.[12] Decisions on financing these investments are not simply resting with the company board and regulators. The government (especially the central financial and planning agencies) should participate in ex ante project review and selection and ex post project adjustment and evaluation. The government should also be involved in all large private sector and regulated sector projects run by SOEs.
- In regard to not-for-profit government entities that depend on government budget support, the government should also be involved in investment management, at least for all large projects. Investments by these entities may be subsumed under the national PIM. The central government can provide significant financial support to an SOE through the budget (support for specific investment projects through direct budget support, on-lending, guarantees, targeted tax expenditures, or procurement preferences) or revenues from the project (such as royalties or resources rents received over and above regular corporate taxes).

> > >

FIGURE 4 - SOE Dimensions



Source: Authors.

11. Social externalities can include displacement of communities by projects.
12. It is worth adding that all environmental and social externality regulations should be applied uniformly to all types of firms, including the SOEs.

>>> MATRIX 2: INSTITUTIONAL ARRANGEMENTS BY ESSENTIAL FUNCTION, INCORPORATION, REGULATORY CONTROL, AND PUBLIC FINANCIAL SUPPORT

While matrix 1 conceptualizes a road map to determine who to involve in what kind of SOE investments, matrix 2 shows how to treat SOE investments relative to the national PIM system (table 2). The latter focuses on what should be prepared under each PIM function and by whom, conditioned on the various dimensions of SOE incorporation, regulatory control, and public financial support. Matrix 2 further breaks for-profit SOEs into listed and traded or not and then considers institutional arrangements required under each of the eight core PIM functions.

> > >
TABLE 2 - Matrix 2: Institutional Arrangements by Essential Function, Incorporation, Regulatory Control and Public Financial Support

<table>
<tr><th rowspan="3">CORE PIM FUNCTION</th><th colspan="7">COMPANY/ENTITY</th></tr>
<tr><th colspan="2">For-profit listed or traded</th><th colspan="2">For-profit not listed or traded</th><th colspan="2">Regulated for-profit</th><th rowspan="2">Not-for-profit entity</th></tr>
<tr><th>No budget support, targeted TE, or explicit guarantees</th><th>With budget support, targeted TE, or guarantees</th><th>No budget support, targeted TE, or explicit guarantees</th><th>With budget support, targeted TE, or guarantees</th><th>No budget support, targeted TE, or explicit guarantees</th><th>With budget support, targeted TE, or guarantees</th></tr>
<tr><td colspan="8">Project preparation phase</td></tr>
<tr><td rowspan="2">1. Strategic guidance and preliminary screening</td><td rowspan="2">Treat as part of government private sector economic strategy; SOE develops own strategy and guidance</td><td>Treat as part of public sector strategies, depending on economic externality justifying government subsidy or support.</td><td rowspan="2">Treat as part of government private sector economic strategy; SOE develops own strategy and guidance</td><td>Treat as part of public sector strategies, depending on economic externality justifying government subsidy or support.</td><td rowspan="2">Treat as part of sector-specific planning and strategy.</td><td>Treat as part of sector planning and strategy, depending on economic externality justifying government subsidy or support.</td><td>Treat as part of sector-specific planning and strategy.</td></tr>
<tr><td>Government provides reasons and targets for public policy activities required to be undertaken by entity</td><td>Government provides reasons and targets for public policy activities required to be undertaken by entity.</td><td>Government provides reasons and targets for public policy activities required to be undertaken by entity.</td><td>Government provides reasons and targets for public policy activities required to be undertaken by entity.</td></tr>
<tr><td rowspan="3">2. Formal project appraisal</td><td>Focus on financial and risk analysis except in case of major environmental or social externalities or mega project.[a]</td><td>Conduct full integrated analysis for all large projects.</td><td>Focus on financial and risk analysis except in case of major environmental or social externalities or mega project.</td><td>Conduct full integrated analysis for all large projects.</td><td>Focus on financial and risk analysis except in case of major environmental or social externalities or mega project.</td><td>Conduct full integrated analysis for all large projects.</td><td>Conduct full integrated analysis for all large projects.</td></tr>
<tr><td colspan="7">Require to use standard project appraisal manual and apply appraisal method as appropriate to project size and types as specified in PIM guidelines or manual.[b]</td></tr>
<tr><td colspan="7">Apply supplement to project appraisal manual that covers debt sustainability of project, SOE and government, default risks, and fiscal risks faced by central and subnational governments and other external guarantee agencies.</td></tr>
</table>

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<tr><td colspan="8">Project preparation phase</td></tr>
<tr><td rowspan="2">3. Independent review of appraisal</td><td colspan="2">Ensure compliance with public reporting requirements for company plans, performance and financial statements as required by regulatory body of stock market
Treat as part of public sector strategies, depending on economic externality justifying government subsidy or support.</td><td colspan="5"></td></tr>
<tr><td colspan="7">Require all appraisals of mega[a] and large projects to be reviewed jointly by ministries responsible for finance, planning, and sector management, and where feasible, have mega and large projects reviewed by agency with independent experts.</td></tr>
<tr><td rowspan="3">4. Project budgeting and selection</td><td>Require board decision except in case of major externalities.</td><td>Require board plus government approval.</td><td>Require board decision except in case of major externalities.</td><td>Require board plus government approval.</td><td>Require board plus regulator decision and government approval in case of major externalities.</td><td>Require board, regulator, and government approval.</td><td>Require board plus government approval.</td></tr>
<tr><td colspan="4"></td><td colspan="2">When SOE and private companies engage in competitive bidding for supply of regulated product, ensure unbiased selection process.</td><td></td></tr>
<tr><td colspan="7">All SOEs provide publicly available annual reports of strategies and goals, investment plans, dividend policy and payouts, and full financial statements; when an entity undertakes public policy activities, it should also report on any performance agreement or contract with the government, its plans, performance, and costs.</td></tr>
<tr><td rowspan="2">5. Project implementation</td><td colspan="7">Adoption of government or alternative competitive procurement rules</td></tr>
<tr><td colspan="2">Listed SOEs should provide copies of all interim reports or statements required by the relevant stock market, as well as copies of all project completion reports.</td><td colspan="5">All entities should conduct active project management and monitoring and provide project progress and completion reports for all large projects.</td></tr>
<tr><td>6. Project adjustment</td><td>Require board decision except in case of major externalities.</td><td>Require board plus government approval in case of large adjustment.</td><td>Require board decision except in case of major externalities.</td><td>Require board plus government approval.</td><td>Require board plus regulator decision.</td><td>Require board, regulator, and government approval.</td><td>Require board plus government approval.</td></tr>
</table>

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<tr><td colspan="8">Project preparation phase</td></tr>
<tr><td rowspan="3">7. Service delivery/facility operation</td><td colspan="2">Listed SOEs should provide copies of all interim reports and annual financial statements required by the relevant stock market.</td><td colspan="5">All SOEs should provide quarterly and annual financial statements in hard and digital copy.</td></tr>
<tr><td rowspan="2"></td><td>Performance contract exists for public policy activities.</td><td rowspan="2"></td><td>Performance contract exists for public policy activities.</td><td rowspan="2"></td><td>Performance contract exists for public policy activities.</td><td>Performance contract exists for public policy activities.</td></tr>
<tr><td>Report periodically on the performance of the production of social or policy activities: the nature of the activity, the quantities achieved, the cost incurred, and government support received.</td><td>Report periodically on the performance of the production of social or policy activities: the nature of the activity, the quantities achieved, the cost incurred, and government support received.</td><td>Report periodically on the performance of the production of social or policy activities: the nature of the activity, the quantities achieved, the cost incurred, and government support received.</td><td>Report periodically on the performance of the production of social or policy activities: the nature of the activity: the quantities achieved, the cost incurred, and government support received.</td></tr>
<tr><td rowspan="2">8. Project evaluation</td><td>Focus on financial and risk analysis except in the case of major environmental or social externalities or mega project.</td><td>Complete full integrated analysis for all large projects.</td><td>Focus on financial and risk analysis except in the case of major environmental or social externalities or mega project.</td><td>Complete full integrated analysis for all large projects.</td><td>Focus on financial and risk analysis except in the case of major environmental or social externalities or mega project.</td><td>Complete full integrated analysis for all large projects.</td><td>Complete full integrated analysis for all large projects.</td></tr>
<tr><td colspan="7">Ensure timely completion, publication, and review (by government ministries responsible and legislature) of all external audit reports.</td></tr>
</table>

Source: Authors.

Note: The core PIM function follows the PIM stage categorization in Rajaram and others 2010 and Rajaram and others 2014. Dimension 6 (externalities) is discussed within the matrix and not differentiated through column headings. PIM = project investment management; SOE = state-owned enterprise; TE = tax expenditure.

a. Countries may define the specific thresholds differently for megaprojects. The classification as megaprojects should facilitate appropriate institutional and procedural arrangements for managing and ensuring the efficiency of PIM, considering the critical role and disproportionate fiscal outcomes such projects can have.

b. PIM guidelines or manual should be in the form of regulations or otherwise sanctioned by legislation and regulations regarding public finance management or public investment management.

Unregulated SOEs listed and traded on public stock exchanges and controlled by the government can be treated as private companies, but they still need to report transparently and comprehensively to the government, the legislature, and the public. As discussed earlier, the state should exercise its interest in SOE investments primarily as a shareholder. SOEs controlled by the government and not traded typically require greater public transparency, government oversight, and integrated appraisal approaches. This is particularly applicable in the case of large projects in which significant externalities arise from their operations. Not-for-profit entities largely conduct public policy activities funded by general government revenues. These entities are essentially government agencies that provide social or other policy-related services that are part of the government operations. In these cases, the agency PIM system needs to be well integrated into the government planning and investment system.

When for-profit SOEs generate major externalities (such as changes in greenhouse gas emissions, air or water pollution, deforestation, community resettlement) or receive significant government support through budget support, loan guarantees, or targeted tax expenditures, the government needs to be involved in project design and appraisal from an economic, distributional, and financial perspective.[13] The government should also engage in project and budget approval and ensure that the project is implemented efficiently and effectively. In short, the central government should provide a uniform approach as defined under the general PIM.

For SOEs that provide public policy–related services on behalf of the government, there should be explicit performance agreements, financial compensation, and performance monitoring and evaluation that support the SOE's integration into government operations. When the government on-lends to the SOE or provides loan guarantees, the government needs to be actively involved in assessing and managing the fiscal risks arising from the project at the corporate, government, and public sector levels.

>>> MATRIX 3: INSTITUTIONAL ARRANGEMENTS AND INDICATORS BY FUNCTION

Matrix 3, on the basis of the SOE PIM high-level governance framework under matrix 1 and matrix 2, presents a fuller set of desirable institutional arrangements and indicators for each of the eight PIM functions. The third matrix focuses on what specific PIM processes and systems should be in place. It contains best-practice institutional arrangements, procedures, and related measurable indicators per PIM function (table 3). Embedding the SOE PIM system into the government's broader PIM system is vital because this symbiosis makes it easier to align SOE investment plans with the government's national and sectoral priorities. This integration can also help ensure that SOE-government investments are mutually reinforcing from an economic perspective, jointly deliver the desired distributional impacts, and promote fiscal stability in the public sector.

The desirable institutional arrangements suggest targeting critical public investments that are likely to produce major economic externalities and that may generate significant fiscal risks. These arrangements aim to be comprehensive and promote SOE transparency toward the government, the legislature, and the public regarding their investment plans and financial statements. The suggested arrangements should strengthen accountability and enhance performance. If implemented, they would also facilitate consolidated public sector accounts and their use in fiscal risk management. The rationale for the institutional arrangements and proposed indicators presented in matrix 3 is discussed in more detail in Appendix D.

13. Significant government support should be specified further (a project receives support valued at more than 5 percent, say, of its gross revenue or total costs). Budget support may be in the form of a subsidy or as compensation for public policy–related services.

> > >

TABLE 3 - Matrix 3: Institutional Arrangements, Indicators by Function

PROJECT PREPARATION PHASE		
Core PIM Function	**Desirable Institutional Arrangements**	**Indicators**
1. Strategic guidance and preliminary screening	1.1 Mechanisms to coordinate sector market analysis between government sector planners and controlled SOEs in regulated sectors and SOEs receiving significant government support	1.1. SOE-planned output performance and investments integrated into government-published sector strategic plans
1. Strategic guidance and preliminary screening	1.2. Performance contracts or explicit targets provided for public policy activities required of SOE or other public entity	1.2. Documented performance contracts or explicit targets for public policy activities of entity
2. Formal project appraisal	2.1. Existence of project appraisal manual covering integrated approach and related capacity and training	2.1. Existence and requirement to use a project appraisal manual along with training arrangements and funding to sustain capacity
2. Formal project appraisal	2.2. Existence of PIM manuala that lays out channels for screening and appraising projects on the basis of size, complexity, and prior experience, which also specifies application to SOEs and other entities	2.2. PIM manual[a] specifying appraisal channels and application of integrated appraisal to SOEs and other government entities
2. Formal project appraisal	2.3. Unit(s) in government to analyze and screen government in relation to lending and guarantees and, more broadly, public sector financial and fiscal risks and sustainability	2.3. a. Public sector debt management, loan guarantee, and fiscal risk units b. Existence of full consolidated public sector accounts
3. Independent review of appraisal	3.1. Existence of external institution (university or research institute) with independent technical capacity in sector analysis and project appraisal to conduct technical reviews of large and complex projects	3.1. Number and share of feasibility or prefeasibility studies of large or complex projects by SOEs in regulated sectors or projects receiving significant government support subject to external technical review
3. Independent review of appraisal	3.2. Existence of interministerial committees (finance, planning, and sectoral ministries) for technical review of project feasibility studies	3.2. Number and share of feasibility studies of large or complex projects by SOEs in regulated sectors or projects with significant government support subject to review by interministerial technical committee
4. Project budgeting and selection	4.1. PIM manual[a] and budget procedures make clear where government approval is required in addition to board approval, which would include all large projects with significant externalities, significant government support, or significant public policy functions	4.1. Government approval process for affected SOE investments and government budgeting of contingent and direct liabilities; explicit budgeting of all compensation for public services provided by entity and all guarantees and contingent liabilities on government
4. Project budgeting and selection	4.2 Mechanisms mandated to ensure transparent and unbiased competitive selection of companies to provide regulated products or services	4.2 Transparent procedures used to select providers of regulated products or services
4. Project budgeting and selection	4.3. To ensure full transparency, SOE and public entity investment plans and financial accounts made available to parent ministries, appropriate committees of legislature, and unless security issues are involved, general public, while ideally, plans and reports are posted on website of entity and parent ministry	4.3. Digital publication on internet websites of SOE and other entity and parent ministry of all investment plans and financial statements (subject to redaction for national security reasons)

PROJECT PREPARATION PHASE		
Core PIM Function	**Desirable Institutional Arrangements**	**Indicators**
5. Project implementation	5.1. Transparent and competitive e-procurement rules and procedures adopted	5.1. Existence of transparent and competitive e-procurement rules and procedures of both government and SOEs
	5.2. All SOEs and other public entities have (a) clear project implementation management procedures, (b) monitoring and reporting procedures on project implementation physical and financial milestone achievements, (c) requirements for a completion review and report ,and (d) asset registration and management	5.2. Regular (at least quarterly) progress reports and final completion report to parent ministry or regulator agency on all projects that required government approval and registration of assets
6. Project adjustment	6.1. Transparent allocation of authority and clear procedures for government or a regulator to review and approve any major adjustments to any project and its funding that initially required government and regulatory approval	6.1. Documentation of explicit allocations of authority and procedures to manage project adjustments
	6.2. Procedures and institutional capacity to handle budget reallocations when adjustments have budget implications for government	6.2. Documented procedures and evidence of actual practice of budget reallocations in response to project adjustments
7. Service delivery/facility operation	7.1. Regular (at least quarterly) reporting of service delivery, operating and maintenance costs and receipt of budget support (where applicable) by projects requiring initial approval by government or regulatory authority	7.1. Regular reports on service delivery, operating and maintenance costs, and the receipt of budget support (where applicable) by projects requiring initial approval by government and regulatory authority received by these agencies and the ministry of finance
8. Project evaluation	8.1. Where entity conducts major public policy activity and output, entity conducts impact evaluation of service delivery	8.1. Impact evaluation reports in the case of major public service delivery by entity
	8.2. Timely submission and where appropriate publication of external audit, reports to government and legislature audit committee; effective scrutiny of audit reports by legislature and effective response by entity to recommendations of legislature	8.2. Timely review and recommendations from audit committee on entity external audit reports, and timely response by entity to recommendations
	8.3. For large and complex projects requiring government approval, ex post evaluations conducted after about 10 to 15 years from project start	8.3. Ex post project evaluation reports of large-scale and complex projects made publicly available

Source: Authors.

Note: The core PIM function follows the categorization of PIM stages in Rajaram et al. 2010, 2014. PIM = project investment management; SOE = state-owned enterprise.

a. PIM manual should be in the form of regulations or otherwise sanctioned by legislation and regulations regarding public finance management or public investment management.

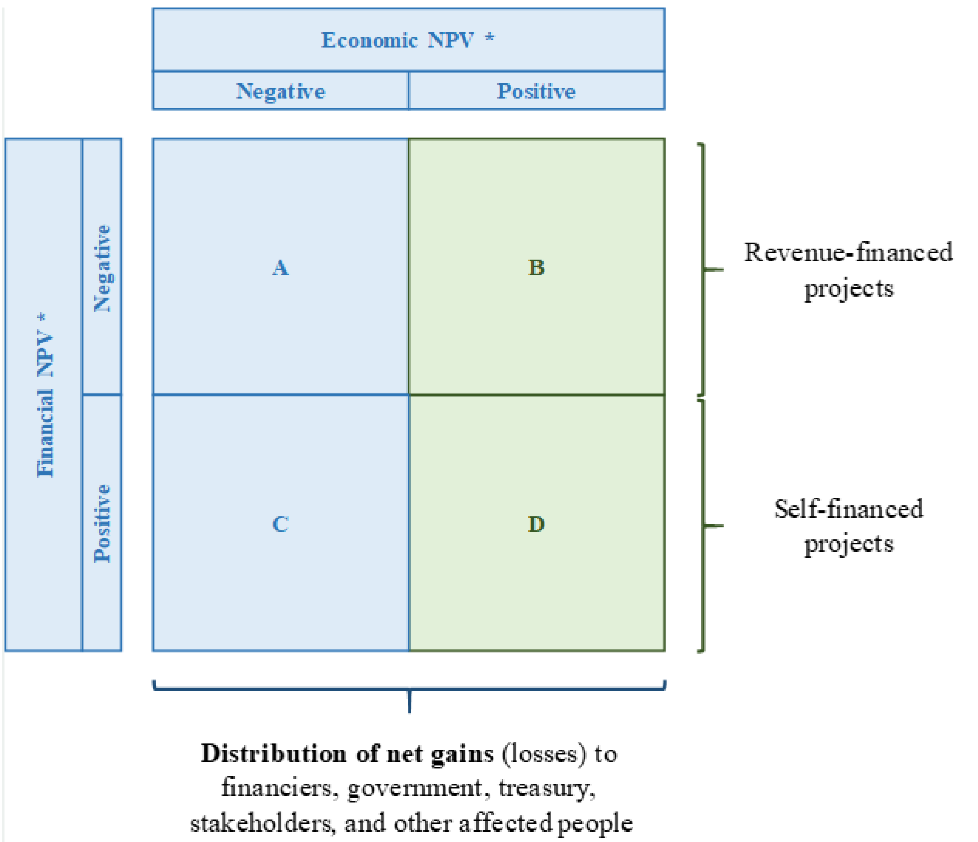
>>> MATRIX 4: PROJECT VIABILITY

Finally, the project viability matrix (matrix 4) is a helpful tool to think about financial and economic decisions on specific public investments by SOEs. The matrix used in integrated appraisal or cost-benefit analysis (CBA) reveals some challenges regarding SOE investment projects. The three CBA perspectives of a project (financial, economic, and distributional) are captured in figure 6. The matrix shows that a project can be financially viable or not (if the financial net present value is positive or negative, respectively) and economically attractive or not (if the economic net present value is positive or negative, respectively). Integrated project appraisal can handle the cases of financially viable commercial or for-profit SOEs and of not-for-profit government entities that largely depend on allocations from the government budget to cover the costs of operations and maintenance.

In self-financing SOEs, investments can be commercially oriented but ignore external costs and benefits arising from the project operations. For-profit SOEs involved in market production of private goods (in competition with other private suppliers or through price-regulated natural monopolies) can be financially viable but economically unattractive (quadrant C) when all externalities are included in the economic appraisal. When an SOE is self-financed through its product revenues, it can operate based solely on its financial performance and ignore the externalities arising from its operations. In those instances, the SOE may pursue a project that is not aligned with the government's public policy objectives. This potential misalignment raises fundamental questions regarding PIM functions and institutional arrangements for SOEs. Is economic appraisal undertaken and used in project design and selection? If so, who conducts the appraisal and how, who reviews the appraisal methods, and who sanctions project

>>>

FIGURE 6 - Matrix 4: Classification of Projects According to Their Financial and Economic Viability



Source: Authors.

*Note: * NPV = net present value.*

Projects undertaken by quasi-independent government entities established as corporations are often financially unviable but economically desirable. Quasi-independent entities may serve important public policy and administration functions, but their projects may not be self-financing (revenue-financed) and typically fall in quadrants A and B on the viability matrix (figure 6). In countries with poor governance, these entities can be established as a vehicle to channel budget resources to private actors. In these cases, projects should generate net economic gains, but the government will have to support the quasi-independent entity to guarantee the financing of both capital and future recurrent expenditures. One would want project investments by these entities to lie in quadrant B. The government may have integrated project appraisal systems in place for its ministries, departments, and agencies, but these systems may not apply to some semiautonomous corporate entities established with some degree of expenditure discretion. Special mechanisms for ensuring good project preparation may be needed for the quasi-independent entities in those instances.

>> CONCLUSION

The suite of matrices developed in this DF was created to facilitate country-specific PIM assessments of countries' SOEs. The framework will support governments in their attempts to understand the extent to which they should intervene in SOE investments and bring them under the national PIM architecture. Putting SOEs of a country through our assessment matrices will help the assessor identify significant gaps between the country-specific SOE PIM and the desirable functions and procedures in a well-functioning system. By reviewing the matrices, policymakers can gain insights into their existing SOE PIM's strengths and weaknesses and use them as an underpinning to the design of the appropriate reform actions.

The user should not apply the DF in a mechanical, isolated manner. Its application needs to be grounded in a good understanding of the country's underlying political economy and the institutional incentives of all stakeholders involved in SOE PIM. It is worth further highlighting that the DF does not address the SOE transparency and governance issues in explicit detail, recognizing that such aspects are already treated in the existing literature, which is summarized in appendix B (see OECD 2015; World Bank 2014, 2019).[14]

Further research may focus on developing the DF into a more comprehensive assessment framework in two dimensions as follows. First, the DF could be elaborated with granular diagnostic questions under each essential PIM function from the institutional arrangements (presented in the matrices) and the rationales (discussed more specifically in appendix D). Second, detailed standards may be developed as benchmarks underlying the possible ratings of each indicator proposed in our DF. Ratings could feature numeric scoring ranges or could be categorized as "basic," "good," or "advanced." The rating would facilitate comparison of SOEs within and across countries.

In preparing this DF, we highlight two major existing weaknesses that hinder the development of fully fledged SOE PIM benchmarks, especially in the context of developing and emerging economies.

- Poor availability of global data on SOEs. As discussed in section 2.1., the information on the numbers, sizes, sectors, and types of SOEs outside the OECD countries is sketchy or even nonexistent. Similarly, the IMF has obtained consolidated public sector balance sheet data, primarily only for advanced economies and a few emerging and developing economies. Whereas considerable SOE information exists at the country level, the effort to consolidate these data in a broader public sector database at the global level has not yet been made. Such an internationally comparable database would be key to identifying countries in need of general SOE reform and PIM system reform in the public sector.
- Lack of comparative analysis of legislative frameworks for SOE PIM. A vital element of a sound PIM system is its legislative underpinnings. Many countries have undertaken public financial management (PFM) reforms, revising their related PFM legislation, but there does not appear to be any comparative cross-country analysis of PFM-type legislation for PIM in general, let alone on SOE PIM. Of interest here is the entire set of laws and regulations governing national and SOE PIM. The lack of cross-country studies poses a significant challenge to recognize best practices for legislative reforms on PIM and SOE PIM.

14. The prominent issues relate to the shares of government ownership, dividend policy, or chief executive officer appointments at SOEs that may have discernable implications for PIM decisions.

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>> APPENDIX A: ESSENTIAL PIM FUNCTIONS

This appendix describes the eight essential or core functions that should exist in all PIM systems for traditional government-owned, government-operated projects funded from general revenues (Rajaram et al. 2010, 2014). These eight functions should apply when governments consider making SOE investments through their PIM systems. They are broken down between project preparation and project implementation functions.

>>> PROJECT PREPARATION FUNCTIONS

1. **Project identification, guidance, and screening.** The projects identified should be consistent with a government's strategic national and sector priorities and plans and the expected resource envelope of the sector and overall government. Sector priorities should be consistent with supply gaps in sector services and the results of ex ante project appraisals and ex post evaluations. Project documents should be screened for alignment with sector priorities before detailed design and appraisal is undertaken.
2. **Formal project appraisal.** The formal conduct of cost-benefit or cost-effectiveness analysis of a project or program produces feasibility studies as the basis for project approval, budget selection, and implementation. For new, large, and complex projects, both prefeasibility and feasibility studies, which include financial, economic, risk, and distributional analysis, would be conducted. The level of effort in the conduct of the appraisal would be proportional to the size, complexity, and risks involved in a project. Appraised projects go through one or more approval steps and selection criteria depending on the project's type and size.
3. **Independent review.** An independent technical peer review process is used to assure the appropriateness of appraisal assumptions and methods and to avoid biases in estimates.
4. **Project selection and budgeting.** Central ministries and government executives select projects from the pipeline of approved projects in line with sector priorities and consistent with available general revenues, loan financing, and project grants for capital expenditures and in line with expectations of future recurrent revenues available to sustain added operating and maintenance expenses. Selected projects need to be subjected to legislative scrutiny in the process of authorization of the projects and the appropriation of funds. In addition, the scrutiny, approval, and budgeting for the contingent liabilities arising from loan guarantees to SOEs and PPPs and other financial failures by SOEs must be institutionalized.

>>> PROJECT IMPLEMENTATION FUNCTIONS

5. **Project implementation.** This function involves the procurement of design, building, and operating services to implement the project as well as the management of the implementation process itself, and it includes the control of expenditure commitments, the release of funds, and the monitoring of implementation against cost and timing milestones that arise from the project design and implementation plan. Upon completion, the project needs to be tested, reviewed, and handed over to operators. Newly created assets are registered.
6. **Adjustment.** During the precompletion period, formal arrangements are required to make technical and financial adjustments to a project based on significant changes in the project's timing or economic environment. Where the required project adjustments are large, the revised project may need reevaluation, approval, and budgeting.
7. **Service delivery/facility operation.** Once the project is operational, it delivers services supported by recurrent funding that are subject to performance monitoring. Project service delivery can be subjected to impact analysis relative to the expected baseline of services otherwise provided.
8. **Ex post program or project evaluation.** An independent external reviewer evaluates the project while still operating or as part of a decision to continue, terminate or restructure the project. Annual external audits would be conducted of financial operations and possibly also of service delivery performance and presented to the legislature for scrutiny.

>> APPENDIX B: SOE CORPORATE GOVERNANCE REFORMS

The tool kit (World Bank 2014) presents a valuable set of best practices and possible SOE corporate governance reforms, namely:

1. **Establishing a sound legal and regulatory framework for corporate governance by**
   - Bringing SOEs under company law and applying other laws and regulations to SOEs to create a level playing field;
   - Listing them on the stock markets to create capital market discipline and developing modern SOE laws and regulations; and
   - Uniting SOEs under a national code of corporate governance or creating a specific SOE code to codify good practices.
2. **Creating proper ownership arrangements for effective state oversight and enhanced accountability by**
   - Identifying and separating the state's ownership functions from its policy-making and regulatory functions;
   - Developing appropriate arrangements for carrying out ownership functions;
   - Creating safeguards against government interventions; and
   - Centralizing the state's ownership functions to bring focus, consistency, and good practices to the SOE sector.
3. **Developing a sound performance-monitoring system by**
   - Defining SOE mandates, strategies, and objectives;
   - Developing key performance indicators and targets, both financial and nonfinancial;
   - Establishing performance agreements between SOE owners and SOE boards; and
   - Measuring and evaluating performance to hold SOEs accountable for results and ensure good performance.
4. **Promoting financial and fiscal discipline by**
   - Reducing preferential access to direct and indirect public financing;
   - Identifying, computing, and financing the true cost of public service obligations; and
   - Monitoring and managing the fiscal burden and potential fiscal risk of SOEs.
5. **Professionalizing SOE boards by**
   - Developing a structured and transparent process for board nominations;
   - Defining the state's respective roles as the owner of boards so as to effectively manage and empower such boards to carry out core responsibilities such as strategy setting, choosing and overseeing the chief executive officer, and managing risks;
   - Enhancing board professionalism through the separation of chair and chief executive officer, development of board committees, and the like;
   - Putting in place board remuneration and evaluation policies and practices; and
   - Providing training to the members of boards of directors.
6. **Enhancing transparency and disclosure by**
   - Applying private sector principles and international standards to SOEs;
   - Improving SOE reporting and disclosure;
   - Strengthening the control environment; and
   - Carrying out independent external audits.
7. **Protecting shareholder rights in mixed-ownership companies by**
   - Overseeing minority government stakes;
   - Promoting shareholder participation and the equitable treatment of shareholders;
   - Encouraging participation in shareholder meetings;
   - Ensuring the representation of minority shareholders on SOE boards; and
   - Protecting against abusive related-party transactions.

>> APPENDIX C: GOVERNMENT FISCAL RISK MATRIX FROM SOE FINANCIAL OPERATIONS

Fiscal risks that a government faces with ownership of an SOE that is off-balance-sheet are summarized in the fiscal risk matrix, table 4. The matrix identifies the government's fiscal risks from the SOE financial operations as added assets or liabilities on the government's balance sheet. The table breaks these into direct or contingent risks (where they depend upon a particular event occurring such as an unplanned loan default) and explicit (expected, planned, or contracted) or implicit. Changes in assets or obligations include, for example, the following: expected dividends paid to government, expected capital gains in the SOE valuation, expected net tax revenues (including the impact of any tax expenditures) that the SOE's operations generate, on-lent loans reduced by loan repayments, support for required public policy activities and forgone revenues from pension payments, social security contributions, and tax obligations in arrears. Under the contingent changes in assets and liabilities are the positive and negative changes in dividends, capital gains, and net tax revenues reduced by defaults on on-lent loan repayments or guaranteed loans; arrears on payments to suppliers, contractors, and employees; defaults on government-guaranteed power-purchasing agreements (PPAs); and potentially, SOE bailouts and compensation for major negative externalities affecting local communities. These fiscal risks would also be identified and captured in consolidated accounts of the government and its SOEs.

> > >

TABLE 4 - Matrix 5: Government Fiscal Risks from SOE Financial Operations

Assets and Liabilities	Direct (Change in Asset or Obligation in Any Event)	Contingent (Change in Asset or Obligation if a Particular Event Occurs)
EXPLICIT	**Ownership** ΔA Expected royalties ΔA Expected dividents ΔA Expected capital gains on SOE value, accrued or realized **Legal or Contractual** ΔA On-lent loan disbursement ΔA Expected net tax revenues ΔL On-lent loan repayment ΔL Compensation paid or foregone taxes or interest receipts for required social or policy activities by SOE ΔL Arrears in funding pensions and paying social security contributions and/or tax obligations	**Ownership** ΔA or ΔL Variance in dividends ΔA or ΔL Variance in royalties ΔA or ΔL Variance in capital gains on SOE value, accrued or realized **Legal or Contractual** ΔA or ΔL Variance in net tax revenues ΔL Partial or full default on loan repayment ΔL Partial or full default on guaranteed loan repayment ΔL Arrears or default in payument of suppliers, contractors, and/or employees ΔL Default on a government-guaranteed purchasing power agreement (PPA)
IMPLICIT	Obligation that the government is not legally obliged ΔL Arrears in funding pensions and paying social security contributions in case of SOE bankruptcy	Depend on occurance of a particular future event and on the ΔL Major project cost overrun or persistent and growing operating cost increases and revenue under-performance or collections leading to effective bankruptcy ΔL Major pollution spill or plant explosion causing major losses in neighboring communities

Source: Adapted from table 1, "Fiscal Risk Matrix," in World Bank 2019.

Note: ΔA = change in assets; ΔL = change in liabilities; PPA = power purchasing agreement; SOE = state-owned enterprise.

>> APPENDIX D: RATIONALES FOR MATRIX 3 INDICATORS BY FUNCTION

This appendix discusses the rationale behind the desirable institutional arrangements and indicators for PIM in SOEs by the function presented in matrix 3 (table 3). The proposed institutional arrangements seek to strengthen the links and coordination between the national PIM system and PIM arrangements for SOEs and quasi-independent public entities.

>>> STRATEGIC GUIDANCE AND PRELIMINARY SCREENING

>>> SECTOR PLANNING COORDINATION

The public sector performs well when the government and public corporations work together to deliver public services effectively and efficiently. This collaboration requires that the government's national and sector plans incorporate strategic planning information from SOEs. This is particularly important for price-regulated corporations or entities that receive significant budget support or targeted tax expenditures from the central government. When SOEs operate in competitive, market-driven industrial sectors, sector performance is more a function of the private entities operating in the sector. In those cases, sector planning with the central government is less pressing, but if SOEs dominate domestic production in a sector, their investment projects should be reflected in government sector plans. This approach to sector planning should help the government guide investment projects being screened for project design and appraisal before any decisions are made on financing and implementation.

INDICATOR
Definition: Government strategic sector plans include SOE-planned investments, outputs, and outcomes. **Measurement:** This indicator's ratings should assess the quality and comprehensiveness of planned investments, outputs, and outcomes included in strategic plans.

>>> ENTITY PERFORMANCE TARGETS FOR PUBLIC POLICY ACTIVITIES

When SOEs and other government entities receive direct budget support (including explicit loan guarantees) or targeted tax expenditures to undertake public policy activities (including producing services with large positive economic externalities), precise performance targets must be established to ensure that budgets can be monitored and evaluated against efficiency and effectiveness criteria. These targets can be established through performance contracts with the entity or through explicit budget performance targets that require reporting by the entity and in turn by the government. Clear SOE performance targets help integrate SOE budget and performance data into the general government budget management system, which informs strategic planning of investment at the central government level.

INDICATOR
Definition: Documented performance contracts or explicit performance targets for SOEs or other public entities receiving government support to undertake specific public policy activities. **Measurement:** This indicator's ratings should assess the quality and comprehensiveness of performance contracts and targets and the reporting of performance across SOEs and other public entities.

>>> FORMAL PROJECT APPRAISAL

>>> PROJECT APPRAISAL CAPACITY

SOEs and quasi-independent corporate entities should conduct project appraisals according to a project appraisal manual. The manual should present differentiated methodologies for project appraisal commensurate with the scale, technological or financial complexity, and criticality to national security. The manual should detail the methods for applying integrated appraisal (CBA) to economic, financial, risk, and distributional analyses. The type and degree of research required should be specified in a PIM manual. The entities should have sufficient human and organizational capacity and operational funding to sustain their ability to conduct project appraisal.

INDICATOR
Definition: An integrated investment project appraisal manual is in use, as are training arrangements and funding for sustaining capacity in all public entities. **Measurement:** Ratings of this indicator should reflect whether there is a manual in use and the extent to which its content, professional staffing, training, and financial support are adequate.

>>> PIM MANUAL DIRECTING APPRAISAL REQUIREMENTS

Instructions on how to conduct PIM functions should be included in the PIM manual or equivalent guidelines. The manual should be sanctioned by broader PFM or PIM legislation and regulations. The PIM manual should lay out procedures for screening and appraising projects on the basis of size, complexity, and prior experience with similar projects. The procedures should indicate whether fully integrated project appraisal is required or whether more limited analysis and criteria can be used. The manual should mandate its application to SOEs and other government entities, and it may also include some exceptions regarding appraisal requirements for commercial SOEs operating in highly competitive markets.

INDICATOR
Definition: A PIM manual specifies appraisal procedures to apply integrated appraisal to SOEs and other government entities. **Measurement:** This indicator's ratings should assess whether the PIM manual's coverage is comprehensive and whether it includes all public entities. It should also evaluate the clarity of methodologies and criteria required to screen and appraise SOEs and the projects of other government entities.

>>> PUBLIC SECTOR DEBT AND FISCAL RISK MANAGEMENT CAPACITY

SOE accounts fall outside of general government accounts, yet they pose financial and fiscal risks for the government as a majority SOE owner. These risks derive from on-lending operations and explicit and implicit loan guarantees provided to these entities. Governments often establish specialized units to budget for and manage loan guarantees to SOEs, PPPs, and other entities when the size of contingent liabilities is significant. Governments are increasingly preparing consolidated public sector accounts (including both flows and stocks) to capture and manage the fiscal risks of SOEs.

INDICATOR
Definition: (a) A dedicated debt unit manages government on-lending, loans, and other guarantees to the broader public sector by assessing fiscal risks posed by SOEs and other government entities to the fiscal and debt sustainability of the public sector; (b) full and consolidated public sector accounts are prepared and published. **Measurement:** Ratings of these indicators should capture whether there is a dedicated unit and how effective it is in managing on-lending and guarantees through fiscal risk assessments. It should also assess the extent to which public sector accounts are published and their coverage.

>>> INDEPENDANT REVIEW OF APPRAISAL

>>> INSTITUTIONALIZATION OF INDEPENDANT REVIEW OF PROJECT APPRAISAL

Committees with a clear definition of roles and responsibilities to undertake independent review of project appraisal is critically important to ensuring the objectivity of the appraisal prepared by SOEs and endorsed by their line ministries. A central financial and planning agency could assume this function and create or designate a specialized technical agency to conduct the review.

The public sector's oversight capacity to appraise projects depends on functioning central financial bodies or the designated interministerial committees (finance, planning, and sector ministries). The overarching PIM legislation and regulation should determine the criteria for such selection to ensure uniformity and transparency in the selection of the project proposals for the independent review.

These committees should undertake joint technical reviews of project feasibility studies and consider whether external technical reviews are needed for large and complex projects. Technical reviews on the screening and appraisal of projects from public agencies should be conducted at a minimum by its parent ministry. These technical reviews should be conducted by central agencies and assessed by an interministerial committee for large and complex projects.

INDICATOR
Definition: The number and share of feasibility studies of large or complex projects by SOEs in regulated sectors or with significant government support subjected to review by interministerial technical committees; number and percentage of feasibility studies under independent review that have been rejected, deferred, or recommended for revision in the past three years. **Measurement:** This indicator's ratings would depend on the coverage, comprehensiveness, and depth of the technical reviews conducted.

>>> EXTERNAL PROJECT APPRAISAL REVIEW CAPACITY AND PRACTICE

An independent body should review large and complex projects (bodies established in a university or a research institute, for instance), looking at investment project assumptions, methodologies, biases, and appraisal quality. These reviews should be commissioned and led by the central financial and planning ministry (ministry of finance or central planning agency). This review and screening may take place at the prefeasibility or feasibility stages. Independent reviews will be made easier if the government's project appraisal manual prescribes a specific structure and formats for appraisal through automated spreadsheets.

INDICATOR
Definition: Number and share of feasibility or prefeasibility studies of large or complex projects by SOEs in regulated sectors or receiving significant government support subject to external technical review. **Measurement:** Ratings of this indicator should gauge the independence and technical capacity of the review institution, the coverage and quality of the reviews conducted, and the impact of the reviews on the screening of projects.

>>> PROJECT BUDGETING AND SELECTION

>>> PIM GUIDELINES FOR PROJECT APPROVAL AND BUDGETING CHANNELS

SOE and other government entity projects require budgetary approvals by their board of directors. Some projects may require a regulatory body's approval beyond government approval, especially where the project has direct or contingent effects on the government budget. These projects would typically include large investments with significant externalities, government support, or public policy functions. The PIM manual and budget processes should make clear where government approval is required in addition to board approval.

INDICATOR
Definition: (a) The government has an approval process in place for SOE investments with significant externalities, government support, or public policy functions; (b) the government budgets for contingent liabilities, explicit or implicit. **Measurement:** Ratings of this indicator would consider whether approval processes are in place and the extent to which they are used and effective. The ratings should also assess if the budgeting of contingent liabilities is accurate and comprehensive.

>>> UNBIASED COMPETITION IN SELECTION FOR THE SUPPLY OF REGULATED PRODUCTS

An independent body should review large and complex projects (bodies established in a university or a research institute, for instance), looking at investment project assumptions, methodologies, biases, and appraisal quality. These reviews should be commissioned and led by the central financial and planning ministry (ministry of finance or central planning agency). This review and screening may take place at the prefeasibility or feasibility stages. Independent reviews will be made easier if the government's project appraisal manual prescribes a specific structure and formats for appraisal through automated spreadsheets.

INDICATOR
Definition: Transparent procedures are used to select providers of regulated products or services. **Measurement:** This indicator's ratings would consider selection processes conducted by the regulatory or other agency in transparency, competitive bidding, and efficient procurements.

>>> TRANSPARENCY OF SOE AND OTHER GOVERNMENT ENTITY INVESTMENT PLANS

To ensure full transparency, SOE and other government entity investment plans and financial statements should be available to parent ministries, relevant legislative committees, and the general public (unless there are national security concerns from disclosing this information). Investment plans and financial statements should be posted on the website of the entity and its parent ministry.

INDICATOR
Definition: Digital publication on internet websites of the SOEs and other government entities and the parent ministry of all investment plans and financial statements (subject to redaction for national security reasons). **Measurement:** This indicator's rating should assess the frequency of publication of the investment plans and financial statements of SOEs and other entities, their comprehensiveness, and ease of access to such documents.

>>> PROJECT IMPLEMENTATION

>>> TRANSPARENCY AND COMPETITIVENESS OF PROJECT PROCUREMENT

Like the government, SOEs and other government entities should follow transparent and competitive e-procurement rules and procedures. These procedures should be specified in the legal framework governing enterprise operations (the company act or SOE act) and consistent with its PFM and procurement legislation. Weak procurement capacity and corrupt practices can undermine the cost-effectiveness and productivity of SOE projects and operations. The government should ensure that it is unbiased in its procurement of products or construction services where SOEs compete with private companies for government contracts.

INDICATOR
Definition: Transparent and competitive e-procurement rules and procedures both by SOEs and government procuring services from SOEs competing with private companies. **Measurement:** This indicator's ratings should assess the quality of government and SOE procurement systems in terms of transparency, competitive bidding, and efficiency.

>>> PROJECT IMPLEMENTATION MONITORING AND REPORTING GUIDELINES AND PRACTICE

SOEs and other government entities should have in place (a) clear project implementation management procedures, (b) monitoring and reporting procedures regarding physical and financial milestones, (c) requirements for completion review and reporting, and (d) procedures for asset registration and management.

INDICATOR
Definition: Progress reports are produced regularly (at least quarterly), and together with a project completion report, they are made available to the board, parent ministry, or regulatory agency on all projects that require government approval. Newly created assets are registered. **Measurement:** Ratings of the indicator should assess the reports' frequency and quality and their availability to intended recipients.

>>> PROJECT ADJUSTMENT

>>> AUTHORITY TO MANAGE AND APPROVE PROJECT ADJUSTMENTS

Major projects with long construction periods may experience changes in economic parameters or face unexpected implementation challenges that require adjustments to contractual arrangements. Project adjustments could have implications for government support or present fiscal risks. The construction agreement may prescribe some adjustments, but others may demand contractual changes. The latter requires transparent allocation of authority and clear procedures for the government or a regulator to review and approve any major adjustments, including funding. This allocation of power is particularly relevant if the project required government or regulatory approval in the first place.

INDICATOR
Definition: Explicit allocations of authority are documented, and there are procedures in place to manage project adjustments. **Measurement:** Ratings of this indicator should consider the comprehensiveness and quality of the documented procedures concerning the coverage of a wide range of project and SOE types.

>>> BUDGET REALLOCATION PROCEDURES AND PRACTICE

Adjustments to SOE and other government entity projects can impact the government budget requiring virements or supplemental budgets. There should be clear procedures in place to handle these reallocations originating from SOEs.

INDICATOR
Definition: There are documented procedures for budget reallocations and evidence of past budget reallocations in response to project adjustments. **Measurement:** Ratings of this indicator should consider the availability of prescribed procedures and the capacity of authorities to implement budget adjustments.

>>> SERVICE DELIVERY/FACILITY OPERATION

>>> SERVICE DELIVERY, OPERATIONS, AND MAINTENANCE REPORTING REQUIREMENTS AND PRACTICE

Following project construction and project handover for operation of the facility, the government should be able to monitor its activities to ensure that services are delivered effectively, track costs, and provide additional budget support as required. There should be clear procedures for SOEs to hand over complete projects for subsequent operation and maintenance.

In cases where the SOEs are to continue operating the assets just constructed, they or other government entities should prepare and share regular reports (at least quarterly) with the government or regulatory authority on service delivery, operation and maintenance costs, and the receipt of budget support (where applicable). This information sharing is particularly relevant for projects that require initial approval by the government or regulatory authority.

INDICATOR
Definition: Regular reports of service delivery, operation and maintenance costs, and budget support (where applicable) by projects requiring initial approval by government or regulatory authority are produced and shared. **Measurement:** This indicator's ratings should consider the frequency and quality of reports on service delivery, operation and maintenance costs, and receipt of budget support, and the regular provision of these reports to the relevant government and regulatory agencies.

>>> PROJECT EVALUATION

>>> IMPACT EVALUATION REPORTING AND PRACTICE

Impact evaluations should be conducted to evaluate the effectiveness and efficiency of SOE services and outputs. When the entity performs significant public policy activity, the entity or the government should conduct an impact evaluation of service delivery.

INDICATOR
Definition: Impact evaluation reports produced and made available by SOEs, mainly when the entity provides major public policy services. **Measurement:** Ratings of this indicator should consider the coverage, frequency, and quality of impact evaluation studies.

>>> AUDIT COMMITTEE RULES

Through audit committees, the legislature plays an important oversight role on public investments. There should be timely submission and appropriate publication of external audit reports of SOEs and other government entities to the government and legislature audit committee. The legislature (or its audit committee) should scrutinize audit reports effectively and ensure that their recommendations are acted upon by the SOEs and other entities on time.

INDICATOR
Definition: SOEs receive recommendations from audit reports by the legislature or its audit committee and act on them in a responsive and timely manner. **Measurement:** This indicator's ratings should assess whether the legislature or the audit committee receives and considers comprehensive reports promptly. It should also capture how quickly and effectively SOEs and other entities act upon recommendations.

>>> EX POST PROJECT EVALUATION REQUIREMENTS AND PRACTICE

To assist with strategic and operational planning of future projects, the government should conduct or commission ex post evaluations of projects. For large and complex projects requiring government approval, ex post evaluations should be performed 10 to 15 years from the project's start. These reports should be available to the entities, sector and central ministries, the legislature, and the public.

INDICATOR
Definition: Ex post project evaluation reports are produced and made available for large-scale and complex projects. **Measurement:** Ratings of this indicator should take into account the coverage and quality of ex post evaluations and the availability of these reports to critical institutions and the public.

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