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Implicit Subsidies for Infrastructure and Their Implications for Contingent Liabilities in Selected East Asian Countries

Astrid DITA
PROSPERA

Sandy MAULANA
Hitotsubashi University

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Abstract: *A government's investment decision for infrastructure development is a form of budget commitment which results in direct liabilities and possible contingent liabilities. The latter is often overlooked when the project preparation is weak where potential risks are insufficiently identified and mitigated and its impact on budget sustainability may worsen in the absence of sound surveillance. Infrastructure projects may thus lead to unmitigated fiscal risk without proper investment decision-making and monitoring framework particularly in the presence of less-than-mature fiscal systems and low public investment management capacity (e.g. as demonstrated by the inability to develop sound project business cases or distinguish project financing from funding issues).*

Keywords: infrastructure development, direct liabilities, contingent liabilities, East Asia

JEL Code: H54, H81, O18

1. Introduction

Context

Infrastructure spending as a growth generation strategy has been a traditional recipe prescribed by international financial institutions (IFIs), particularly for developing countries, where a lack of infrastructure is typically the main physical constraint for economic activities to take place and accelerate. The nature of spending on infrastructure projects is different from other types of government spending. Namely, the projects (1) are fixed assets with large-scale investment; (2) have lumpy spending rather than incremental spending; and (3) are mostly tangible and space-specific. Due to these attributes, the infrastructure sector has monopolistic tendencies and is often ridden with regulatory governance and substance issues, as the government has to determine what infrastructure service to provide (sectoral decision), to whom (spatial decision), at what level (investment decision), and with what delivery mode (procurement decision) in order to maximise societal welfare.

A government's investment decisions for infrastructure development are a form of budget commitment that consequentially results in direct liabilities and probable contingent liabilities. The prior is typically straightforward to administer and manage, except in cases where there is an element of uncertainty, i.e. projects that are budgeted in different currencies, such as international aid-funded projects. On the other hand, the latter is often overlooked in the case of weak project preparation, where potential risks are insufficiently identified and mitigated, and the impact on budget sustainability may worsen in the absence of a sound fiscal monitoring framework.

In traditional procurement, the government's scope for designing and building may somewhat grant the public sector party full control on delivery. As such, the main issue to address is the procurement of a competent vendor. However, at the same time, the public sector party is also exposed and has final accountability for all risks. This, along with the fact that public sector capital is constrained, was the motivation for non-traditional procurement methods – for which the concept and implementation may differ amongst countries, and thus countries may have

different governance challenges and propensities for triggering the contingent liabilities.

Public–private partnerships (PPP) are located in the advanced spectrum of non-traditional infrastructure procurement. However, most countries follow a certain pathway of maturity to be able to adopt and implement the PPP concept. In many emerging economies, including those in East Asia, the government may involve state-owned enterprises (SOEs) in the decision-making process to invest in infrastructure. The SOEs may be involved as early as the project planning stage, and should the project not be directly appointed to them, procurements are often not competitively neutral. One of the unfair advantages of SOEs compared to private sector entities is their ability to access 'implicit subsidies', given the political preference for these quasi-public entities. These subsidies may be provided, for example, in the form of lower returns of and on capital, blanket guarantees, or other facilities that would otherwise be inaccessible to private sector entities and are provided off the government balance sheet. The implicit subsidies are a form of contingent liabilities for the government.

Motivation

There have been a number of studies on infrastructure contingent liabilities and implicit subsidies, but the discussion has been rather scattered on these aspects. This paper aims to define and map the structure of contingent liabilities and implicit subsidies that occur due to commitments to infrastructure projects. The authors wish to trigger academic discussion on this, particularly for the improvement of the fiscal framework in emerging economies in East Asia.

Organisation of the Paper

Given the extensive aspects and different cases surrounding contingent liabilities and implicit subsidies, this paper will focus on the conceptual discussion of both topics in lieu of recommendations. Section 2 will first discuss the concept of infrastructure and of infrastructure financing – where it is often confused with funding. Section 3 will touch specifically on the definition of 'implicit subsidies' and how they may trigger 'contingent liabilities'. We will discuss several case

studies in East Asia in Section 4, before providing the concluding remarks in Section 5.

Geographically, the authors will cover the select countries as discussed in the case studies section: Indonesia, Viet Nam, and the Philippines. Some discussions beyond these countries will be made at the macro level.

2. The Paradox of Infrastructure Financing

This section will discuss the basic concepts of infrastructure (i.e. the definition of infrastructure, the infrastructure project cycle, and delivery schemes), before discussing the fundamental differences in the concepts of financing and funding, and the paradox of infrastructure financing.

Infrastructure Definition, Project Cycle, and Schemes

Definition of Infrastructure

'Infrastructure' is generally used to label particular capital projects involving large-scale investment that will result in the creation of long-term assets upon which basic services will be provided to enable economic activities to take place. It also typically pertains to public and quasi-public goods (i.e. it is likely to involve externalities whereby the benefits will be enjoyed by the wider society). This departs from ordinary capital projects, such as the development of factory facilities, whose benefits are exclusively captured by private entities.

There is not a single standardised definition of 'infrastructure' today. Thus, understanding on what counts as infrastructure may vary.

For example, the Asian Development Bank (ADB) (2017) describes infrastructure investment as fixed asset investments in four sectors: transport (road, rail, air, and ports); energy; telecommunications; and water and sanitation (dams, irrigation, and flood control waterworks). These assets include civil engineering works, non-residential buildings, and the machinery and equipment necessary to provide infrastructure output. Social infrastructure, defence, and other social services are excluded (ADB, 2017).

Rémy Prud'homme (2005) stressed that infrastructure has several characteristics: (i) capital goods; (ii) lumpy rather than incremental expenditure; (iii) long-lasting; (iv) space-specific; (v) associated with market failures/public intervention; and (vi) consumed by household and enterprises. Social infrastructure – such as schools and hospitals – is different since it does not necessarily share all the above characteristics.

For the purpose of this paper, we adopt the following definitions:

1. **Economic infrastructure**

   Economic infrastructure is characterised by a large physical asset size functioning in a network that delivers basic services to facilitate economic activities. There is not yet a standardised definition of the hard infrastructure scope. The common scope by sectoral categories are transport (e.g. roads, railways, ports, airports), water and sanitation (e.g. dams, irrigation, water, and drainage), information and communications technology (e.g. telecommunications), and power (e.g. electricity and gas).

2. **Social infrastructure**

   Social infrastructure is infrastructure characterised by a human-centric service provision utilising modular physical assets, for example health and education facilities. It is not to be confused with soft infrastructure, since soft infrastructure is characterised by intangible components. Examples include societal institutions, which serve as the building blocks of financial and legal systems.

Infrastructure Project Cycle

Infrastructure follows a certain project cycle of: (i) origination (planning and preparation); (ii) construction/delivery; (iii) operation and management; and (iv) disposal/asset recycling (see Figure 1). Different actors are involved throughout each project stage with different interests. Project origination is most likely tackled by the public sector entity authorised to plan and prepare the project with the interest of maximising welfare. Thus, theoretically, it would prioritise projects that return the greatest economic benefits instead of private/financial benefits. Ideally, project planning tries to answer a well-defined issue and may follow a certain roadmap or

masterplan, such that it will be coherently placed with other projects within a programme to achieve a well-defined ultimate outcome. In the preparation stage, the project's viability is assessed on its economic, financial, technical, and environmental and social aspects. The preparation shall also include an analysis of the options to address the prevailing constraints. Ideally, preparation will include cross-party coordination and evaluation, where the procurement and/or delivery mechanism will then be decided based on the best value for money criteria.

Infrastructure project constructions are typically procured by a designated contracting agency and delivered by vendors or contractor who obtain construction contracts through tendering processes and may absorb the construction risk in return for risk-adjusted payments. In the case of non-traditional procurement, other risks, such as design risk, may also be shifted to the contractor(s). It is typical that the construction period will be defined in the procurement requirement to set the right incentive for the vendors or contractors to finish construction on time. However, unforeseen or unmitigated risks may create delays in construction, such as site risk, land acquisition risk, and social risk. There may be also cases where projects of a certain size are split into several packages or segments, raising certain risks of interfacing.

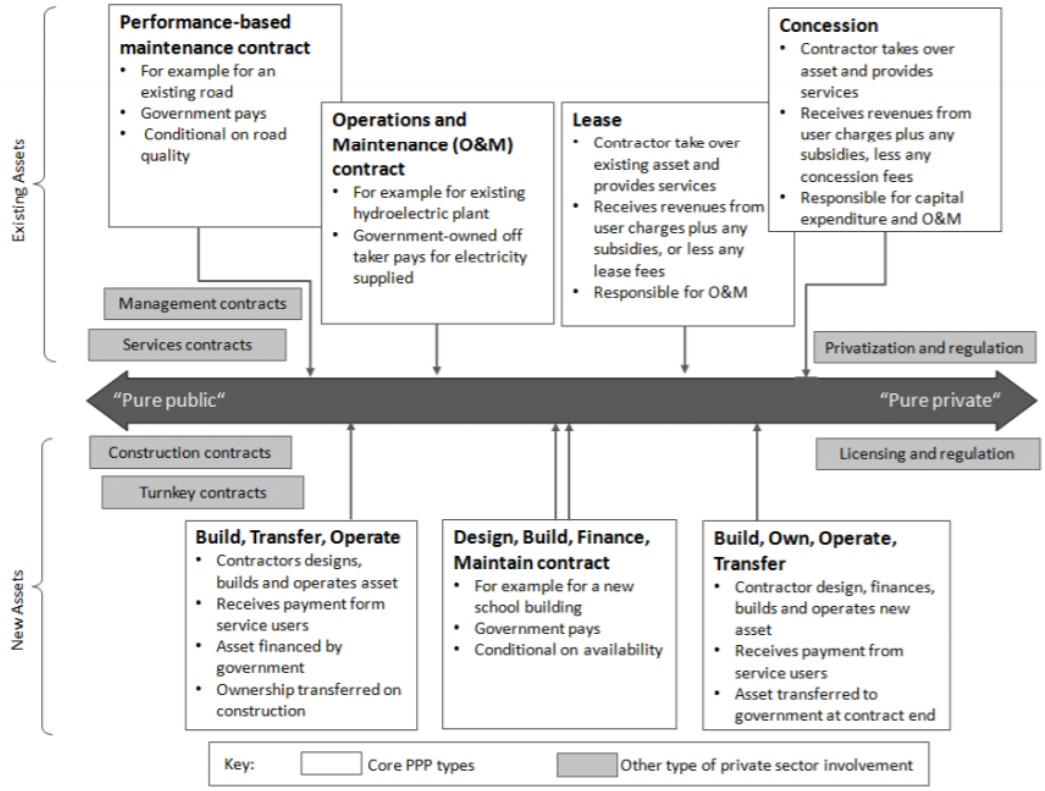
The resulting infrastructure assets from the construction activities may or may not be operated and managed by the authorising public sector entity – with the latter option involving either government-linked or entirely private companies who will operate and manage under certain contracting schemes. In the first several years, the project will be in the greenfield stage, recovering revenue to service its debt, before maturing to the brownfield stage, where it generates profits for its shareholders. Typical risks during this stage include the risk of currency mismatch between the project revenue and liabilities, particularly senior debt liabilities. At the end of the cycle, infrastructure assets may be either disposed of or recycled (i.e. finding new sponsors to prolong its operation phase).

Figure 1. Infrastructure Project Cycle

Infrastructure Delivery Schemes

Infrastructure delivery may be carried out through different contracting mechanisms and utilise different sources of financing, as illustrated in Figure 2. Non-traditional contracting and financing schemes are recently gaining more popularity to facilitate private investments in infrastructure, i.e. private investors seeking better risk-adjusted returns outside of mature economies and the campaigning of international financial institutions (IFIs) for emerging economies to adopt such schemes. The possible broad spectrum of scheme applications is restricted by: (i) existing domestic regulatory systems; (ii) infrastructure market development; and (iii) financial market conditions. There is an implied relationship between the maturity of an economy with the breadth of contracting and financing schemes, with the more mature economies typically having broader and deeper markets to support private participation in the infrastructure sector, which is uniquely characterised by long-term assets.

Figure 2. Infrastructure Project Delivery Schemes



Source: PPIAF. 2012. PPP Basics and Principles of a PPP Framework. Note 1, May 2012.

Domestic regulatory systems affect the infrastructure market in a profound manner. There can be regulatory governance that restricts the participation of private and foreign entities in infrastructure or limit the available financing instruments. For public–private partnership (PPPs), the World Bank goes as far as saying that different legal systems have different levels of difficulty of non-traditional procurement method applications: countries with a common law system are characteristically more flexible compared to ones running under a civil law system. There can also be the aspect of regulatory substances, where the application of governance in the form of actions and decisions (or lack of) is subject to political economy. As such, it is common for developing countries to have laws and regulations that adhere to principles of good governance, but fail in their implementation.

The infrastructure market is comprised of various players, e.g. institutional investors of financiers and sponsors, advisors, credit rating agencies, insurance companies, construction companies, operators, and suppliers. Infrastructure market development is depicted in (i) the market structure (size, number, and composition); (ii) the conduct of the players; and (iii) their performance. Due to the influences between one industry and another within the infrastructure market, it is then apparent why an inefficient structure in one industry may restrict the growth of other industry and, later, the whole market. In developing countries, a common issue in the infrastructure market may be the dominance of SOEs in the finance, construction, and operation industries, such that it dwarfs the development of other industries that would otherwise be nurtured by competition.

Infrastructure assets have certain characteristics (large, long-term, and illiquid) and thus require certain types of financing to avoid asset-liability mismatch. The reason why pension funds are a naturally good fit for finance infrastructure is that they match the required long-term tenure, and there is an appetite for low-risk and steady returns. However, not all countries have deep financial markets with a sufficient supply of long-term funds. In many developing countries, financial inclusion is still an issue. As a result, domestic liquidity from the private sector side is limited, which drives up financing prices and shortens tenure. This may be remedied by broadening channels for foreign capital, but it is indeed not without risk, and regulatory agencies in developing countries may apply suboptimal measures due to a lack of sophistication and capacities.

There is no single best scheme for infrastructure development. Rather, with the above backdrop, an appropriate scheme will have to take into account the project objectives, the risks involved, stakeholders' interest, and the risk appetite. Before anything else, the project itself should be feasible and commercial and pass the tests in the preparation stage as investments in infrastructure projects always boil down to the feasibility and commercial of the project.

A feasible infrastructure project means that the project is technically feasible (which includes environmental and social considerations) and delivers acceptable returns for each stakeholder, i.e. provides economic benefits for the intended beneficiaries and delivers financial returns for the shareholders and lenders.

Financing vs. Funding Confusion and the Paradox of Infrastructure Financing

Unfortunately, public sector stakeholders often take the simplistic point of view that any issue related to infrastructure project development will eventually be addressed and dissipate as development takes place and the physical asset materialises. This 'build first, solve later' mindset is problematic since it can easily become myopic in the race for political approval and may drive the tendency to overlook key considerations for project development. The mindset may come from stakeholders' inability to separate financing issues with project feasibility issues. It is thus important to state the distinction between 'financing' and 'funding' concepts before proceeding to further discuss the infrastructure project-driven liabilities:

- *'Financing'* is the initial finance required for a project to cover the capital cost or capital expenditure. It may be obtained either in the form of debt or equity, and would entail a cost to obtain, either in the form of interest (for debt) or dividend payments (for equity).
- *'Funding'* is long-term finance that serves as the underlying cash inflow for a project. A funding source must be present to support financing activities, i.e. it will generate the internal return needed to repay the initial financing placed and finance continuous investment activities to sustain the operations and maintenance (O&M) activities of the project.

Public sector apparatuses – particularly in developing countries – have often fallen short in understanding the above distinction, and the confusion may lead to obtuse policies. An example of a common pitfall is addressing a policy issue that affects the funding stream with an inappropriate instrument. For example, if a tariff is set at a level below the willingness-to-pay and ability-to-pay, it will lead to service overconsumption and lower revenue. In this case, it would be an inefficient and expensive choice for the public sector to address a project's cash deficit through a continuous injection of a subsidy or guarantee instruments, rather than tackling the efficient tariff issue in the first place.

There is a paradox of infrastructure financing involving private parties, where commercial financing can only be secured when the funding part of the equation has already been solved. At the end of the day, it is the funding side that determines

a project's financial feasibility. The weaker a project's funding basis is, which may manifest as a weak revenue stream, the harder it would be to obtain affordable financing or obtain financing at all, since the lender and sponsor will factor additional risk premiums for uncertainties or be averse to the extent that they refuse to participate in financing.

It is within these contexts that subsidies as a public sector measure may become a tool to address the financing and funding issues, and the manner of which they do so will have different fiscal implications.

3. Implicit Subsidies and Contingent Liabilities

Having discussed all the basic concepts of infrastructure, including the concept of infrastructure financing, in this section we will discuss the definition of 'implicit subsidies' and 'contingent liabilities', how the prior may create the latter, and how this may impact fiscal sustainability.

Implicit Subsidies

Subsidies from the government are an integral part of the discourse on infrastructure financing and funding. By definition, a subsidy is a transfer from other parties (typically the public sector or fiscal authorities) to private parties, households, or individuals in which the subsidy provider does not receive any goods or services in exchange for the transfer. A subsidy is typically intended to induce behavioural changes related to market imperfections (efficiency) or the distribution of resource s(equity). Market imperfections occur alongside the externalities that emerge when infrastructure benefits not only the direct users but also wider societies. For instance, the unwillingness of railway users to pay for the wider environmental benefits of railway, such as lower vehicle emissions, will be reflected in a lower tariff (Schur, 2016). On the other hand, equity issues occur when expensive services hinder the low-income population group from accessing infrastructure services without lowered tariffs. As a result, government intervention in the form of subsidies is needed to financially enable infrastructure delivery.

Irwin (2003) considers five broader government objectives for subsidies on infrastructure: (a) internalising externalities in infrastructure markets, (b) overcoming failures in markets for financing infrastructure, (c) mitigating political and regulatory risks, (d) circumventing political constraints on prices or profits, and (e) redistributing resources to the poor via infrastructure.[1] In subsidising infrastructure, the government may choose between the instruments of *revenue subsidy* (to address the funding side) or *capital subsidy* (to address the financing side). The characteristics of those two subsidies might be different as a result of a different set of objectives for each subsidy. Ideally, revenue subsidy might be used to achieve certain objectives, such as ensuring the affordability and sustainability of access to infrastructure services. A revenue subsidy will be provided so that the society will receive services with affordable tariffs. On the other hand, a capital subsidy is ideally provided to accelerate capital provision for infrastructure delivery, typically in order to achieve national targets, such as universal access to basic infrastructures. A capital subsidy is designed to reduce the cost of a service paid by an end user by lowering the debt service component of a cost-recovering tariff (Kingdom, Baeumler, and Guzman, 2012).[2]

From the accountability standpoint, the government also has the choice on whether the subsidy will be given explicitly or implicitly. *Explicit subsidies* are defined as transfers from government to service provider or beneficiary which are explicitly budgeted above the line as government expenditure. The amount of subsidy, ultimate beneficiaries, and its mechanism are clearly defined and stated as a subsidy in the public budget documents. For instance, the Government of Indonesia budgets electricity subsidy expenditure for PLN (state electricity company) to subsidise the difference between regulated and market electricity tariffs for low to middle-income households, ensuring service affordability for the poor.

[1] Irwin (2003) further mentions six possible fiscal instruments designed to achieve those goals: (a) output-based cash subsidies, (b) in-kind grants, (c) tax breaks, (d) capital contributions, (e) guarantees of risks under the government's control, and (f) guarantees of risks not under the government's control.

[2] Concessional financing is one example of a capital subsidy.

On the other hand, an *implicit subsidy* is not clearly stipulated as a government expense. An implicit subsidy can be posted below the line in the government's budget document. For example, the government may post its subsidy to an SOE as an equity injection, which is recorded as a government financing activity. The difference will lie in the absence of an SOE's obligation to repay this equity through dividends. With a lower cost of financing, such a subsidy will enable them to operate at a lower cost. Another similar example on the debt side would be an interest rate subsidy in which SOEs receive a below-market interest rate for their debt. Alternatively, an implicit subsidy can also be even more elusive, in the form of a silent guarantee on SOE debt issuances in which the government is expected to fully cover the risk premium needed to qualify for an AAA rating (Velde and Warner, 2007).

The most important issue for an implicit subsidy is its lack of clarity and transparency. A lack of clarity around its process hinders informed and structured policy debate about better alternative uses of public funds. A lack of transparency in terms of the amount, mechanism, and end beneficiaries makes evaluating an implicit subsidy difficult, particularly in terms of its effectiveness. This further implies difficulty in subsidy targeting, which may result in a high opportunity cost for public expenditure. Lastly, non-transparency in the implicit subsidy amount may also lead to hidden deficits and contingent liabilities in the future.

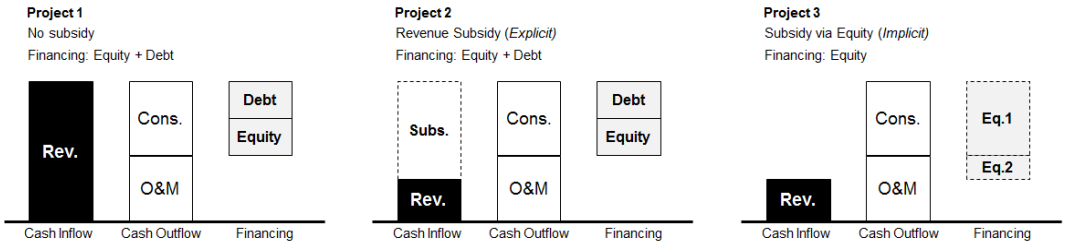
Subsidies that are implicit – passed as government financing activity instead of being recorded as public expenditure – may have a higher chance of driving further contingent liabilities if the regulation does not mandate reporting and monitoring on potential fiscal risk due to the government capital commitment. The monitoring of this by responsible public agencies is likely to be insufficient in nature due to the lesser extent of information and accountability. In other words, insufficient risk identification and monitoring may overlook triggering factors and events until the risk has been materialised.

There are several possible reasons why a government may choose to make subsidies implicit instead of recording them explicitly. First, the choice could be motivated by political reasons should making the expenditure explicit result in some form of political backlash or pushback from the public or legislative arm. Second, it could also be based on myopic practicalities, for example when the executive arm chooses to inject capital into an SOE as a conduit to accelerate project delivery instead of going through the proper budgeting process that involves legislative scrutiny. Lastly, it could also be driven by the motive to obscure a true deficit due to the statutory deficit limits that may exist in several countries.

Stylised depictions on the ideal conditions for a financially feasible infrastructure project vs. a financially unfeasible project being subsidised through explicit and implicit mechanisms are depicted in

Figure 3 below. In Project 1, the lifecycle project revenue is sufficient to cover the O&M expenses as well as service the capital expense that would first be financed through debt-leveraged equity. This means that at the end of the project period, both equity and debt will be fully repaid. Although revenue certainty will affect the project risk premium and thus the market's appetite on the interest rate and gearing ratio, having a fully funded project will make it easier for the project to obtain debt financing to supplement equity placement. In Project 2, the project's lifecycle revenue is insufficient but is subsidised explicitly by the government to be fully funded. In this case, the project will turn out similar to the case of Project 1, with the main difference being that the project's cash inflow will now come from both the service revenue and government subsidy. In the case of Project 3, the gap in the project cash inflow is addressed through an implicit subsidy in the form of an equity injection into the project. In this case, although injected as equity, the nature of this financing activity is different since it will never be repaid to the financier, and as a result will represent a net loss for the financier. The equity amount needed to jumpstart the project will also be considerably larger since it will be difficult to obtain market debt financing given the cash inflow projection.

Figure 3. Illustration of an Implicit vs. Explicit Subsidy in an Infrastructure Project



Source: Constructed by author.

Contingent Liabilities

Definition of Contingent Liabilities

There are two issues surrounding the definition of contingent liabilities, namely the technical or formal definition, and recognition. The formal definition of contingent liabilities is still subject to debate amongst academics and practitioners. For instance, according to accounting standards, liabilities that are presented in a balance sheet, such as a 'provision', should not be classified as contingent liabilities. Only off-budget liabilities can be included under contingent liabilities (Cebotari, 2008).

Nevertheless, the general consensus concerning what should be classified under contingent liabilities are those in which timing and magnitude are dependent on the incidence of an uncertain future event beyond the government's control. The Government Finance Statistics Manual (IMF, 2014) recognises contingent liabilities as an obligation source that could create fiscal risk in the future. GFSM defines contingent liabilities as 'obligations that do not arise unless a particular, discrete event(s) occurs in the future'. On the other hand, according to IPSAS 19 (IFAC, 2020) – Provisions, Contingent Liabilities and Contingent Assets – contingent liabilities are defined as a " possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity, or a present obligation that arises from past events but is not recognised because: (i) it is not probable that an outflow of resources embodying economic

benefits or service potential will be required to settle the obligation; or (ii) the amount of the obligation cannot be measured with sufficient reliability".

In addition to the definition issue, the recognition of contingent liabilities becomes crucial. According to accounting standards, contingent liabilities can be recognised as liabilities in the financial statement (Cebotari, 2008) if the probability of the event leading to payment is more than 50%, and the amount can be reasonably quantified. On the other hand, the statistical definition of contingent liabilities does not recognise the figure unless it has materialised and been paid, avoiding double counting between liabilities recorded in the public side and private sector balance sheets. However, efforts to harmonise the accounting and statistical perspectives regarding contingent liabilities have been ongoing, including on how to treat contingent liabilities (Cebotari, 2008).

Different Types of Contingent Liabilities

There are four types of government liabilities, as explained by Polackova (1998), which are a combination of four characteristics: explicit vs. implicit, and direct vs. contingent (

Table *1*). The difference between the explicit and implicit characteristics lies in the reason for the government to assume the liabilities, in which the explicit liabilities are related to laws or contracts, while the implicit liabilities are more associated with public expectations, political pressures, and the overall role of the state (Polackova, 1998).

Table 1. Fiscal Risk Matrix

Liabilities	Direct (obligation in any event)	Contingent (obligation if an event occurs)
Explicit **Government liability as recognised by a law or contract**	• Foreign and domestic sovereign borrowing (loans contracted and securities issued by central government) • Budgetary expenditures • Budgetary expenditures legally binding in the long term (civil servants' salaries and pensions)	• State guarantees for non-sovereign borrowing and obligations issued to subnational governments and public and private sector entities (development banks) • Umbrella state guarantees for various types of loans (mortgage loans, student loans, agriculture loans, small business loans) • Trade and exchange rate guarantees issued by the state • State guarantees on private investments • State insurance schemes (deposit insurance, income from private pension funds, crop insurance, flood insurance, war-risk insurance)
Implicit **A moral obligation of the government that reflects public and interest-group pressures**	• Future public pensions (as opposed to civil service pensions), if not required by law • Social security schemes, if not required by law • Future healthcare financing, if not required by law • Future recurrent costs of public investments	• Defaults of subnational government or public or private entities on nonguaranteed debt and other obligations • Clean-up of liabilities of entities being privatised • Banking failure (support beyond state insurance) • Failure of a non-guaranteed pension fund, employment

Liabilities	Direct (obligation in any event)	Contingent (obligation if an event occurs)
		fund, or social security fund (protection of small investors) • Default of central bank on its obligations (foreign exchange contracts, currency defence, balance of payments stability) • Bailouts following a reversal in private capital flows • Environmental recovery, disaster relief, military financing

Source: Polackova (1998).

The direct implicit liabilities of governments include the multi-year investment of such infrastructure development and also the recurrent costs of O&M to ensure the continuity of public service provision from infrastructure development.

Possible Root Causes and the Impact on Fiscal Sustainability

Infrastructure development requires the preparation of sufficient financing. Financing infrastructure is a complex and unique process that includes many parties, including banking and other financial institutions (because it requires leveraging debt), and also fiscal authorities.

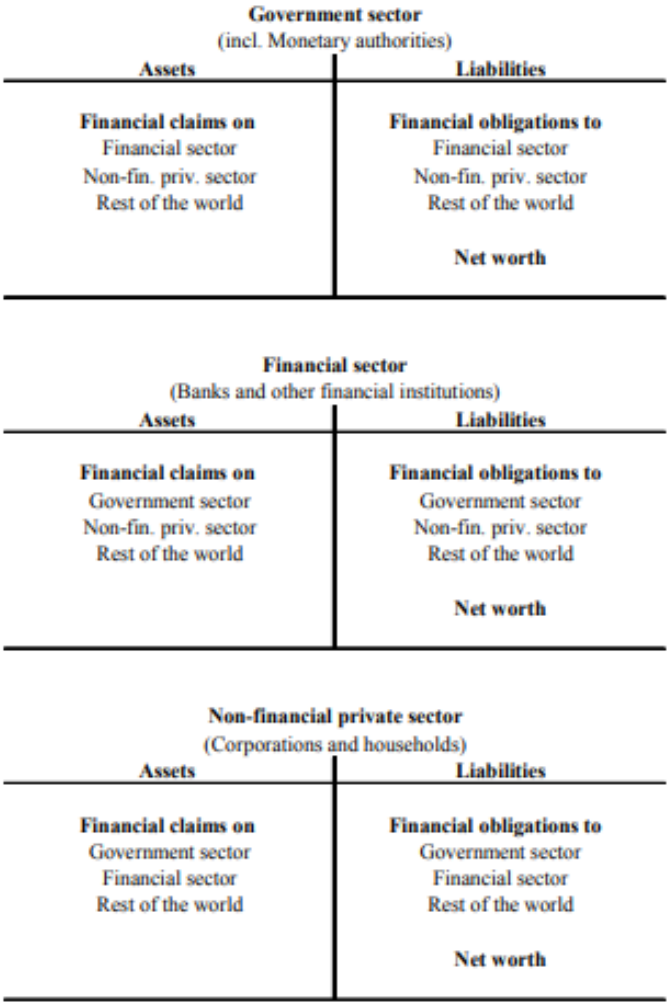
In the case of Viet Nam, ADB (2016) found that large off-budget expenditure and fiscal commitments combined with loan guarantees, which include implicit subsidies, contribute fiscal risk due to the low level of transparency. Implicit subsidies, in the form of guarantees, may involve contingent liabilities if they (1) induce moral hazard for the private providers, leading to inefficient investment decisions; or (2) if by granting guarantees, the government commits to the cash outlays in the event of default. The transmission to contingent liabilities is intensified if a large part of the commitment is in an off-budget, low-transparency,

or non-robust monitoring system. The consequence for development progress may be serious since it disrupts the planning and budgeting process and becomes an extensive shock. ADB (2016) mentioned that:

> *'The implicit subsidy is proportional to the amount guaranteed and to the probability that default will make payment necessary. When off-budget outlays (such as loan guarantee payments) cause large unplanned expenditures, the planning functions of government as well as the effectiveness of macroeconomic policies may be seriously impaired… Low levels of transparency further amplify fiscal risks.'*

In order to understand how an implicit subsidy might lead to contingent liabilities, we borrow framework from macroeconomic literature from the 'balance sheet approach' to explain the complex linkage between economic agents in infrastructure projects. The balance sheet approach is well known as a model to explain the Asian financial crisis of 1997, which is difficult to elaborate using standard models of financial crises, such as the first-generation model (fundamental factors) or second-generation model (speculative attack). The balance sheet approach, known as a third-generation model, tries to explain that even though the macroeconomic fundamentals are in good condition, internal linkages amongst balance sheets in an economy might cause issues and could cause a financial crisis.

Figure 4. Illustration of Balance Sheet Linkages in the Economy

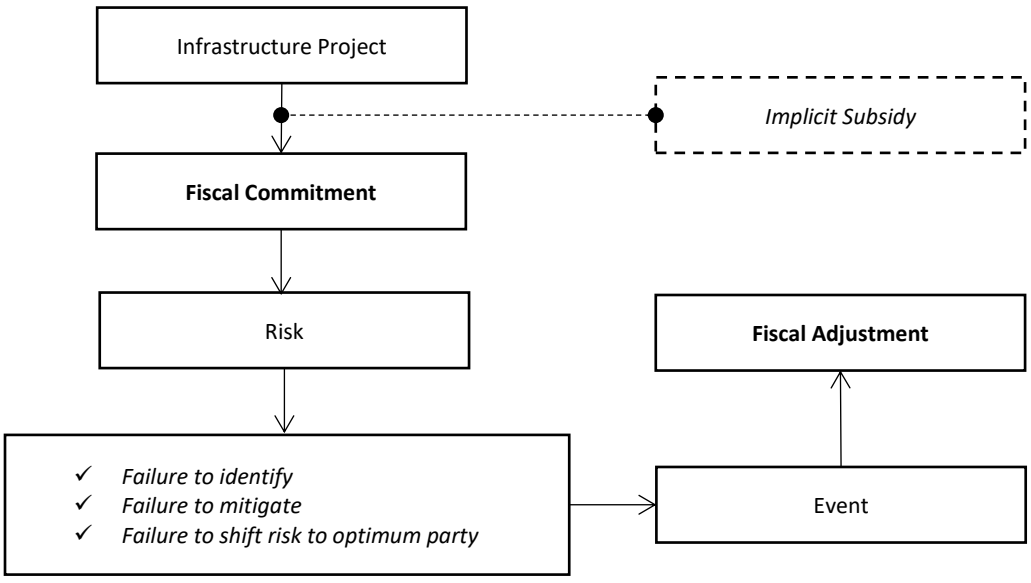


Source: Setser et al. (2003).

Fiscal commitments to infrastructure development in the form of payments to contractors, guarantees, or direct spending, regardless of the procurement method, will be carried by the government throughout the project cycle. These will be accounted for as liabilities in the government balance sheet. Ideally, the costs of managing the infrastructure are examined during the project preparation so that all the costs, including the contingency, are anticipated by the government. Also, a sound sensitivity analysis carried out in the preparation should elucidate how sensitive a project is to external factors.

However, naturally, a project usually possesses substantial risk due to the uncertainty of external conditions. Various risks from the physical nature of a project, such as site risk and environmental risk, may lead to a different amount of outlay versus what was projected and budgeted in the preparation stage. The risk of politically-triggered 'scope creep', when project scope surreptitiously bloats, also often occurs in projects. Highly uncertain macroeconomic conditions could cause significant adjustments in demand projections or the cost of imported inputs. Financial project feasibility must be adjusted as well due to rapid changes in financial market conditions. Finally, technological change might latently disrupt the 'least-cost solution' of the project, as evidenced in the power sector. The project may also fail to mitigate internal risks due to weak project management. Implicit fiscal commitment to subsidise an infrastructure project may lead to all these risks being manifested immediately or later throughout the project cycle with no clear governance mechanism to mitigate, account for, or remedy the risks.

Figure 5. Possible Root Causes of Infrastructure-related Contingent Liabilities



Source: Author.

There are 3 failures that could increase the exposure to project risk: (1) failure to identify; (2) failure to mitigate; (3) failure to shift risk to the optimum party. Those three conditions are very much related to whether the risk associated with

the project is a systemic or non-systemic risk. Aside from answering the question of ‘what is the risk’, it should be also required to assess at least two other aspects, which are the probability of occurrence and potential severity. For instance, failure in identifying risks related to infrastructure project could be in the form of overestimating demand or revenue from the project. Subsequently, risk management requires the government to mitigate the risk. Risk is naturally always present and cannot be avoided. However, the exposure to the risk or the severity could be reduced by adopting a compatible risk management strategy. Lastly, one mitigation strategy to manage risk is to examine how to create an ideal structure arrangement so that the risk will be shifted to an optimum party.

During project preparation, driven by other agendas, such as political motivation, government agencies might be short-sighted in identifying and managing the risks associated with the liabilities in the future. Infrastructure projects might be employed by a government administration to boost political popularity because of the nature of infrastructure projects compared to other public service provisions. Infrastructure projects, particularly for hard infrastructure, are tangible in nature and perceptible by voters, while other public service provisions, such as improvements in legal, health, or education systems, might be socially beneficial but are difficult to perceive. Because of the political motivation, managing the sustainability of infrastructure projects over the project life cycle, including managing the liabilities, is less of a priority for the administration compared to securing political approval.

This could also happen as a result of ‘term mismatch’ between the term period of the sponsoring government administration and the infrastructure project cycle, which typically has a longer term. The sponsoring administration’s motivation is often only to have the project built, without much consideration of the sustainability of the infrastructure’s operation or maintenance in the future throughout the project lifecycle. After the project is built, it is too late to reflect on the substantial risks posed by bad project structure. The investment made has become ‘a sunk cost’ so that the government has no option to recover the project, and it might be costly for future generations.

Ultimately, a bad project structure will be latent and hidden until an event triggers the risks. It may worsen, for instance, the exposure of project liabilities to the crisis. In such cases, governments are certainly expected to act as 'guarantors of last resort'. Governments will socially function to ensure that the public service provision from such infrastructure projects is sustainable. Such justification may be sufficient for the government in reallocating budget to address the contingent liabilities.

Contingent liabilities can be classified into several categories. Bova et al. (2016) classified them based on the triggering sector/factor, which includes (1) the financial sector; (2) state-owned enterprises; (3) subnational governments; (4) natural disasters; (5) the private non-financial sector; (7) legal issues such as contracts; and (8) PPPs.

Cebotari (2008) noted that PPP contingent liabilities include guarantees from the government for concessionaire borrowing, minimum revenues, exchange rate losses, and also failures in PPP implementation due to unrealistic demand projections or other shortcomings in project planning and management. Although PPP contingent liabilities might be the only explicit categories related to the infrastructure sector, other contingent liability categories might also be triggered due to infrastructure development. For instance, as the Government of Indonesia is eager to involve more SOEs to develop infrastructure, it might create contingent liabilities if it does not manage prudently. Additionally, infrastructure development could also trigger contingent liabilities on the financial sector. There is empirical evidence that the contingent liabilities that happened in the financial sector, which has the highest fiscal cost, were significantly correlated with SOEs and subnational and PPP contingent liabilities (Bova et al., 2016).

Even though governments do not procure infrastructure projects through PPPs, contingent liabilities might also arise. During the 1997 Asian financial crisis, as documented by Cabetori (2008), in the energy-related sector, the Government of Indonesia had to settle SOE fuel costs amounting to 4% of GDP.

Table 2. Fiscal Cost of Contingent Liability Realisation

Type of Contingent Liabilities	Number of Episodes	Number of Episodes with Identified Fiscal Costs	Avg. Fiscal Costs (% of GDP)	Maximum Fiscal Costs (% of GDP)
Financial Sector	91	82	9.7	**56.8**
Legal	9	9	7.9	**15.3**
Subnational Government	13	9	3.7	**12.0**
SOEs	32	31	3.0	**15.1**
Natural Disaster(s)	65	29	1.6	**6.0**
Private Non-financial Sector	7	6	1.7	**4.5**
PPPs	8	5	1.2	**2.0**
Other	5	3	1.4	**2.5**
Total	**230**	**174**	**6.1**	**56.8**

Source: Bova et al. (2016).

Contingent liabilities may cost the government's fiscal position significantly. On average, fiscal costs of realised contingent liabilities account for 6.1% of GDP (Bova et al., 2016). The most costly and frequent contingent liabilities type is from the financial sector, which costs 9.7% of GDP on average and could be as high as 57% of GDP (Bova et al., 2016). Although PPPs cost 1.4% of GDP, the fiscal costs may increase in the future as a result of a rise in PPP adoption for infrastructure provision in East Asia.

Another relevant type of contingent liability that may be relevant for developing countries in East Asia is related to SOEs. As mentioned earlier, in many emerging economies of East Asia, governments may involve SOEs in infrastructure provision. Bova et al. (2016) further reveal that there was a substantial rise in the number of instances of government support for SOEs during the Asian financial crisis and the global financial crisis.

Is the Risk for Implicit Subsidies-Driven Contingent Liabilities Higher for Certain Cases?

Risks in Different Types of Project

PPP infrastructure projects are defined as infrastructure projects that involve risk-sharing between the private and public parties. As such, risk allocation is central in the project definition to determine the responsibilities and accountability of the private and public parties, and failure to properly identify and allocate risk may translate into project failure. Taking into account the broader definition of PPPs, the involvement of non-government/private parties [3] may increase the difficulty of the process of risk identification. Reflecting on the infrastructure project cycle, projects in the greenfield stage may also have disproportionally higher rates of difficulty in risk identification compared to projects that have already reached maturity in the brownfield stage.

Table 3. Detailed Types of PPP by Sector (1990–2017) and Number of Projects

Type of PPI	Subtype of PPI	Energy	ICT	Transport	Water and Sewerage	Grand Total
Brownfield	Build, rehabilitate, operate, and transfer	17	7	52	59	**135**
	Other	1	-	-	-	**1**
	Rehabilitate, lease or rent, and transfer	1	-	4	-	**5**
	Rehabilitate, operate, and transfer	52	1	93	141	**287**
Divestiture	Full	37	1	1	1	**40**
	Partial	123	8	45	15	**191**
Greenfield project	Build, lease, and transfer	5	-	2	-	**7**

[3] In several countries, governments may enter into PPP contracts with SOE entities.

	Build, operate, and transfer	685	7	255	326	**1,273**
	Build, own, and operate	318	4	-	15	**337**
	Merchant	7	13	2	-	**22**
	Not available	2	1	-	-	**3**
Management and lease contract	Lease contract	1	-	6	7	**14**
	Management contract	-	-	4	41	**45**
Grand Total		**1,249**	**42**	**464**	**605**	**2,360**

Countries: Association of Southeast Asian Nations (excl. Singapore and Brunei Darussalam) and China.
Source: PPIAF, 2018; calculated by author.

Developing a massive infrastructure programme requires comprehensive assessment, including on how the programme may affect long-term fiscal sustainability. For instance, when a government considers adopting a PPP scheme to procure an infrastructure project, the assessment must involve the fiscal commitments for the PPP to ensure that the PPP structure is fiscally affordable and responsible. Assessments on fiscal commitments take place not only at the project development stage but also throughout the implementation stage in which monitoring, reporting, and timely budgeting of the fiscal commitments are crucial (World Bank et al., 2014).

There are at least two reasons why a fiscal assessment of the contingent liabilities is crucial when procuring through a PPP. First, a PPP is a long-term contract, while the public budget is usually conducted on a yearly basis or is based on at most five-year planning when involving a proper capital investment plan. Thus, managing long-term fiscal commitments to pay the private entities against the government's budget (which is typically short-term and cash-based) will be challenging. Sometimes, the fiscal commitments will not arise until several years after the PPP has been signed (World Bank et al., 2014) . In addition, because of the nature of PPP as a long-term contract, the fiscal commitment arising from a

badly prepared PPP could impose a significant burden on the public budget for a longer period.

Second, improperly assessed fiscal commitments could produce unwanted processes in the future that could jeopardise the benefits of PPPs and also their reputation. For instance, they might lead to contract renegotiation of PPPs that could increase the costs from the government's side (World Bank et al., 2014) . Such costs might be in the form of additional fiscal burdens because of higher availability payments to contractors, increasing tariffs, and other adjustments.

Risks in Different Types of Fiscal Systems

Fiscal systems are idiosyncratic and tied to preceding factors of history and political economy. Countries may have different types of fiscal systems in various dimensions. For example, in the context of decentralisation, they may go in any place in the spectrum of fully centralised to decentralised in different degrees and manner with either unitary or federalist systems. In the different decentralisation systems, governments at the central or federal level will have varying degrees of influence on the general fiscal policies, measures, and outcomes. The legal relationship between the vertical and horizontal government entities will further shape the dynamics of public revenues and expenditures. In the countries that adopt the unitary state system, the liability of a subnational government may always be eventually passed to the central government, almost mimicking ownership risk, as opposed to the case of isolated bankruptcy of state government in the federacy system.

On the other hand, in the context of fiscal rules, countries may have different fiscal rules, for example as ceilings or floors for certain expenditures or revenues, and for deficits. The fiscal rules are often statutory in nature, and their entrenchment in the legal system may also vary, which means that the governments in each country may have different degrees of freedom in exercising their fiscal measures. The general consensus is that a form of basic fiscal rules on the deficit is more prudent, as per the Maastricht Convention.

Each country may also have different accounting standards that may or may not fully adhere to international accounting standards. This may include the inclusion or exclusion of the quasi-public sector (i.e. SOEs) in the public sector balance sheet or the subnational government in the general government balance sheet. The lack of consolidation of the quasi-public sector may mask the extent of relationships between the public and quasi-public sectors.

Effective public service delivery, well-managed public finance, and prudent fiscal risk management are more of a function of capacity for institutional and governance effectiveness rather than being single-handedly influenced by the form of the fiscal system. In addition, the ability to identify and mitigate risks triggering the contingent liabilities due to the infrastructure commitment will increase as the government capacity increases.

Table 4. Surveys of Select East Asian Countries

Country	Monetary Regime	Fiscal Rule	Political Decentralisation	SOE Size (Total Co/ Sum Asset)	Total General Government Liability as % GDP	Example of Implicit Subsidies	Compliance with Int'l Accounting Standards
Indonesia	ITF, flexible exchange rate, no capital control	Max. annual deficit: 3% of GDP Max. debt stock: 60% of GDP	Decentralised in unitary government	26% (Non-Financial) 39% (Financial) (2016)	29.6	Capital injection for SOE to deliver infrastructure (e.g. LRT Jabodebek project)	Indonesia has adopted IPSAS-type standards, but the central and local government accounts are currently prepared on a modified cash and partial accrual basis.
Malaysia	Inflation anchoring, other managed arrangement of currency	Domestic debt at 55% of GDP. Complemented by other legal rules, such as	Federal government	15% (2010)	53.6	Provision of natural gas below market prices to electricity	Implemented accrual standards based on IPSAS in

Country	Monetary Regime	Fiscal Rule	Political Decentralisation	SOE Size (Total Co/ Sum Asset)	Total General Government Liability as % GDP	Example of Implicit Subsidies	Compliance with Int'l Accounting Standards
	system, no capital control	limits on external debt (RM 35 billion) and Treasury bills issued (RM 10 billion).				generation companies to enable lower electricity tariffs, leading to foregone revenue of SOEs.[4]	2015 for the Federal Government and in 2016 for State Governments.
Philippines	ITF, floating exchange rate	N/A	Decentralised in unitary government	-	37.3	Concessional loan to water utility	Partial adoption of IPSAS.
Singapore	Stabilised arrangement	Up to half of the expected long-term real returns on fiscal reserves invested by MAS, GIC Pte	Unitary government	15% (2010)	110.2	Reduction in employers' Central Provident Fund (CPF) contribution	Partial adoption of IPSAS.

[4] Source: bnm.gov.my/files/publication/ar/en/2014/cp04_001_box.pdf

Country	Monetary Regime	Fiscal Rule	Political Decentralisation	SOE Size (Total Co/ Sum Asset)	Total General Government Liability as % GDP	Example of Implicit Subsidies	Compliance with Int'l Accounting Standards
		Ltd., and Temasek to be taken into the annual budget. Balance budget rule: Budget to be balanced across government term of office (usually 5 years).				rates during 1997 AFC	
Thailand	Floating exchange rate	Debt to GDP ratio below 50%	Unitary government	40% (2015)	41.6	Interest rate subsidy on Thailand Student Loan Fund.[5]	Partial adoption of IPSAS.

[5] Source: https://www.sciencedirect.com/science/article/abs/pii/S0272775710000439

Country	Monetary Regime	Fiscal Rule	Political Decentralisation	SOE Size (Total Co/ Sum Asset)	Total General Government Liability as % GDP	Example of Implicit Subsidies	Compliance with Int'l Accounting Standards
Viet Nam	Stabilised arrangement	N/A	Unitary government	38% (2010)	58.4	Concessional financing (capital subsidy made available to service providers for investments to expand or improve their assets) in water and sanitation sector. [6]	Initial assessment stages of adopting IPSAS-type standards. A revised Accounting Law came into effect in January 2017 mandating the adoption of accrual-based standards.

[6] Source: http://documents.worldbank.org/curated/en/984101468337842322/Vietnam-Capital-subsidies-implicit-in-concessional-finance-how-to-make-them-more-transparent-and-better-targeted

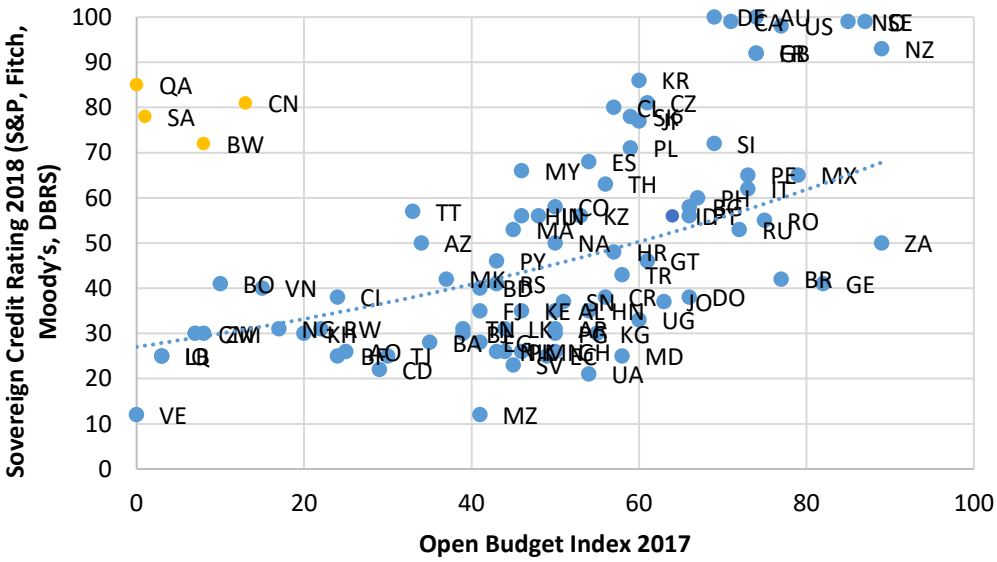
Country	Monetary Regime	Fiscal Rule	Political Decentralisation	SOE Size (Total Co/ Sum Asset)	Total General Government Liability as % GDP	Example of Implicit Subsidies	Compliance with Int'l Accounting Standards
China	Other managed arrangement of currency system	N/A	Decentralised in unitary government	30% (2010)	51.2	Export credit insurance, loan interest subsidy, tax cut and/or preferential treatment to corporate sector.	IPSAS not adopted.

Source: Collated by author.

Fiscal Transparency Role in Influencing Fiscal Risk Management

There is a general principle for good fiscal risk management, where fiscal transparency enhances public sector accountability and leads to better prudence. De Renzio and Wehner (2017) summarised that the state of fiscal transparency affects macro-fiscal outcomes such as deficit/debt control positively. Markets may capture these through fiscal information disclosed, and signal back through a better sovereign credit rating (see Figure 6). As such, fiscal transparency becomes important to ensure that market the mechanism to control public sector behaviour in fiscal risk management is accountable.

Figure 6. State of Fiscal Transparency and Country Sovereign's Credit Rating



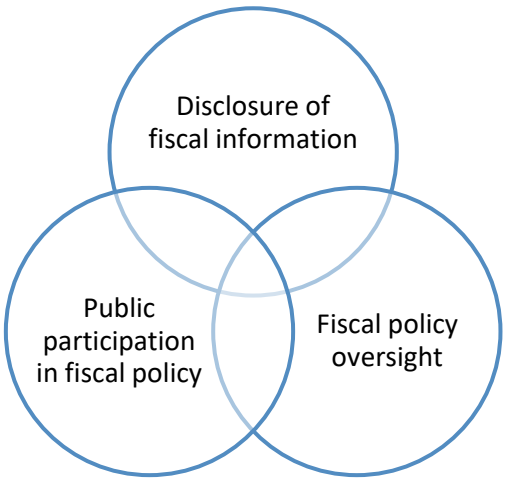
Source: Open Budget Index 2017 and tradingeconomics.com; calculated by author.

A country's state of fiscal transparency may be captured through the Open Budget Survey, which assesses countries' budget transparency based on the amount and timeliness of the budget information that governments are making publicly available. The survey consists of 145 questions that are scored based on evidence in public budget documents that are in turn reflected as the Open Budget Index (OBI) score. There are three elements of fiscal transparency as shown in Figure 7: (i) disclosure of fiscal information; (ii) public participation in fiscal policy; and (iii)

fiscal policy oversight. This means that holistic transparency does not only involve most observable characteristics of information disclosure but also incorporates prudential oversight on fiscal policymaking, and, last but not least, includes public stakeholders (particularly the citizens) in the process.

In managing risk from the implicit subsidy-driven contingent liabilities, a fiscal transparency measure would be the first stopgap. This means that the public sector must first endeavour to make subsidies explicit through disclosure in budget documents and, if possible, further incorporate framework to safeguard fiscal policy from the moral hazards that may motivate turning the subsidies into implicit ones.

Figure 7. Elements of Fiscal Transparency



Source: Global Initiative of Fiscal Transparency, 2018.

4. Case Studies from East Asia: Project-level Discussions from Select Countries

Government support for privately financed projects can be in the form of direct or indirect support. A government can directly support a project by providing capital or revenue subsidies, which are defined as liabilities of the government and do not fall under the contingent liability definition. According to the World Bank's Private Participation in Infrastructure (PPI) Database definition, a capital (financing) subsidy is only for providing support to cover the costs of physical assets during construction, while a revenue (funding) subsidy is used to support the

financial condition of the project's company during the operational stage in the form of cash subsidies, including shadow tolls or availability payments.

In the Association of Southeast Asian Nations (ASEAN) and China from 1990 to 2017, more than 300 projects received direct government support, mostly in the energy sector (15% of projects received support) and through revenue subsidies. Although dominated by revenue subsidies, the governments also provided support through capital subsidies; for instance, in the transport sector, there were six projects supported by capital subsidies. As in energy-related projects, water and sewerage projects received mostly revenue subsidies.

Table 5. Number of Projects by Type of Direct Government Support (1990–2017)

Sector	Energy	ICT	Transport	Water and Sewerage	Grand Total
Capital Subsidy	2	-	6	4	12
Revenue Subsidy	187	-	10	92	289
Not Applicable	184	3	32	112	331
Not Available	876	39	416	397	1,728
Grand Total	1,249	42	464	605	2,360

Countries: ASEAN (excl. Singapore and Brunei Darussalam) and China.
Source: PPI Database, 2018; collated by author.

On the other hand, indirect government support falls into two categories: either contingent liabilities or direct liabilities supporting the project indirectly. As defined above, contingent liabilities could be in the form of various types of support from the government, including guarantees. In this case, these government policies include interest rates or debt guarantees. Table 5 specifies the type of guarantee provided by governments in ASEAN to privately financed infrastructure projects. It shows that since 1990, governments in Southeast Asia have been actively supporting private participation in infrastructure by providing them with various types of guarantee, indicating the risk of contingent liabilities in infrastructure.

Table 6. Number of Projects by Type of Indirect Government Support (1990–2017)

Sector	Energy	ICT	Transport	Water and Sewerage	Grand Total
Exchange Rate Guarantee	1	-	-	-	**1**
Interest Rate Guarantee	-	-	1	-	**1**
Other VGF guarantee	-	-	-	1	**1**
Payment Guarantee	156	3	-	49	**208**
Revenue Guarantee	4	-	12	18	**34**
Tariff Rate Guarantee	34	-	-	-	**34**
Tax Deduction/Government Credit	-	-	1	-	**1**
Not Applicable	130	-	19	51	**200**
Not Available	924	39	431	486	**1,880**
Grand Total	**1,249**	**42**	**464**	**605**	**2,360**

Countries: ASEAN (excl. Singapore and Brunei Darussalam) and China.
Source: PPI Database, 2017; collated by author.

During the period 1990–2017, indirect government support was mainly focused on payment guarantees. Payment guarantees provide a guarantee for transactions between a purchaser (usually an SOE) and a private provider in an infrastructure project in the case of a non-performance purchaser. Without sound regulatory framework, governance, and well-prepared planning and robust demand projection, payment guarantees can trigger contingent liabilities, as indicated in the case of Indonesia's electricity sector (refer to the case study in this volume). This type of guarantee is typically provided for transactions in the water (Water Purchase Agreement, WPA) or energy sectors (Power Purchase Agreement). Another similar type of guarantee is revenue guarantees, in which the government sets a minimum income level for private providers, typically in water services and transport (toll roads).

Indonesia: 2015 SOE Assignments on LRT Jabodebek

LRT Jabodebek[7] is an approximately US$2 billion intercity light rail project that was directly awarded to the SOEs of the construction company PT Adhi Karya Tbk (ADHI) and the railway company PT Kereta Api Indonesia (KAI) in 2016. Early on, the project displayed the characteristics of weak planning and weak preparation and later tried to solve its funding issues through implicit subsidies on financing.

According to the official records, the project was incepted in 2015 when ADHI unilaterally started construction. Instead of undertaking a competitive tender, the project was assigned to ADHI to continue the construction in a top-down manner by the Government of Indonesia (GoI) through the issuance of presidential regulations. The motivation behind governing the project details through presidential regulations was to address the conflicting views of the many stakeholders involved, going as far as stipulating the project's technical design (choice of light rail technology), contract structure (assigning KAI as the operator), and operation and management. There were several changes made throughout the history of the regulation revision as tabulated in

[7] Jabodebek is short for Jakarta-Bogor-Depok-Bekasi, which is the greater Jakarta city area covered by the project.

Table 7.

Table 7. Evolution of the LRT Jabodebek Project Governance

Aspect	Presidential Regulation 98/2015 2-Sep-15	Presidential Regulation 65/2016 29-Jul-16	Presidential Regulation 49/2017 3-May-17
Technical design	• Alignment route: 6 routes • Elevated railway • Maximising local components	• Alignment route: 6 routes • Elevated railway • Maximising local components • Standard gauge (1,435 mm)	• Alignment route: 6 routes • Elevated railway • Maximising local components • Standard gauge (1,435 mm)
Structure	• Construction agreement between the Ministry of Transportation (MoT) and ADHI through direct appointment. • MoT directly appoints construction supervisor consultant to supervise ADHI. • Administrative supervision by Government Internal Audit • Initiation of Oversight Committee	• Construction agreement between MoT and ADHI through direct appointment using design and build scheme. Construction may start before agreement signing. • MoT directly appoints construction supervisor consultant to supervise ADHI. • Administrative supervision by Government Internal Audit, including on milestone achievement and appropriateness of cost. • Initiation of Oversight Committee.	• Construction agreement between MoT and ADHI through direct appointment using design and build scheme. Construction may start before agreement signing. MoT may appoint independent consultant to appraise ADHI's technical design and pricing. • MoT directly appoints construction supervisor consultant to supervise ADHI. • Administrative supervision by Government Internal Audit, including on milestone

Aspect	Presidential Regulation 98/2015 2-Sep-15	Presidential Regulation 65/2016 29-Jul-16	Presidential Regulation 49/2017 3-May-17
			achievement and appropriateness of cost. • Initiation of Oversight Committee. • Operation and management contract between MoT and KAI.
Construction	Ceiling price and specifications by MoT. Feasibility study, bill of quantity, and delivery by ADHI: • Tracks (incl. elevated tracks) • Stations • Operation facilities ADHI receives payment based on milestones achieved	Ceiling price and specifications by MoT. Feasibility study, bill of quantity, and delivery by ADHI: • Tracks (incl. elevated tracks) • Stations • Operation facilities • Depot ADHI receives payment based on milestones achieved.	Ceiling price and specifications by MoT. Feasibility study, bill of quantity, and delivery by ADHI: • Tracks (incl. elevated tracks) • Stations • Operation facilities • Depot ADHI receives payment based on milestones achieved. Payment can be sourced either from government or KAI.
Operation and management	Open for tender	Assigned to KAI: • Rolling stock procurement • Operation and maintenance of rolling	Assigned to KAI: • Rolling stock procurement • Operation and maintenance of

Aspect	Presidential Regulation 98/2015 2-Sep-15	Presidential Regulation 65/2016 29-Jul-16	Presidential Regulation 49/2017 3-May-17
		stock and infrastructure • Farebox collection	rolling stock and infrastructure • Farebox collection
Financing	• Government equity injection to ADHI	• Government equity injection to ADHI • Government equity injection to KAI	• Government equity injection to ADHI • Government equity injection to KAI • Foreign subsidiary loan agreement • Bond issuance or senior debt by KAI • KAI payment to ADHI
Funding	Not yet governed	Farebox (tariff not yet set)	• Farebox (tariff not yet set) • Government payment to KAI in form of subsidy or fiscal incentive (subsidy formula not yet set)
Other government support	• Rights to utilise alignment in existing toll-road by Ministry of Public Works and Housing • Revision to spatial planning documents by local governments and Ministry of	• Rights to utilise alignment in existing toll-road by Ministry of Public Works and Housing • Revision to spatial planning documents by local governments and Ministry of Spatial Planning and Land	• Rights to utilise alignment in existing toll-road by Ministry of Public Works and Housing • Revision to spatial planning documents by local governments and

Aspect	Presidential Regulation 98/2015 2-Sep-15	Presidential Regulation 65/2016 29-Jul-16	Presidential Regulation 49/2017 3-May-17
	Spatial Planning and Land • Rights to utilise land and air belonging to local governments	• Rights to utilise land and air belonging to local governments. • Multi-year construction contract approval by Ministry of Finance • Public Service Obligation subsidy from province of Jakarta	Ministry of Spatial Planning and Land • Rights to utilise land and air belonging to local governments. • Multi-year construction contract approval by Ministry of Finance. • Public Service Obligation subsidy from central government. Province of Jakarta may also chip in. • Guarantee for KAI bond issuance, if any.

Source: Collated by author.

The final project arrangement is as depicted in Figure 8. Oversight on the project is carried out by the Oversight Committee. The Ministry of Transportation serves as the project owner and coordinates with the numerous stakeholders, including the Ministry of State-Owned Enterprise (SOE) and the affected local governments. The contract is signed between the Ministry of Transportation with ADHI and KAI. ADHI's scope of work is limited to project design and construction, while KAI serves as the operator. KAI serves as a conduit for the GoI's capital injection to the project, making payments against ADHI's construction progress.

Throughout the project development course, the project finances have repeatedly changed due to changes in design and specification, which were often driven by political decisions. Cost estimates for the capital expenditures have changed from Rp23.8 trillion to Rp34 trillion, Rp26.7 trillion, Rp31 trillion, Rp29.9 trillion, and Rp22.8 trillion.[8] KAI obtained a Rp7.6 trillion capital injection to be leveraged with a Rp18.1 trillion syndicate loan to be repaid in 18 years. ADHI obtained an Rp1.4 trillion capital injection to be leveraged with a Rp2.8 trillion syndicate loan. Both ADHI and KAI have obtained the planned debt, with lenders stating that there is little fear of default due to an implicit guarantee from the GoI on the debt.[9] Despite this, ADHI still suffers from a liquidity issue with all the capital being mobilised for the project, at times running on a negative cash flow.[10] In the future, the GoI is also expected to subsidise the ticket fare later during the operation phase, with an estimated subsidy of half (Rp12,000) from the economic fare (Rp25,000).

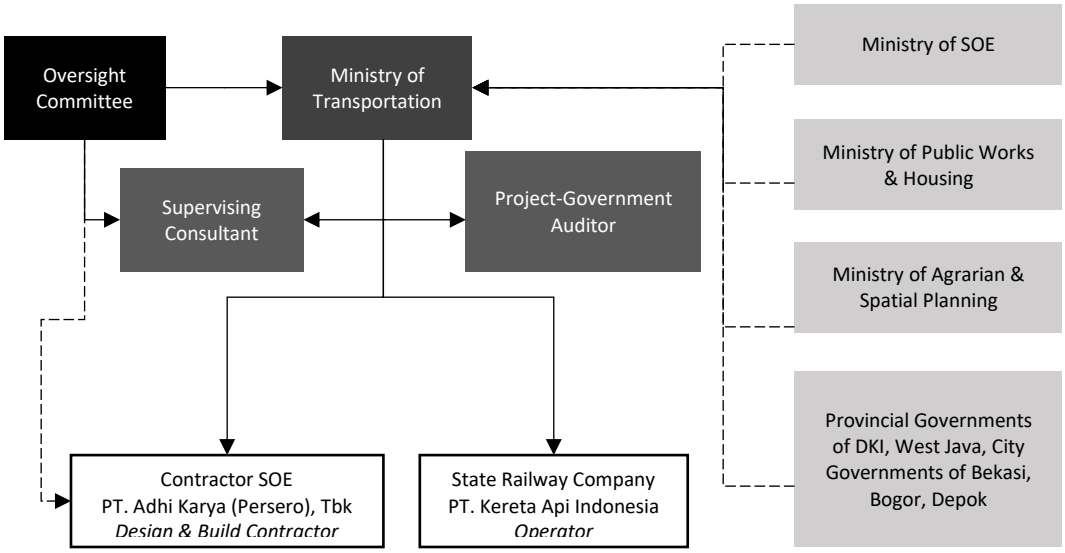
The project has experienced prolonged delays. The project is supposed to be constructed in two phases. The initial commercial operation date for Phase I was estimated to be 2018 before the event of the 2018 Asian Games in Jakarta. Yet, pervasive issues related to the details of the project finance set the Phase I Commercial Operation Date (COD) back to 2021 as of late 2019. Meanwhile, Phase II is yet to be started, despite originally being planned to start back in 2016.

[8] At the time of completion of this paper (November 2019), construction progress for Phase I stands at 65% and there is not yet a final cost estimate.

[9] https://finansial.bisnis.com/read/20190116/90/879283/proyek-lrt-molor-bagaimana-nasib-utang-bank-rp19-triliun

[10] https://katadata.co.id/berita/2019/08/21/kas-adhi-karya-minus-rp-25-triliun-akibat-proyek-lrt-jabodetabek

Figure 8. The LRT Jabodebek Project Governance Arrangement



Source: Constructed by author.

Indonesia: Preferential Treatment of PLN and the Poor Planning of the 35 GW Programme

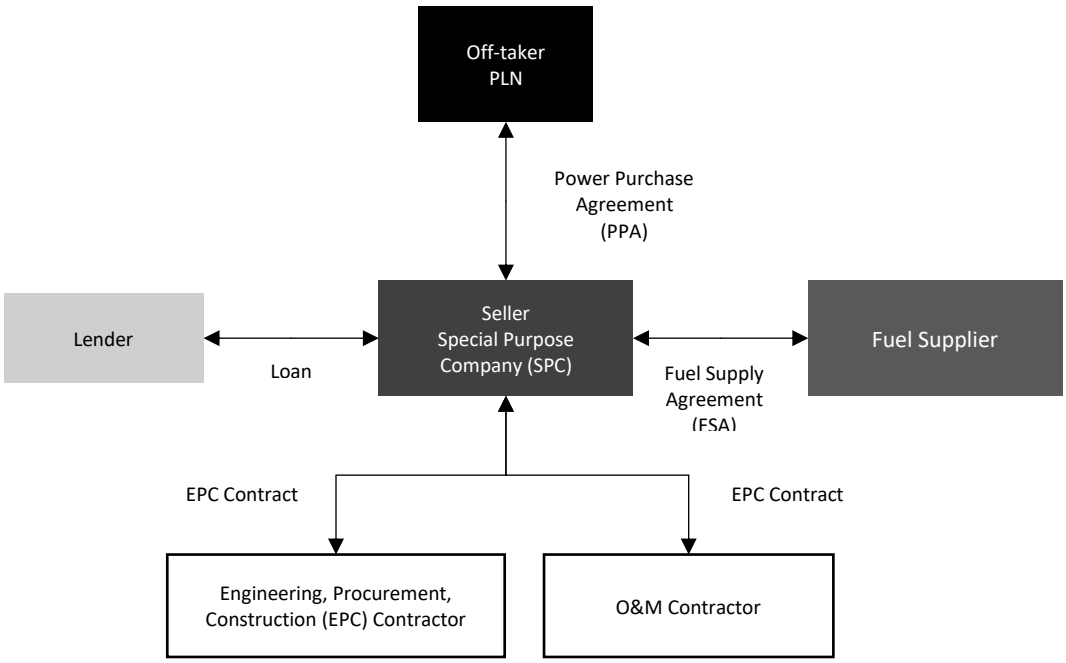
Perusahaan Listrik Negara (PLN) is Indonesia's only state-owned electricity company who by the constitution owns the sole right to generate, transmit, and distribute electricity within the country. As the sole distributor of electricity, PLN then sells electricity to end users with regulated tariffs, and the operational cost deficits are then reimbursed by the central government based on certain formulae, with different tariff structures for different segments of consumers. On the generation side, power plant procurement is carried out by PLN, with the limited authority of the Ministry of Energy and Mineral Resources (MoEMR) to review and authorise PLN-proposed long-term procurement plans. In exercising this, PLN may either choose to directly invest in power plants on their own or engage private sector parties who act as independent power producers (IPPs).

Private participation in the generation activities by independent power producers (IPPs) is needed as PLN lacks the capacity to undertake the construction, operation, and management of power plants with PLN as the sole buyer of the privately generated power. Private participation is barred in the other areas of business of transmission and distribution, although PLN is capitally constrained to invest in both areas. This is due to a rather strict interpretation of the Indonesian

constitution, which says that all major business activities impacting people's welfare should be controlled by the state. This effectively creates a dual monopoly-monopsony market in the power sector in Indonesia, which when combined with the weak regulatory capacities of the Ministry of Energy and Mineral Resources, results in sub-optimally regulated market inefficiencies.

Figure 9 depicts a typical Power Purchase Agreement (PPA) between PLN and IPPs, whereby the contract eliminates the demand risk for the private special purpose company (SPC) by structuring it based on capacity payments in a take-or-pay contract, meaning that regardless of the actual electricity demand or usage by end users, PLN will offtake the power generated at a certain minimum capacity.[11]

Figure 9. Typical Power Purchase Agreement between PLN and IPPs for Non-Geothermal Power Projects



Source: Constructed by author.

[11] This arrangement has been revised by the Ministry of Energy and Mineral Resource 10/2017, which introduces an additional deliver-or-pay clause for most categories of power plants and stipulates the minimum delivery capacity for IPPs subject to penalties for non-performance.

It should be noted that in Indonesia, the role of the System Operator (SO), who operates the transmission network and decides which power plant may supply the electricity network grid from time to time, is also carried out by PLN. In other countries, the SO's role is typically carried out by an independent party. This creates moral hazard to maximise the utilisation of and thus revenue for PLN-owned power plants, despite the lower rate of efficiency of PLN-owned coal-fired power plants. PLN also receives preferential treatment for the fuel usage of coal-fired power plants under their ownership and operation. The government imposes regulations on the Domestic Market Obligation (DMO) for Indonesian coal producers to supply 25% of their production to PLN power plants, with a price ceiling capped at US$70. This creates a saving for PLN when the global price rises above the price ceiling level.

Given the power imbalance between the private party and PLN, which is adding to the existing commercial risks, there was understandably hesitance from the private party to participate as IPPs in Indonesia. Thus IPPs, starting from those whose contracts were made under the Fast Track Program II (FTP II), were given access to the business viability guarantee from the Ministry of Finance (MoF) under MoF Regulation No. 173/2014, supposedly granted on a case-by-case basis. The MoF business viability guarantee takes the form of a letter to the IPP affirming the business viability of PLN.[12] This means that, if PLN fails to fulfil its obligations to the IPP, the government will step in. Termination and buy-out payments are also covered.

In May 2015, the Government of Indonesia unveiled an ambitious programme to develop 35,000 MW of installed capacity for power plants in the period 2015–2019, dubbed the 35GW programme.[13] The programme's central assumption was that the electricity demand is projected to grow at an average of 8.7% per year through to 2019 to fully address the country's electrification ratio of 84% at the

[12] The guarantee will be terminated if the IPP fails to achieve financial close (fully securing financing to cover the project investment cost) within 12 months of its issuance (24 months in the case of geothermal projects).

[13] Based on Presidential Regulation No. 4/2016 (as amended by Presidential Regulation No. 14/2017), FTP II projects that are rolled into the 35 GW programme and other 35 GW projects are also eligible for the MoF's business viability guarantee.

program's inception. Under the plan, a total of 109 power plants will be developed at the latest by 2019, with 35 power plants representing a capacity of 10,681 MW to be developed by PLN and the other 74 with a capacity of 25,904 MW to be developed by IPPs, subject to PLN's procurement process for IPPs.

Due to the unchecked authority of PLN in planning and procuring the power plants, there is a significant gap between the ambitious plan *vis-à-vis* the demand need and the available fiscal space to tackle the needed amount of revenue subsidy. The plan itself was not based on sound economic planning with robust sensitivity analysis. This means the 35 GW number is rather arbitrary and does not truly represent the country's future electricity demand where the actual economic growth trajectory is modest. Should the plan had continued in full scale, it would have created significant long-term liabilities to cover for the full capacity payment to the IPPs, which would have been idle since the actual demand is much lower. The 35GW programme eventually failed to be delivered fully, but not without collateral damage on the private sector's side, which had participated in the procurement process and sunk its capital.

Table 8. Breakdown of the Original 35 GW Programme

Region	PLN Power Generation (MW)	IPP Power Generation (MW)	Transmission (km)	Substations (MVA)
Sumatera	1,100	8,990	18,720	35,521
Java and Bali	5,000	13,697	9,186	66,263
Nusa Tenggara	670	0	2,347	1,410
Kalimantan	900	1,735	5,604	3,500
Sulawesi	2,000	1,470	5,276	4,390
Maluku	260	12	653	620
Papua	220	0	364	460

Source: Ministry of Energy and Mineral Resources.

As of early March 2018, the MoEMR claimed that around 4% of the power plants in the programme had started commercial operation, 48% were under construction, 35% had signed power purchase agreements with PLN but were yet to start construction, 10% were still conducting procurements, and the remaining 3% were still under the preparation process. This implied that at best, only around 20 GW of installed capacity was likely to be completed by the end of 2019. MoEMR later made a statement that 20 GW should be sufficient to address the country's electricity demand, dismissing the urgency to complete the project on time by its original target in 2019.

The 35 GW project was then officially scaled-down and delayed until 2024. The formal scale-down to the 35 GW programme is reflected in the 2018–2027 Electricity Supply Business Plan (*Rencana Umum Penyediaan Tenaga Listrik* – 2018 RUPTL). The 2018 RUPTL dramatically reduces both the demand forecasts and planned capacity targets. Changes were applied across-the-board with both large thermal coal- and gas-fired plants being dropped or postponed. There is also a reduction in the share of renewables. As of January 2019, only 8% of the 35 GW power plants has started operation.

The fiscal capacity issue to tackle excess capacity in the power sector has actually been a longstanding issue in Indonesia. In the 1990s, contingent liabilities arising from their implicit subsidies in the power sector actually materialised when the Indonesian rupiah exchange rate plummeted against the US dollar in the Asian financial crisis while demand slowed down. It was more severe in degree in part because of the then-worse procurement practice, where unsolicited projects lacking a scrutiny mechanism were common. This resulted in suboptimal contracts in which rates were comparably more expensive due to the absence of competition, and the Government of Indonesia became the ultimate payer for the payment shortfall of these US dollar-denominated take-or-pay contracts between PLN and private investors when the crisis struck (Mody in Polackova and Schick, 2002).

Viet Nam's Water Sector: Concessional Financing

Viet Nam has accomplished remarkable improvements in the development of its water sector since 1990. Coverage of its population with access to a drinking water source rose from 33% in 1990 to 95% in urban areas and 94% in rural areas by 2012 (Trujilo et al., 2015). Despite its significant success, several challenges remain, such as the disparity of access between rural and urban areas, the reliability and quality of the service, and the financial sustainability of investment and operations. The financial sustainability of water sector investment is crucial as it heavily relied on foreign aid and subsidies due to the under-pricing of the service (ADB, 2009). Even though the tariff was already set to cover the operational costs of the water utilities, it did not cover the needs for new investment. In addition, Viet Nam's water sector faces challenges Non-Revenue Water (NRW) issue which is about 35% of the total production (Trujilo et. at., 2015). The challenge of subsidies for the water sector in Viet Nam is further amplified by its nature, which is implicit and non-transparent.

The water sector in Viet Nam has been undergoing a reform along with the Doi Moi economic reforms that began in 1986. There are three focuses of water sector development and policies in Viet Nam. First, the responsibility for the water sector is devolved to local governments. Intergovernmental framework reforms towards decentralisation also affected the water sector. The national government is currently responsible for policymaking, while provincial governments own and manage water utilities (WSP, 2014). Second, Viet Nam has been pursuing a policy shift towards commercialisation, particularly in that urban areas that may differ from the trajectory of policy reform in the rural water sector. Greater involvement of the private sector, through PPPs or partial privatisation, is encouraged. Furthermore, the Government of Viet Nam has been striving to raise the level of water utilities to access commercial financing, which has previously been donor-funded through concessional loans. Third, Viet Nam has been reforming its water sector to emphasise improved cost recovery through user charges and to reduce the need for subsidies (Trujilo et al., 2015).

Prior to the initiative of policy shifting towards commercialisation, investments made by water utilities were mostly financed by overseas development assistance (ODA) loans through the on-lending scheme. The Ministry of Finance sets the interest rate below the commercial interest rate charged by financial institutions to the water utilities in addition to having a more flexible grace period and longer maturity. By providing such an arrangement to the water utilities, the Ministry of Finance of Viet Nam bears more risk for the investment. By providing financing with the abovementioned arrangement, the Ministry of Finance clearly provides an implicit subsidy to the water utilities (Kingdom, Baeumler, and Guzman, 2012).

An implicit subsidy in the case of Viet Nam is crucial for public scrutiny, not only because of its significant amount[14] but also because of how it translates to more effective policies for water sector development. From the private sector's point of view, implicit subsidies could potentially induce moral hazards to the utilities since they provide 'generous' access to discounted financing, which in the future may be limited.

From the public sector's point of view, implicit subsidies are likely to reduce the effectiveness of public resources to achieve developmental outcomes, in the case of Viet Nam, in which the disparity amongst various groups is an issue. Furthermore, Viet Nam also provides a sort of guarantee to water utilities through the Viet Nam Development Bank. This guarantee, as noted by ADB (2016), may involve a significant implicit subsidy and a corresponding liability to the government. The issue is further challenged by the fact that there are various issues of governance at the macroeconomic level in Viet Nam, such as a low level of transparency for granting the guarantees and significant off-budget expenditure and commitments. Without a robust monitoring mechanism, the risks associated with guarantees – an implicit subsidy in which the amount is proportional to the loan guaranteed, and further channelled into contingent liabilities – will trigger unplanned fiscal expenditure in the event of defaults.

[14] It is estimated that the amount of the subsidy could be as high as 66% of the total concessional loan value provided to the water utilities in Viet Nam (Kingdom, Baeumler, and Guzman, 2012).

5. Concluding Remarks

We have discussed the concept of implicit subsidies and how they may create contingent liabilities for the public sector in the context of infrastructure projects. We have also discussed how the prevalence and severity may vary in different countries and will be presumably more frequent in systems with less-developed governance and where there is less transparency.

An integrated public investment management framework may thus be an avenue worth considering to improve infrastructure project governance and decrease inefficient liabilities to deliver a similar level of service to the public. Furthermore, it will also be crucial to increase fiscal transparency through the monitoring and measurement of public sector performance to ensure that the options taken are in the best interests and aligned to the public welfare agenda. Fiscal transparency is key for better risk identification and monitoring to decrease implicit subsidies and curb their negative effects, as well as to increase the awareness of the potential contingent liabilities.

Quantification of an implicit subsidy and its impact on contingent liabilities, where possible, is crucial in assessing comprehensive fiscal risk. An implicit subsidy is quantified to ensure its accountability and effectiveness for achieving public policy objectives. If possible, the amount of the implicit subsidy should be disclosed. Moreover, the quantification of contingent liabilities, as a consequence of an implicit subsidy, is required as part of risk management and effective fiscal risk monitoring.

To manage contingent liabilities as consequences of the implicit subsidy, a clear regulatory framework is absolutely crucial. Borrowing from the subnational financing domain, as discussed by Liu and Waibel (2010), the framework should consist of ex-ante regulation and an ex-post insolvency mechanism. For an existing implicit subsidy and its contingent liabilities, a definite and clear framework for an ex-post insolvency mechanism will be beneficial for predictable fiscal adjustments when the liabilities materialise. For future infrastructure projects, ex-ante regulation will safeguard the project preparation by limiting and allocating risks, wherever possible.

From the case studies, it is also apparent that the government may have preferential treatment for SOEs. Ideally, the public sector must maintain competitive neutrality to minimise the loss of efficiency in the economy caused by this preferential treatment. Competitive neutrality is the recognition that significant government business activities that are in competition with the private sector should not have a competitive advantage or disadvantage simply by virtue of government ownership and control.

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