

**The role of state-owned enterprises in
achieving economic transformation and
inclusive growth**

**Paper 2/4: Framework for the suitability of
state-owned enterprises**

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EXECUTIVE SUMMARY

According to the expectations of the National Development Plan (NDP) the purpose of SOEs is to drive economic development (for example, by providing cost effective energy and facilitating trade), as well as to take up a socio-economic developmental mandate in ensuring the provision of minimum basic goods and services (for example, water and sanitation, education, healthcare, electricity and transport).

It is common cause that SOEs will continue to play a prominent and essential role in the development of the South African economy. That said, SOEs can also create material operational, financial and fiscal risks for the government as shareholder. The recent South African experience has revealed a number of key SOEs to be costly, inefficient and poorly managed. For example, the government has recently provided significant bail outs and substantial debt guarantees to Eskom, Denel, SANRAL, SAA and the SABC which on all the evidence nevertheless continue to underperform or meet financial obligations.¹ This puts additional pressure on financing and service delivery that underpin growth and development. The collective implication of government bailouts, rising debt, and credit rating downgrades is the stunting of economic growth and socio-economic development.

This study focuses on sample of three SOEs, namely, Transnet, Eskom and PRASA.

The recent concerns raises two questions for policymakers to reconsider:

- Firstly, under what circumstances is government intervention in any given market appropriate; and
- Second, given the potential risks, when specifically, is a SOE, as opposed to another form of state intervention, suitable?

The purpose of this report is to develop an analytical framework that will assist policymakers to answer these two questions. This framework is applied to the electricity, freight rail and consumer rail sectors, with a view to testing the framework.

The framework will inform policymakers when they are making the following decisions about an SOE: *in any given circumstances, is an SOE, another means of public intervention, or another means of private intervention, likely to be optimal for increasing social welfare for a given economic activity.*

The paper begins by unpacking the conditions that justify a form of government intervention. Economic theory indicates that government intervention is typically justifiable *if it is likely to improve aggregate social welfare by preventing market failure.* The paper finds that when market failure is likely to occur in an unregulated private market, a form of government intervention has the potential to improve aggregate social welfare. The market failures identified are: (i) a shortage of funding in the private sector; (ii) when the good in question is a public good; (iii) where there is weak market competition; (iv) where there are significant (positive and negative) externalities to be gained or suffered; and (v) when there are other consideration of equity or fairness in play.

¹ Report ¼ of this series, a performance evaluation, establishes the clear evidence base of underperformance against the role establish in the NDP for ESKOM, Transnet and PRASA.

In Section 3 the paper considers various forms of government intervention to adjust to these market failures. It first identifies the various means of government intervention available being (from least interventionist to most interventionist): taxes/subsidies, regulation, indirect government provision (private sector contracting) and direct government provision (including establishing SOE in new industry or deciding to retain an SOE in an existing industry). The paper establishes that the appropriate intervention must be assessed on a case-by-case basis, after consideration of the following:

- **The nature and extent of the market failure:** If the market failure is modest, then lighter forms of government intervention are typically more appropriate. Subsidies/taxes and regulation can address issues of competition and externalities. However, if the market failures are pervasive, complex and severe in nature, and it would be hard to solve with regulation, subsidy or taxes then government provision including SOEs are more effective.
- **The potential costs/hurdles of the different means of government intervention:** Targeted taxes/subsidies and regulation are less costly to the state than indirect and direct government provision. However, high regulation, contracting, design or enforcement costs may result in direct government provision being more suitable. These would need to be netted with the organisational costs and performance risks related to establishing an SOE.
- **In the case of SOE provision, whether the decision involves continuing an existing SOE or establishing a new one.** When considering the establishment of a new SOE to address market failure, policymakers should first be confident that lighter government remedies such as taxes/subsidies and regulation will not be sufficient to solve the market failure. *Only if these options are unworkable*, should indirect and direct government provision should be considered.
- However, for existing SOEs, the decision whether to implement new interventions and reforms, should be determined *only by the performance of the existing SOE*. If significant performance concerns emerge then consideration should first be given to remedies that come with lowest transitional and transactional costs but also have sufficient impact in terms of solving the identified concerns.

In Section 4 the paper considers the risks associated with SOEs. While SOEs may be desirable and suitable in the provision of identified goods to address market failures, they do create substantial fiscal, governance, and operational performance risks for the government.² The presence of these risks has the following implications for the suitability framework:

- The full spectrum of government intervention options must be considered – especially those interventions that are less risky and costly like imposition of taxes, granting of subsidies and installation of regulation.
- Carefully designed monitoring, accountability and enforcement structures are required to discipline SOEs' operational performance, governance performance, financial sustainability, and fiscal responsibility.³
- A framework assessing the suitability of existing SOEs should explicitly assess whether these risks are being manifested and to what degree.

² Importantly, these risks do not imply SOEs should simply be abandoned in favour of the private sector. Indeed, many of the risks faced by SOEs are also faced large private-sector firms. See United Nations, *State-owned enterprise reform*, 2007.

³ Report 1/4 in this series establishes such a performance framework for Eskom, Transnet and PRASA.

- If there is evidence that an SOE is failing against its core performance mandate, then first non-structural performance improvement reforms (for example replacing the Board, changing incentives, providing technical assistance) and then structural reforms (using a different form of government intervention, private intervention, or a combination of both) must be identified and implemented to improve overall social welfare.

In Section 5 the paper provides a framework for assessing the suitability of SOEs. It begins with the suitability assessment of establishing a SOE for new economic activities (or economic activities which are currently provided by the private sector where a SOE does not exist. This is followed by the framework for assessing *existing* SOEs (this is relevant for the selected case study SOEs). The key principles that emerge in designing these suitability frameworks are as follows:

- The crux of the suitability analysis for existing SOEs depends on an assessment of their performance against the core mandate of the SOE.
- Social welfare maximisation should be the main objective of SOEs and not profit maximisation.⁴
- New SOEs should be not be implemented over any economic activity when the private sector is efficient and competitive in that activity.
- SOEs should be limited to addressing market failures and improving social welfare in strategically important industries.
- SOEs are more prone to operational and financial consequences to government than private firms –there should be a preference for first exploring less costly forms of government interventions like enhanced regulation and regulatory power, the imposition of taxes and use of subsidies and other incentives, before considering the establishment of an SOE.
- If a SOE is deemed suitable to address market failures the assessment should include the evaluation of market provision in certain parts of the value of chain, if not in the whole value chain.
- *If performance is failing chronically against objective standards, the SOE cannot be deemed suitable in its current form.*
- In the face of persistent systemic failure, after various non-structural reforms have been tried structural reforms i.e. increasing private sector participation must be considered.

The suitability assessment is not static. As technology, market demands, and external environment change, so market structure can change and make previously uncompetitive markets competitive. Thus government should repeatedly being reviewing the performance of SOEs and the changing structure of the market in question to interrogate whether an SOE in that market is still suitable.

Finally, in Section 6 the suitability framework for existing SOEs is tested at a high level against Eskom, Transnet and PRASA as examples. The testing is to improve the quality of the general framework, not to come to specific recommendations for the reform of ESKOM, Transnet or PRASA, which would be mammoth undertakings each their own right. Rather, we provide specific examples with respect to the *types of economic reforms* that may address some of the suitability concerns that are identified for these three SOEs. These examples and the options for reform are intended to generate debate in a climate of reform, informed by economic theory.

⁴ An SOE must also be well-governed and financially sustainable in order to fulfil its operational mandate.

1. INTRODUCTION

1.1. CONTEXTUAL BACKGROUND

This document is the second of four reports for a study on SOEs in South Africa, prepared for the National Planning Commission and the African Development Bank.

The National Planning Commission (NPC, the Commission) was established in 2010 to take an independent and critical view of South Africa's development and to produce a plan to improve planning, budgeting and co-ordination of economic development.

In developing the plan, the NPC was required to take a 'broad, cross-cutting, independent and critical view of South Africa' as it determined the strategic path for development. The vision and strategic plan developed by the Commission is the National Development Plan, 2030 (the NDP).

State-Owned Enterprises ("SOEs") make a significant contribution to the economy (approximately 8.5% of GDP)⁵ and employment (>250 000 employees). The NDP establishes the SOEs as primary tools for implementing the developmental policy imperatives of the State. According to the NDP the purpose of SOEs is to be the engine of economic development (e.g. providing cost-effective energy and facilitating trade) and to achieve a developmental mandate in ensuring the provision of minimum basic goods and services (e.g. water and sanitation, education, healthcare, electricity and transport).

Thus, the existence, operational performance and governance of SOEs is highly relevant to the achievement of the NDP.

The role of the Commission is to oversee the implementation of the NDP by providing research and policy reform recommendations to government on issues that impact on the realisation of the NDP. As the first five-year NDP planning cycle (2014-2019) draws to a close, it is a good time to take stock of the performance and purpose of SOEs in achieving the NDP's long-term goals.

The African Development Bank (the Bank) through the Southern Africa Regional and Business Delivery Office in Pretoria is supporting the Commission to undertake the study.

⁵ Sunita, K. 2018. *Corporate governance in South African state-owned enterprises: background note for the South Africa systematic country diagnostic (English)*. Washington, D.C.: World Bank Group.

1.2. THE PURPOSE OF THE STUDY

The ultimate purpose of the study is to better align the existence, structure and performance of SOEs to support government's long-term development strategy.

Specifically, the NPC and AfDB have commissioned four research papers:

- **Paper 1: Review of performance against NDP:** The purpose of the first paper is to provide an independent and evidence-based assessment of the performance of SOEs against the outcomes sought in the NDP in three areas: electricity (performance of ESKOM); rail logistics (performance of Transnet) and commuter rail (performance of the Passenger Rail Agency of South Africa (PRASA)); the paper constructs a performance framework for assessing these three SOEs against the explicit and implicit goals set out for them in the NDP;
- **Paper 2: Market suitability analysis:** The second paper explores the market structure and socio-economic conditions under which state ownership is appropriate and when less appropriate and builds an analytical framework for further exploration. It too uses electricity, freight logistics and commuter rail as test cases, providing a view of alternative options (**this report**);
- **Paper 3: Institutional governance review:** The third paper considers appropriate institutional governance arrangements between the organs of state and SOEs, again focusing on electricity, freight logistics and commuter rail to extract improvements;
- **Paper 4: Synthesis paper:** The final paper presents learnings from the first three papers and synthesised principles and policy recommendations for SOEs.

1.3. ABOUT THIS REPORT

This report develops an analytical framework for policymakers to critically review the suitability of new and existing SOEs to deliver essential economic activities. This framework is tested by application to the electricity, freight rail and consumer rail sectors.

This meaningful presence of SOEs in South Africa is not unique. SOEs play a prominent role in most other emerging and developed countries,⁶ with the prevalence of SOEs increasing globally since the millennium. For example, the number of SOEs among the world's largest companies (companies listed in the Fortune Global 500) increased from 9.8% to 22.8% between 2005 to 2014.⁷ There has also been expansion in presence of SOEs in China and Middle Eastern countries.⁸ Developed countries have not been immune to this trend: since the financial crisis of 2008/09, the US and UK government played an increasingly custodian role, ensuring the stability and survival of important industries.⁹ This type of government intervention was generally intended to be temporary in nature.

On the other hand, the prominence of SOEs in some African countries is falling. Of the four largest economies in Africa by GDP - South Africa, Algeria, Nigeria and Egypt – three have undertaken extensive privatisation efforts of SOEs. Between 1995 and 2007, following legislative reform, about

⁶ For example, in OECD countries SOEs are valued at over USD 2.4 trillion and employ more than 9.2 million people.

⁷ Kwiatkowski, G. & Augustynowicz, P. 2015. *State-Owned Enterprises in the Global Economy – Analysis based on Fortune Global 500 List*. Available online: <http://www.toknowpress.net/ISBN/978-961-6914-13-0/papers/ML15-353.pdf> [Last accessed: 1 October 2019].

⁸ Benavides, X. 2014, *Economic Development and State-owned Enterprises*. Available online:

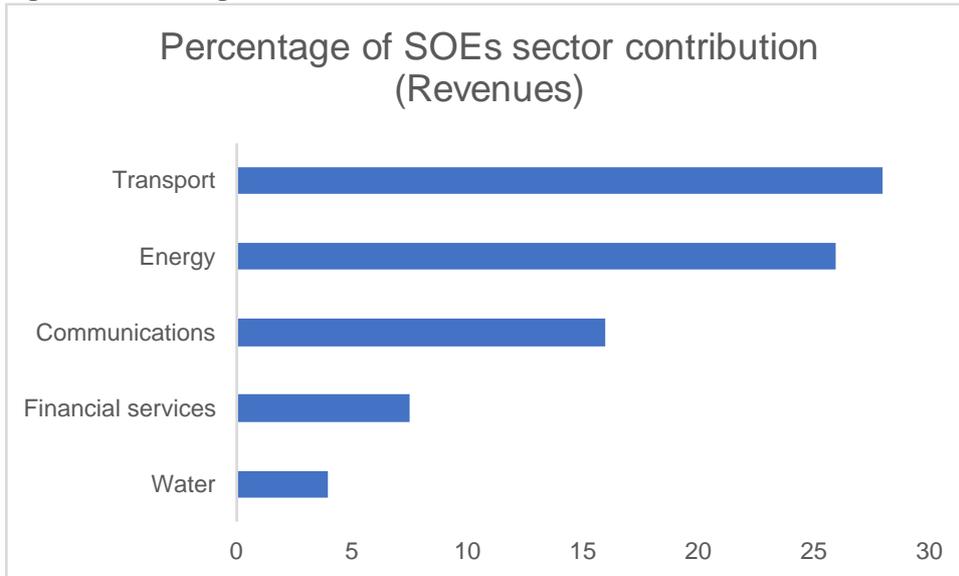
https://law.yale.edu/system/files/documents/pdf/SELA14_Benavides_CV_Eng.pdf [Last accessed: 21 July 2019].

⁹ World Bank. 2014. *Corporate Governance of State-Owned Enterprises*, p.7.

one third of Algerian SOEs were privatised.¹⁰ Egypt has been undertaking privatisation efforts of state-owned firms since 1992, since when 60% of earmarked SOEs have been privatised; all public enterprises were scheduled to be privatised by 2002.¹¹ Nigeria has established the Bureau of Public Enterprises, tasked with privatising public enterprises, as well as undertaking sector reforms and liberalising key economic sectors.¹² Efforts to privatise SOEs are ongoing, however they still play a major role in these countries. In Algeria for example, two thirds of the economy remains state-owned.¹³

SOEs contribute to various major sectors in the South African economy, particularly transport and energy as seen in the figure below:

Figure 1: Percentage of SOEs sector contribution to revenues



Source: Presidential Review Committee on State-Owned Entities, 2010, p.51

Whilst they have a firm place in South Africa’s development trajectory, SOEs come with significant operational, financial and fiscal risks for government. Undeniably, the recent South African experience has revealed that a number of SOEs have been costly, inefficient and poorly managed.

Box 1: Overview of the current state of SOEs in South Africa

A number of SOEs in South Africa have raised concern with respect to performance and financial standing. The Department of Public Enterprise (DPE) has recently undertaken reform efforts in several SOEs: for example, Transnet, Denel and PRASA have recently undergone an overhaul of leadership.

Eskom is well-publicised to be technically insolvent and struggling to maintain operational stability. There have been major cost overruns in the construction of the Medupi and Kusile power stations, and there are severe issues of governance related to systemic corruption, malfeasance and fraud.¹⁴ In February 2019, the state committed to inject R23 billion a year into Eskom for the next ten years.¹⁵

¹⁰ OECD, 2018, “Competition Law and State-Owned Enterprises – Contribution from Algeria”, p.5

¹¹ OECD, 2006, “Egypt National Investment Reform Agenda Workshop”, p.2

¹² BPE function, 2018, available <https://bpe.gov.ng/about/history/>

¹³ IBP Inc, 2016, “Algeria Business and Investment Opportunities Yearbook Volume 1: Strategic, Practical Information and Opportunities”, p.193

¹⁴ DPE presentation “Briefing by the Department of Public Enterprises”, February 2019, available: <https://www.dpe.gov.za/newsroom/Documents/DPE%20Presentation%20to%20the%20Portfolio%20Committee%20of%20Public%20Enterprises%2013%20Feb2019.pdf>

¹⁵ Mboweni, T., 2019. Budget Speech, p.9

South African Airways, the South African National Roads Agency, the South African Post Office and South African Airways Express all received necessary government financial support ranging from R1.2 billion to R5.8 billion during 2018, all earmarked to fund debt repayments.¹⁶

Sustained financial support required by SOEs has exerted more pressure on the fiscus and the widespread unsatisfactory performance of SOEs makes it clear that a reform strategy is needed and legitimate.

To establish this factually, Report 1 in this series assessed the performance of three SOEs (Transnet, Eskom and PRASA) against the roles delegated to them by the NDP in freight logistics infrastructure and services, electricity supply, and commuter and passenger rail transport, respectively. After putting each of these entities through a rigorous performance framework, the resulting evidence is clear that *all three are failing to achieve the core economic mandate assigned to them in the NDP*. They all display indicators of poor governance and financial stress.

Such failure contributes to sluggish economic growth and alarming growth in government debt. Even more troubling is the adverse impact these failed SOEs have had on the most vulnerable members of society. An example is the poor performance of PRASA. It has been unable to provide affordable public transport and the private sector has not stepped in as needed. This has led to many low-income South Africans having to turn to alternative forms of public transport such as buses and taxis, which do not have the same reach as train network and are usually more expensive, negatively impacting the disposable income of these individuals.

The recent South African SOE experience raises two questions with respect to the role and suitability of SOEs in the future. These questions are

1. Under what circumstances is government intervention or ongoing intervention in a market likely to be suitable; and
2. Given the substantial potential risks, when specifically, is a SOE, as opposed to other form of state intervention, suitable?

This chapter answers these two questions by translating the relevant economics into an analytical framework for policy makers to use to assess the suitability of new and existing SOEs. It takes into account South Africa's unique socioeconomic challenges and objectives – in doing so, *the framework is rooted in the objective of maximising social welfare*.¹⁷

The framework will inform policymakers when they are making the following decisions about an SOE: *in any given circumstances, is an SOE, or another means of public intervention, or another means of private intervention, likely to be optimal for increasing social welfare for a given economic activity*.

We consider the suitability of SOEs for the overall economic activity in question (e.g. supply of electricity), as well as the parts of the value chain (e.g. generation, transmission and distribution). Different parts of the value chain (or different business units) may exhibit distinct economic characteristics and have varying potential for competitive market provision.

These differences often imply the most optimal solution for society requires a mix of economic ownership models.

¹⁶ National Treasury, Annual Performance Plan 2019/2020, p.3

¹⁷ This Chapter does not aim to provide a detailed synopsis of all the economic literature dealing with SOEs. However, we have not excluded any literature related to SOEs which would undermine the developed framework.

Once developed, the suitability framework is applied at a high level to Eskom (electricity), Transnet (freight rail, ports and pipelines), and PRASA (commuter rail). An important observation, is that although SOEs may be justified *ex-ante* following the application of the robust economic principles developed in this report – – *the suitability of existing SOEs ultimately depends on how their performance fares relative to their core mandate*. If significant and on-going concerns with performance emerge, then the SOE is no longer suitable (at least in its current structure). *Government should then move quickly to make reforms to improve social welfare*.

That said, economic reform is complex, costly and time consuming, particularly when considering extensive structural changes to pre-existing state-owned assets. This complexity arises because of inherent political tensions in reform as well as legacy operational, financial and governance deficiencies that can create transaction costs for a transfer to private interests that are prohibitive. In addition, the strength of management and the organisational culture within these organisations will often be a determining factor whether non-structural and structural economic reforms are successful.

An analytical framework cannot solve all of these contingencies. However, a framework can provide is a litmus test for the suitability of SOEs and a view of the various paths to economic reform in the event that the SOE is consistently underperforming. The debate with respect to reforming existing SOEs that are deemed unsuitable should not centre on the ideological distraction of nationalisation versus full privatisation, which also typically comes with high transaction and transitional costs. ***Rather the focus should be on clearly defining and prioritising the key concerns related to each SOE and then identifying the least costly (and time-consuming) interventions to effectively meet these concerns. Often this will require a combination of State and private sector interventions.***

This approach does not however rule out wholesale privatisation as a necessary option; this may very well be necessary when government can no longer fund a given industry. But importantly, ***in this report full privatisation is not the starting point for improving the performance of existing SOEs.***

The report is structured as follows.

- We begin by **assessing the market conditions that may justify government intervention**. The economic justification for government intervention is a necessary condition for SOEs to be deemed appropriate.
- Second, we **assess the different forms of government intervention** and when SOEs are likely to be the most suitable form.
- Third, we **highlight some of the potential costs and risks related to SOEs** as this has a bearing on the suitability analysis, given actual performance is a particularly important consideration for existing SOEs.
- Fourth, the **framework for new and existing SOEs is then presented** which draws from the discussion and analysis set out in the first three sections.
- Finally, the **framework is applied at a high level to Eskom, Transnet and PRASA**. This high-level application is not intended to provide firm conclusions regarding the restructuring of these SOEs. However, we do provide specific examples with respect to the types of economic reforms that may address some of the suitability concerns that are identified for the three SOEs. These examples are intended to provide examples in a climate of needed reform.

2. MARKET CONDITIONS THAT JUSTIFY GOVERNMENT INTERVENTION

From an economic perspective, a new or existing SOE can only be suitable if government intervention in that part of the economy is justifiable. If not justified then scarce economic resources are being wasted on that activity as these resources might be best served in addressing other developmental priorities.

Economic theory indicates that government intervention is typically justifiable if it is likely to improve social welfare.¹⁸ An improvement in social welfare occurs when individuals in society are made better off without making others significantly worse off.¹⁹ The question is under which conditions is government intervention likely to improve social welfare?

The starting point is acknowledging that a competitive private sector with only the necessary levels of government intervention can result in significant economic benefits for society. The provision of a good or service by the market has the potential to a) produce an optimal mix of goods, b) allocate resources to the most productive use, and c) to produce goods efficiently.²⁰ When the private sector operates efficiently these benefits come at limited costs for society and the State. In well-functioning and competitive private markets, government intervention including SOEs would be hard to justify on welfare grounds. Admittedly, markets do not always function efficiently, and at least the following conditions must be in place for a market to maximise social welfare without direct government intervention.

1. **Access to financing condition:** First, there should be no private financing or access to capital constraints preventing the private creation of new industries, or the continuation of important existing industries.
2. **The private good condition:** Entrepreneurs should have a profit motive to provide the good in the private sector.
3. **The competitive market condition:** There must be sufficient competition in the market that results in competitive pricing and output.
4. **The externality condition:** There must be no significant additional costs or benefits that accrue to other members of society following a private transaction between a buyer and seller of that good, or in the creation of that good.
5. **The equity condition:** There should be no other significant distributional concerns – even in efficient and competitive markets – this typically relates to the sufficient provision of minimum basic goods and services

In reality, these conditions are not always present, and where they are not a market failure will result. Market failure means provision of a given good by private means will fail to maximise social welfare. It

¹⁸ Putniņš, T. J. 2015. Economics of State-Owned Enterprises. *International Journal of Public Administration*, 38 (11), pp. 815-832.

¹⁹ This concept is also known as Pareto efficiency. An economy is Pareto efficient if it is not possible to make at least one person better off without making someone else worse off.

²⁰ Griffiths, A., and Wall, S. 2000. *Intermediate Microeconomics: theory and application*, 2nd edn. Essex: Pearson Education, pp. 246-257.

is widely recognised in economic theory that market failures do occur and can result in severely detrimental impacts for economic development. Where this happens, there is scope for government intervention to improve social welfare. Such market failures are assessed in more detail below.

2.1. MARKET FAILURE 1: SHORTAGE OF FUNDING IN THE PRIVATE SECTOR

The development of new industries is an important source of economic growth.²¹ Opportunities to develop new industries can emerge as result of new comparative advantages, new sources of demand, or to address specific industrial policy objectives. Market failure in this context can occur when potentially new and beneficial industries are not developed by the private sector because private capital is either insufficient or too risk-averse. When this occurs, the outcome is known as *missing goods* (in that goods that would otherwise enhance social welfare are “missing” because of a funding constraint).²²

The absence of the private sector in new industries is typically because of with risk and uncertainty. This includes uncertainty regarding the feasibility of the new industry; an initial shortage of expertise and skills; an uncertain policy framework; and undefined or lumpy start-up costs. An example is the initial development of large-scale network infrastructure like rail networks and electricity transmission lines. These investments require immense fixed cost commitments and a large part of the initial investment is made towards sunk long-lived assets, which require a lengthy period of operation before generating returns

As a result of this risk and uncertainty, private investors may not always have access to funding; or they may simply not have a sufficient incentive to invest. This can be the result of information asymmetries in private financing, whereby private financiers are not in position to adequately assess the potential of a new investment or where the market actors must first be educated of the opportunity and the market created.²³ The extent of risk aversion may also be more robust during economic downturns just when new investment is needed for economic recovery.

Furthermore, as discussed in more detail below, the underdevelopment of industries may be especially prevalent with respect to goods that yield significant social benefits where there is no line of sight to private returns. An example would be the development and expansion of public roads, whereby absent a tolling arrangement it would be difficult for private investors to directly profit from additional road users.

When the private sector is unable or unwilling to fund desirable new investments, government intervention has the potential to improve social welfare²⁴ by establishing an SOE being the first entrant in the new industry. In doing so the SOE has the potential to absorb some of the initial risk and uncertainty, and provide the market with proof of concept. This can reduce informational asymmetries and create valuable informational spillovers that will be valuable for future entrants. The intervention does not necessarily have to be long-term, in the event that sufficient private sector investment and competition is crowded in.

²¹ Balbuena, S. 2014, State-owned Enterprises in Southern Africa: A Stocktaking of Reforms and Challenges. *OECD Corporate Governance Working Papers No. 13*.

²² This may include lack of an appropriate regulatory framework for private sector participation but in this section we focus on funding.

²³ Putniņš, T. J. 2015. Economics of State-Owned Enterprises. *International Journal of Public Administration*, 38 (11), p. 822.

²⁴ Benavides, X. 2014, *Economic Development and State-owned Enterprises*. Available online: https://law.yale.edu/system/files/documents/pdf/SELA14_Benavides_CV_Eng.pdf [Last accessed: 21 July 2019].

Alternatively, the government can provide a policy framework, information, funding, tax cuts or subsidies to incentivise entry by the private sector. Yet investors are still likely to require positive expectations regarding the long run returns related to these investments.

An equally important consideration applies to existing industries that are already owned or largely financed by government. The private sector may not be willing to invest in these existing economic activities simply because they are not profitable or are associated with too much risk. In these cases, government intervention can be critical, particularly if it relates to the provision of basic goods and services. An example is the provision of public transport, which is discussed in more detail later when assessing PRASA.

2.2. MARKET FAILURE 2: PUBLIC GOODS

A second market failure can occur when the private sector is tasked with the provision of public goods. It is generally accepted that public goods (or mixed goods that have a significant public good dimension) will be undersupplied or not supplied at all in the private sector. This is because of the inherent nature of public goods which are characterised by *non-rivalry* and *non-excludability* in consumption which do not mix well with competitive profit-making. For instance, Denel, the state-owned arms firm, manufactures defence equipment for the South African National Defence Force, providing a public good (national defence).²⁵

Non-rivalry means that the benefits of consumption enjoyed by an individual is not hampered or reduced when another individual “consumes” or enjoys that same good. National defence is an example of a nonrival good because the benefit one person receives does not preclude any number of other individuals from enjoying the benefits of national security.

Non excludability means an individual cannot be prevented from consuming a good or service, even if another individual is already enjoying the benefits of that good. For example, public radio stations are non-excludable as additional listeners are not precluded by existing listeners from tuning in and listening to the broadcast.

The opposite of public good is a private good which is rival and excludable in nature. For example, when a consumer purchases a new car, other consumers are prevented from purchasing that specific new car and enjoying its benefits. In that case, there is a clear profit motive for the private sector to provide an additional unit of that good.

Given these attributes, public goods would only be provided by the private sector for free. This is unlikely in the face of a profit motive and there will be a market failure, even though the provision of that good would promote social welfare. Other examples of public goods include that would be underprovided by the private sector are law enforcement, sewerage systems, refugee collection and public parks.

By contrast, government intervention can ensure sufficient provision of public goods because profit maximisation is not the main objective of intervention as opposed to the maximisation of social welfare. The main challenge in providing public goods is understanding the efficient quantity to provide, which relies on the government’s ability to access sufficient information on the demand for the subject good. This can be challenging in the absence of a pre-existing market to test such outcomes. Such lack of information on demand can result in allocative inefficiencies, or put differently, the under-or over-provision of the public good in question, which will have a direct cost on society.

²⁵ Incidentally, Denel recently received a cash injection of R1.8bn from National Treasury due to insufficient liquidity that resulted Denel being unable to pay suppliers and employee salaries in a timely manner.

To illustrate the difficulties in achieving allocative efficiency, consider government's provision of free public healthcare, the rationale for which includes the benefits of a healthy society and the knock-on benefits of higher productivity, both of which are public goods. The amount that the government should spend in expanding the quantity of public healthcare and lowering prices relative to the free market levels depends on the reach of private healthcare and the value of having a healthier and more productive society, as well as the number of individuals who will enjoy these benefits. These outcomes are difficult to measure against the costs of provision. Nevertheless, this over- or under-shooting is still likely to still produce better results for society than relying on private sector for provision of public goods.

Some goods can exhibit characteristics of both private and public goods. These are called *mixed goods*. Some degree of government intervention may still be beneficial for social welfare for mixed goods. The health industry is an example, where governments tend to provide some form of basic healthcare at no cost or at below market prices (i.e. producing the private good *medical treatment*) but also clearly contributing to the public good of social equality and general well-being.²⁶

2.3. MARKET FAILURE 3: LACK OF COMPETITION (MONOPOLIES)

Competition is important to achieve positive market outcomes. Competition results in downward pressure on prices, more efficient production, more productive allocation of resources,²⁷ and incentivises competitors to improve the quality of products and services. The introduction of competition reduces the ability of firms to gain or maintain market power and to exploit a market position through higher prices, thereby curtailing the potential for monopoly rents to be extracted from the economy.

For example, with respect to electricity (a basic good that should be provided to all South Africans), the transmission and distribution of electricity are classic natural monopolies.

Market failure can arise where competition is stilted and, in particular, when monopolies emerge in economic activity. A monopoly can be damaging to social welfare because it is likely to set prices above and produce output below competitive levels. Monopolies have also been found to be less effective at innovation and investment.²⁸ This is damaging in industries that produce minimum basic goods like energy, water and healthcare. Indeed, under unregulated monopolistic market provision, there is a likelihood that citizens would not be supplied with electricity to the extent that it is not profitable for the monopolist to do so. Monopolies can arise as a result of:

- **High barriers to entry** which restrict new firms from entering the market. Barriers to entry vary across countries and industries and can include: financing barriers (discussed previously), such as those experienced in infrastructure-intensive industries like steel, intellectual property rights and regulatory constraints (so called statutory monopolies, of which Telkom is an example in landline telephone communications in South Africa).

²⁶ Putniņš, T. J. 2015. Economics of State-Owned Enterprises. *International Journal of Public Administration*, 38 (11), p. 823.

²⁷ Specifically, competition promotes: allocative efficiency – markets use scarce resources to produce the products and provide the services that society demands; and productive efficiency – companies strive to produce at maximum quantity while minimising costs.

²⁸ See Motta, M. & Tarantino, E. 2017. The Effect of Horizontal Mergers, When Firms Compete in Prices and Investments. *Economic Working Paper Series*. Universitata Pompeu Fabra Barcelona, WP No.1579. and Aghion, P., Bloom, N., Blundell, R., Griffith, R., and P. Howitt, 2005. Competition and Innovation: An Inverted-U Relationship. *Quarterly Journal of Economics*, 120(2): 701-728.

- **Monopolies can also emerge naturally**, for example, when economies of scale are present and so costs of production fall as output increases.²⁹ Despite these monopolies occurring naturally, there is still the risk of such a monopoly extracting rents at the expense of society.

The presence of either private, statutory, natural monopolies, or uncompetitive markets validates government intervention, which can take the form of regulation of pricing, output and quality; taking ownership of these firms; or by establishing a new SOE to compete in these private markets. Eskom for example has the potential to address natural monopoly concerns related to the transmission and distribution of electricity.

The objective of government intervention is to bring pricing and output in line with competitive levels. The following should be considered with respect to government intervention.

- **The pricing and output levels that maximise social welfare are usually not the same as profit-maximising levels.**³⁰ The financial performance and efficiency of SOEs should remain important considerations but these objectives may not be the core mandate of the SOE, provided it is financially sustainable in the long-term.
- **SOEs are suitable only where there is a full monopoly.** There may be market structures that are concentrated but do not tend to a full monopoly. Although these markets may result in sub-optimal outcomes for society, relative to a monopoly, even a limited number of large competitors can yield competitive benefits for society. The creation of an SOE may erode these benefits if it results in the market being transformed into a statutory monopoly. Hence, in oligopoly markets, regulation with competition is preferable to the establishment of a single SOE.
- **Technological developments that can shift industries from natural monopolies to potentially competitive markets should be monitored.** Such technological or market structure changes may result in a SOE no longer being required as the private sector is able to deliver the good efficiently and under competitive market conditions. For example, technological changes have lowered the barriers to entry in telecommunications, aviation, broadcasting, and stock exchanges making the entry of competing private newcomers possible, and eliminating the need over time of a SOE.
- Lastly, if the market is characterised by sufficient provision and competition in the private sector then the existence of a SOE may not be needed for the efficient provision of that good for society. This may call into question whether a SOE is required at all. An example is Alexkor SOC Ltd, a diamond mining company, was founded in 1992 while the diamond mining industry was already well-established with several active participants at the time (such as De Beers Consolidated Mines, Trans Hex, Jagersfontein Developments and ASA Resource Group).³¹

2.4. MARKET FAILURE 4: EXTERNALITIES

The private sector will provide a good or service in the market (unaided) when the private costs of provision match the private benefits. There are instances where a transaction will raise additional costs

²⁹ In such industries average costs per unit decrease as the overall scale of operations becomes larger. As this increasing scale correlates with decreasing average costs, prices can fall but still cover total average costs. In this setting, smaller firms cannot compete or cover costs if they try price at the levels of the incumbent and the market structure tends to a single firm. This is common in industries with a significant fixed cost component such as providers of electricity, gas, water and rail infrastructure.

³⁰ Putniņš, T. J. 2015. Economics of State-Owned Enterprises. *International Journal of Public Administration*, 38 (11), p. 823.

³¹ Department of Mineral Resources, 2016, "South African Diamond Handbook and Operating Diamond Mines Directory"

or benefits for other members of society who are not party to the transaction.³² When these additional costs and benefits do not affect the decision making of a buyer or the seller that are party to a given transaction, unregulated private provision will not maximise social welfare. This is because such transactions will either result in additional costs to other members of society (e.g. pollution from a coal powered power station) or an under provision of benefits (e.g. an increase in education does not only benefit individuals but society as a whole) Not accounting for these additional costs and benefits results in another market failure commonly referred to as externalities.

- *Externalities are negative* if the production or consumption of given good has an additional negative effect on other members of society. A common example is pollution by a company, which may impose health risks and costs to other individuals in society and to other firms. For example, pollution can damage crops or make water sources impure. However, increased pollution does not explicitly increase the private costs related to production and therefore this additional cost to society is not taken in account when optimising production levels. Goods with negative externalities tend to be overproduced by unregulated private enterprises as their direct costs and benefits do not take into account the additional negative spill-over effects. Under this scenario the social welfare maximising level of production would be less than that of the private optimal production levels of the individual (unregulated) private firm.
- *Externalities are positive* if the production or consumption of any given good has an additional benefit on other members of society that does not supply or consume that good directly. For example, improved education or public health, can lead to broader societal benefits in the form of greater economic productivity and employment. Goods that produce positive externalities, will typically be under-produced as the optimal level of production for unregulated private firms is lower than the sought-after level which promotes increased positive spill-over effects for the economy.

When externalities are significant, provision through the private sector may result in large unintended costs in the case of negative externalities or missed opportunities to improve social welfare in the case of positive externalities. Government intervention can rectify this, by ensuring through regulation or taxes that these spill-over effects are explicitly accounted for in output and pricing decisions. The extent to which government should intervene will depend on the size and significance of the externality in question.

2.5. OTHER CONSIDERATIONS

The final consideration is whether there are other distributional concerns related to market provision. This often concerns the provision of minimum basic goods and services. The private sector may not provide these basic goods to all members of society, even in competitive markets, because it is not profitable to do so.

Government intervention can ensure these basic minimum goods and services are provided to all members of society as there is a clear social responsibility (and not a pure profit motive), which is attached to the provision of such basic goods and services. The socioeconomic effects and general well-being that result from a guaranteed level of basic minimum goods and services should also be viewed as an important public good.

³² Putniņš, T. J. 2015. Economics of State-Owned Enterprises. *International Journal of Public Administration*, 38 (11), p. 819.

Another motivation for the establishment of an SOE is where the government seeks to develop what it considers “strategic sectors”.³³ This can arise in several ways, such as the government seeking to utilise a country’s comparative advantage or government seeking to control a sector that has a high rate of labour absorption.

Finally, a further consideration for the establishment of an SOE is where there is a national strategic imperative to control the production of a good or service, such as a key mineral or resource and the operation of airports and ports on security grounds. For example, diamonds are an important mineral and contribute positively to international trade.³⁴ The afore mentioned SOE Alexkor was established in the diamond mining industry, which is dominated by De Beers. While it is viewed by government as strategically important in the Namaqualand region specifically,³⁵ another possible motivation for its establishment is to ensure that the state is directly active in one of South Africa’s important mineral resources.

2.6. CONCLUSION

The table below draws together the above discussion. Markets that show characteristics of missing goods, public goods, monopolies and externalities are unlikely to maximise social welfare through free market operation. In these four cases government intervention through SOEs can address market failures and increase social welfare.

Addressing more moderate market failure related concerns, for example externalities, may be achieved through less intrusive forms of government intervention. Therefore, the various tools of government intervention in the hands of the state must be considered carefully.

However, there can be significant cost and inefficiency risks related to SOEs and this is the topic of the next section.

³³ PriceWaterhouseCoopers, 2015, “State-Owned Enterprises: Catalysts for public value creation” p.14

³⁴ Department of Mineral Resources, 2014, “An overview of South Africa’s Diamond Industry, 2000-2012”, p.1

³⁵ Alexkor SOC Limited 2015 Integrated Report, p.2

Figure 2: Summary table: Market failures and the need for government intervention

Market failure	The good in question is a public good	The good is a missing good	Monopoly/insufficient competition	Positive externalities (relative under-provision of the good)	Negative externalities (relative over-provision of good)	Mixed good (efficient provision but not meeting full societal needs)	Private goods with no (or limited) externalities
Arising concerns							
<i>Provision</i>	✓	✓	✓	✓	✓		
<i>Pricing</i>	✓		✓				
<i>Access/distribution</i>	✓	✓				✓	
<i>Spill-over effects</i>		Possibly		✓	✓	✓	
Does private provision of these goods maximise social welfare?	No	No	No	No	No	No	Yes
Is there potential for government intervention will improve social welfare	Yes	Yes	Yes	Yes	Yes	Yes	No
Possible interventions	1. Private sector contract with the state	1. Private sector contract with the state	1. Regulation	1. Subsidy incentives	1. Taxes / quotas	1. Subsidies	1. Private sector provision
	2. SOE	2. SOE	2. SOE in the case of monopoly	2. Regulation	2. Prohibitive regulation	2. Private sector contract with the state	
				3. SOE	3. SOE		

3. FORMS OF GOVERNMENT INTERVENTION

Where government intervention is needed because there is a market failure, interventions include lighter forms like imposition of taxes; offering of subsidies; and passing of regulation, too heavier forms of intervention through private sector contracting; government provision through a SOE; or direct government provision.

3.1. LIGHTER FORMS OF GOVERNMENT INTERVENTION

Regulation, taxes and subsidies may be preferred as they are generally less costly in financial, administrative and managerial resources; and can be passed with a simple change of law or regulation.

Taxes and subsidies can increase social welfare by bringing about changes to incentives to supply a particular product either by increasing the private costs or benefits to the producer. Taxes and subsidies can be particularly effective in stopping negative and promoting positive externalities.³⁶

- Taxes increase producers or consumers costs, which is a deterrent to production or consumption. For example, sin taxes which are levied on cigarettes and alcoholic beverages attempt to deter public consumption of goods which may lead to negative outcomes both at a private and societal level. Taxes can also raise revenue to enable government to intervene in the market to provide goods and services that the private sector may underprovide.
- Subsidies have the opposite effect – they increase production or consumption. A subsidy is often linked with specific targets that need to be met, for example ensuring that sufficient (or additional) production takes place. For example, private transport and schools sometimes rely on government subsidies to ensure sufficient provision of transport and education.

Taxes/subsidies are likely to be less effective in addressing competition concerns and the provision of public goods. The success of taxes and subsidies will be determined by the extent to which government is able to target its approach accurately. This requires the effective identification and sizing of the market failure and then mapping appropriate targeted interventions.³⁷

Regulation has the potential to achieve the necessary social, economic or environmental policy objectives without incurring the costs and risks associated with actually running an SOE. Regulation is typically used to address market failures that relate to a lack of competition³⁸ and the presence of externalities (both to maximise positive and minimise negative externalities).³⁹

Regulators may be tasked with the job of intervening in poorly functioning markets by a) setting licensing conditions; b) setting price levels; c) setting output levels; d) setting quality levels, e) insisting on the achievement of specific socio-economic objectives, and f) setting environmental standards. For example, the National Credit Regulator (NCR) of South Africa regulates the credit industry, and has amongst its functions the registration of industry participants, setting rules for how credit must be

³⁶ However, more direct government provision whether direct or indirect has also been successful in addressing these market failures in a number of countries. A good example is the provision of successful public education systems in a number of developed nations. The externalities from this service are seen as a contributor to economic development and social wellbeing.

³⁷ In terms of the establishment or financing of new industries it may be more difficult for Government to access such information, which may result in direct provision being more preferable.

³⁸ In the case of a lack of competition or monopolies, regulators can temper prices and increase output that would otherwise occur under profit maximisation in the private sector.

³⁹ In terms of externalities, a regulator seeks to deal with the fact that there are inefficiencies in the current means of production of the subject good. The regulator serves to manage the quantity and/or quality of the goods provided in the market in order to ensure maximisation (minimisation) of the benefit (cost) stemming from the externality.

awarded and investigating complaints. Reckless lending is prohibited in the National Credit Act of 2005 and the NCR can take legal action against offenders. The National Credit Act also protects consumers against unfair discrimination and exploitation by credit providers. This is a form of regulatory intervention that has been beneficial to consumers of credit.

Regulation has its own challenges. While it can be relatively cheaper to impose – requiring the passing of a law or regulation - it does come with costs in design, monitoring and enforcement, and organisational challenges. These costs may be too high for regulators in some industries and could result in regulatory failure where there is insufficient technical capacity or poorly conceived or over-ambitious regulations. These ongoing transaction costs and the risk of regulatory failure should be carefully considered on a case by case basis against other forms of government intervention.

3.2. HEAVIER INTERVENTION: GOVERNMENT PROVISION

Government provision implies deeper public sector involvement in the market and may even result in the replacement of private provision altogether. As discussed, government provision is common in the case of public goods, as private companies are unlikely to provide these goods at sufficient quantities in the absence of a profit motive.

Government provision can be divided into *indirect government provision* and *direct government production*.

Indirect government provision or private sector contracting can take many different forms but in essence, the government stipulates the terms and conditions related to the provision of a good, which is then put out to tender for private sector participation. For example, for refuse removal the government could contract a private sector third party provider to undertake this service. The contractual conditions may relate to quality, price and quantity. In addition, private sector contracting serves as a means of bridging where private companies or government alone is unable to fund the intervention alone.

There is empirical evidence that private sector contracting has gained traction in a number of countries.⁴⁰ It reveals private firms are likely to be more effective at cost minimisation and innovation compared to direct government provision (including SOEs).⁴¹ Importantly, these benefits are more likely to materialise when competition is present amongst private sector contractors.⁴²

It is not always the case that indirect government provision through contracting trumps direct government provision. Designing and enforcing the contracts that underpin indirect government provision creates additional transaction costs for society, which may become prohibitive. These costs include:

- Defining and measuring the appropriate terms of the contracts. Typically, the more complex the good or service in question, the greater the transaction costs will be related to contract design.⁴³
- Policing (monitoring) and enforcement costs can be high if the government has not provided clear and effective contracting conditions and rules.

⁴⁰ See Golding, E., Grunfeld, L., and Benito, G. 2008. The Performance Differential between Private and State-Owned Enterprises: The Roles of Ownership, Management and Market Structure. *Journal of Management Studies*, 45(7), pp. 1244-1273 and Domberger, S., Jensen, P., and Stonecash, R. 2002. Examining the magnitude and source of cost savings associated with outsourcing. *Public Performance and Management Review*, 26(2), pp. 148-169.

⁴¹ *Ibid.*

⁴² This implies that private sector contracting is likely to be less effective when addressing concerns related to monopolies.

⁴³ The economics literature reveals these complexities become particularly challenging when setting appropriate quality levels. See Sappington, D. 2005. Regulating service inequality: A survey. *Journal of Regulatory Economics*, 27(2), pp. 123-154.

- Bargaining costs are incurred when reaching an acceptable agreement between government and the private provider.
- Search and information costs are incurred in determining whether the required good can be provided sufficiently by private companies and in due diligence on if the available providers are suitable and reliable.⁴⁴

As an example of contracted provision, the National Department of Health in South Africa has contracted various non-governmental organisations to provide medical male circumcision (“MMC”) services as part of the National MMC Programme in efforts to prevent the spread of HIV. The 3-year contract with the Aurum Health Institute covers 24 districts.⁴⁵ At local government level, the eThekweni Municipality has contracted with Durban Water Recycling to produce high-quality reclaimed water – sewage water that has been treated to near-potable standards, suitable for industrial use. This is a PPP which has yielded benefits such as lower tariffs for industrial water customers, and has freed up volumes of drinking water for consumers, as industrial companies have redirected their water consumption to reclaimed water.⁴⁶ Another successful PPP has been the Gautrain Rapid Rail Link, a partnership between the Gauteng Provincial Government, as the public partner, and Bombela Concession Company, a private entity. It links Johannesburg and Tshwane, cities between which there is heavy commuter traffic, as well as the OR Tambo International Airport. The agreement entails a 20-year concession for the construction, operation and maintenance of the Gautrain by Bombela.⁴⁷ Funding is provided by the Gauteng Provincial Government and the agreement was subject to approval by National Treasury. The rapid rail link assists commuters between Johannesburg and Tshwane to access a quicker mode of transport for this route.

Indirect provision or the involvement of the private sector can take a number of forms. The various forms that this can take is outlined in principle with examples in the final framework and also considered in the high-level application to the three economic activities.

Direct government provision includes the use of SOEs and agencies. For example, refuse removal which has public good elements could be provided by a government department directly instead of contracting a private party. Direct government provision including the use of SOEs is more suitable when indirect government intervention is too costly or complex to design, contract, monitor or enforce.

The analysis and sequencing of the suitable means of government provision is different for the consideration of new and existing SOEs. When considering the establishment of a new SOE, the starting point for policy makers is typically a preference for efficient market provision. If market failure is likely then policy makers should first consider lighter government remedies such as taxes/subsidies and regulation. If these options are unworkable, only then should indirect and direct government provision should be considered.

However, for existing SOEs, a decision regarding the appropriate intervention has already been taken and the fact that there is an entrenched institution in place is a material consideration. In this case, ***the performance of the existing SOE should underpin the decision to implement new interventions or not.*** If concerns about chronic SOE under-performance emerge, then other interventions must be

⁴⁴ Thomassen, K., Vassbø, S., Solheim-Kile, E., & Lohne, J. 2016. Public-Private Partnership: Transaction Costs of Tendering. *Procedia Computer Science*, 100, p. 820.

⁴⁵ Parliamentary Monitoring Group, record of parliamentary proceedings 8 October 2018: Question NW2355 to the Minister of Health, available: <https://pmg.org.za/committee-question/10106/>

⁴⁶ eThekweni Municipality, description of the Durban Water Recycling Project, available: https://www.durban.gov.za/City_Services/water_sanitation/Services/Pages/durban-recycling.aspx also see “The Durban Water Recycling Project: Creating shared values between Municipalities and Industry”, available: <http://www.mile.org.za/QuickLinks/News/Water%20Governance%20Presentations%20and%20Useful%20Document/Day%2010-Durban%20Water%20Recycling.pdf>

⁴⁷ Gauteng Management Agency, 2015, “Financial Model of the Gautrain Rapid Rail Link Public Private Partnership”, p.2

considered. This does not imply an initial preference for large scale privatisation as this option is likely to result in the significant transaction, transitional and political costs for the economy. **Consideration should first be given to remedies that come with lowest transitional and transactional costs but also have sufficient impact in terms of solving the identified concerns, which may be less than wholesale privatisation.**

3.3. SUMMARY

The most suitable means of government intervention should be assessed on a case-by-case basis. When deciding how to intervene or not, government must consider:

- **The nature and extent of the market failure:** If the market failure is modest, then lighter forms of government intervention are typically more appropriate. Subsidies/taxes and regulation can address issues of competition and externalities. However, if the market failures are more pervasive, complex and severe in nature, and it would be hard to solve with regulation, subsidy or taxes then government provision including SOEs may be more effective.
- **The potential costs/hurdles of the different means of government intervention:** Targeted taxes/subsidies and regulation, are typically less costly than indirect and direct government provision. However, high regulation, contracting, design or enforcement costs may result in direct government provision being more suitable. These would need to be netted with the organisational costs and performance risks related to establishing an SOE (see next section).
- **In the case of SOE provision, whether the decision involves continuing an existing SOE or establishing a new one:** When considering the establishment of a new SOE, to address market failure, policy makers should first be confident that lighter government remedies such as taxes/subsidies and regulation will not be sufficient. Only if these options are unworkable, should indirect and direct government provision should be considered. However, for existing SOEs, the performance of the existing SOE should underpin the decision to implement new interventions or not. If significant concerns emerge then consideration should first be given to remedies that come with lowest transitional and transactional costs but also have sufficient impact in terms of solving the identified concerns.

4. RISKS RELATED TO SOES

We have considered conditions when the establishment or continuation of an SOE for direct state provision is suitable. Simultaneously, it is important to understand that risk for government is also the highest in an SOE. These risks are (i) fiscal risk, and (ii) poor performance risk⁴⁸ and (iii) normal business risk faced by all firms, whether private or state-owned.⁴⁹

4.1. FISCAL RISK

The operation of an SOE imposes a direct cost on the fiscus and if not properly managed this can introduce severe fiscal risk into the economy. This is a real challenge in South Africa presently (see the Eskom example below). Generally speaking, fiscal risk manifests in significant deviations between budgeted and actual outcomes, leading to unanticipated funding gaps, which will hinder government's ability to address other important economic and social needs.

Fiscal risk emerges when governments do not have the ability to impose clear and credible budget constraints on SOEs and other government agencies, or where financial reporting of the SOEs is opaque. The inability to control budgeted outcomes is usually linked to poor institutional and corporate governance or outright corruption in the management of SOEs.⁵⁰

The international empirical evidence reveals that SOEs have become increased burden on the fiscus in many countries. A recent study by the IMF (Bova et al, 2016), looked at 80 advanced and emerging countries, found:

"...over the period 1990–2014 that the fiscal costs from SOEs bailouts averaged the equivalent of 3% of GDP, but reached as much as 15% of GDP in the most extreme case. The realised liabilities from SOEs constituted the fourth largest source of fiscal costs (after those from the financial system, legal rulings and subnational governments) on average in the sample."⁵¹

The same study also diagnoses the category of factors that can influence the severity of fiscal risk:

"The severity of the fiscal risks posed by the SOEs can be influenced by factors of an economic (e.g., the nature and relative weight of the SOEs' activity in the economy), social (e.g., the social sensitivity of the goods and services they provide), and

⁴⁸ SOEs are also prone to allocative inefficiency. SOEs or government departments can be often tasked with providing public goods or mixed goods that have significant public component. However, it is often difficult to determine the optimal quantity. The consumption of private goods is done on the basis of consumer demand meeting producer supply. The decision to buy a good at that point, at the given price, naturally reflects the value of this good for the marginal consumer. The natural pricing mechanism of a private good does not typically exist for public goods. The inability to measure the value of the public good makes it difficult to determine the optimal mix of the good. Without these mechanisms in place SOEs may under or over provide the good of interest leading to an inefficient use of resources

⁴⁹ This includes the day to day operational risks that may cause financial and reputational damage, which if severe enough can threaten the long-term viability of the firm in question. See OECD (2018), Managing Risk in the State-Owned Enterprise Sector in Asia: Stocktaking of National Practices

⁵⁰ Putniņš, T. J. 2015. Economics of State-Owned Enterprises. *International Journal of Public Administration*, 38 (11), p. 827.

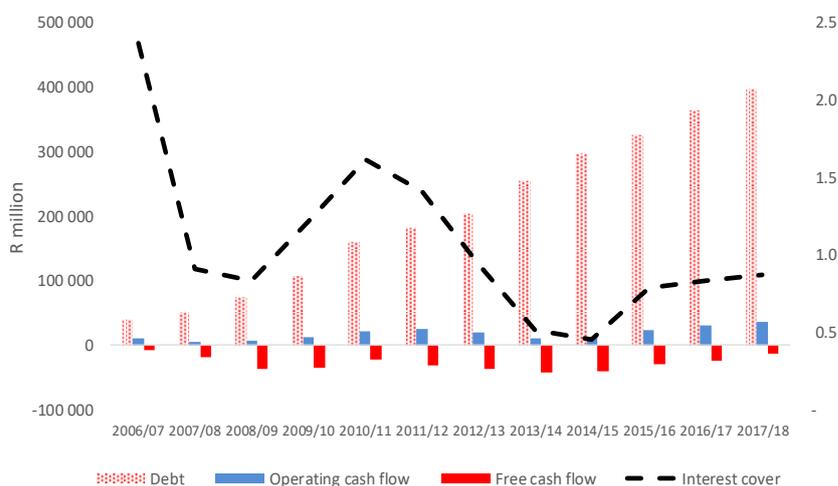
⁵¹ Ter-Minassian, T. 2017. Identifying and Mitigating Fiscal Risks from State-Owned Enterprises (SOEs). *Inter-American Development Bank Discussion Paper No. IDB-DP-546*. p. 3.

institutional and legal nature (e.g., governance arrangements, control systems, fiscal rules applying to the SOEs, and transparency requirements).⁵²

Fiscal risk from SOEs is a *fait accompli* in South Africa – as illustrated by the case of Eskom.

Box 2: Eskom debt and its risks to the South African economy

Figure 3: Eskom's debt servicing capacity 2006 - 2018



Source: Calculations using data from Eskom Holdings SOC Ltd Annual Financial Statements

The analysis of Eskom's financial statements (see the figure above) shows that it has reached its debt servicing limits. Over the 2006/07 to 2017/18 period, Eskom's interest-bearing debt increased from R41 billion to nearly R400 billion, largely due to the capital expenditure incurred for the Medupi and Kusile power plants. During that period, Operating Cash Flow marginally improved and Free Cash Flow (i.e. net of capex) has been negative. This shows that Eskom is unable to meet its interest cost obligations and, accordingly, is unable to borrow further without government guarantees and equity contributions.

Between 2007 and 2018, Eskom's interest-bearing debt as a share of South Africa's GDP grew from approximately 2% to 8%.⁵³ Eskom alone contributes significantly to total SOE debt - consideration of all SOEs' debt as a percentage of GDP would yield an even higher number.

Government has recently committed a further R23billion of fiscal support for Eskom over 10 years, a significant portion of which will be allocated as an urgent Special Appropriation (2019 State of Nation Address). Much of this funding is targeted at maintenance, and is expected to exceed R100 billion for the three years (National Treasury, 2019). Government's ability to continue funding Eskom's cash flow deficits is constrained, particularly as its debt as a percentage of GDP is expected to exceed 60%, even if governments optimistic GDP growth forecasts are achieved. Credit agencies have expressed concerns about South Africa's slow growth, rising debt burden and contingent liabilities. These concerns are reflected in sub-investment grade ratings from two of the three major credit agencies. A downgrade from the third credit agency (Moody's) to sub-investment grade would have significant consequences for public finances. (National Treasury, 2019). As Eskom and Government are constrained by their inability to fund future generation capex, new generation capacity beyond Medupi and Kusile may need to be funded by the private sector.

The South African government has also recently provided bail outs and substantial debt guarantees on behalf of other SOEs, including Denel, SANRAL, SAA and SABC which continue to underperform and

⁵² Ter-Minassian, T. 2017. Identifying and Mitigating Fiscal Risks from State-Owned Enterprises (SOEs). *Inter-American Development Bank Discussion Paper No. IDB-DP-546*. p. 3.

⁵³ Eskom financial statements and Statistics South Africa GDP at market prices data

are unable to meet financial obligations. SAA, which has not been profitable since 2011, has continued to seek bailouts, and in June 2019 requested an additional R4 billion from government.⁵⁴ The SABC has also recently demanded a R4 billion bailout from government and Denel continues to require government support to ensure its liquidity.⁵⁵ This has put significant pressure on the budget with government debt now accounting for more than 50% of GDP.⁵⁶

Various forms of state ownership and intervention are often used as a response tool where the survival of large and/or strategically important companies is threatened by an economic crisis.⁵⁷ Although costly, this ensures the ongoing provision of essential goods and provides relief during periods of economic crisis. For example, following the global financial crisis of 2007/08 there was an increase in (temporary) government ownership in Iceland, the Netherlands, United Kingdom, and United States as governments stepped in under extraordinary conditions to bail out or take partial or full ownership of private financial institutions and car manufacturers.⁵⁸ These interventions played a crucial role in stabilising severely distressed markets, whose collapse could have collapsed the whole financial system.

Typically, bailouts are more legitimate if they are temporary and come with a clear set of instructions to improve the financial position of the organisation in question. Ongoing financial injections from government necessitated by long-term underperformance of SOEs should not be confused with short-term bailouts of sectors during times of exceptional crisis. Where possible, government should not provide explicit and open-ended guarantees to SOEs, and where these guarantees are made, a transparent analysis of the SOE's ability to service the debt should be undertaken by the finance ministry.⁵⁹

4.2. UNDER-PERFORMANCE RISK

Underperformance risk (more formally known as technical inefficiency) occurs in a market when it is possible for more goods and services to be provided using the same costs and inputs. In simple terms, the concern is one of poor operational performance by SOEs. This can manifest in higher prices, reduced output and increased fiscal transfers to make up for the SOEs inefficiency.⁶⁰ Whilst technical inefficiency can manifest in both the private and public sector, there is body of research that indicates SOEs are more prone to technical inefficiency.⁶¹ For instance:

- Goldeng, Grunfield and Benito (2008) use a panel data set covering all registered companies in Norway during the 1990s (where SOEs play an important role across the economy). The study uses metrics such as return on assets as well as costs relative to sales revenue to measure performance and finds that private enterprises perform significantly better than SOEs in respect of their technical efficiency.

⁵⁴ See <https://ewn.co.za/2019/06/08/saa-request-r4bn-bailout-to-remain-afloat-board>

⁵⁵ See <https://www.iol.co.za/business-report/economy/denel-saa-and-the-sabc-are-next-in-line-for-bailouts-mboweni-29718308>

⁵⁶ See <https://businesstech.co.za/news/finance/334839/south-africa-is-running-out-of-time-to-tackle-its-growing-debt-problem-economist/>; and

<https://www.dailymaverick.co.za/article/2019-08-13-no-imf-bailout-in-the-near-future-say-some-analysts/>

⁵⁷ PriceWaterhouseCoopers, 2015, "State-Owned Enterprises: Catalysts for public value creation" p.17

⁵⁸ World Bank. 2014. *Corporate Governance of State-Owned Enterprises*, p.7.

⁵⁹ Ter-Minassian, T. 2017. Identifying and Mitigating Fiscal Risks from State-Owned Enterprises (SOEs). *Inter-American Development Bank Discussion Paper No. IDB-DP-546*. p. 16.

⁶⁰ It can also underpin poor decision making with respect to maintenance and investment decisions.

⁶¹ See Goldeng, E., Grunfield, L. A., & Benito, G. R. G. 2008. The performance differential between private and state-owned enterprises. *International Journal of Industrial Organization*, 45(7): 1244-1273.

Thomsen, S. & Pedersen, T. 2000. Ownership structure and economic performance in the largest European companies. *Strategic Management Journal*, 21(6): 689-705.

Vinning, A. R., & Boardman, A. E. 1992. Ownership versus competition: Efficiency in public enterprise. *Public Choice*, 73(2): 205-239.

Boardman, A. E., & Vinning, A. R. 1989. Ownership and performance in competitive environments: A comparison of the performance of private, mixed and state-owned enterprises. *Journal of Law and Economics*, 32(1): 1-33.

- Thomsen and Pedersen (2000) examine the impact of different ownership structures on a company's economic performance using data from companies across twelve European countries. They find that private ownership models tend to perform better across economic performance measure such as the value of the company and return on assets relative to companies with government ownership structures.

There are a number of reasons for SOEs underperforming relative to firms in the private sector.

- *First SOEs do not face the pressures that drive efficiency as in the private sector.* They face less competition which will dampen efforts cost cut and innovate; the threat of takeover from a more efficient firm is not a concern and c) the risk of bankruptcy can be more limited when SOEs face 'soft' budget constraints.⁶² As a result SOEs might be able to engage in excessive risk-taking because there are able to avoid the typical controls that are faced by private companies.⁶³
- *Second, the supervision of an SOE by its shareholders may be weaker.* In the private sector shareholders and creditors have strong personal incentives to keep management disciplined and company performance at high levels. In the case of SOEs, there is a greater divide between the owners of the SOE (the State) and the management of the SOE (its managers). In this model state officials and citizens are less likely to spend time and other resources on monitoring the management of an SOE due to the nature of the cost of such supervision and the missing personal incentive and interest. The cost of supervision would be borne by the specific officials, while the benefits of supervision would fall to the rest of society. The misalignment of the costs and benefits creates a free-rider problem, which acts to limit the effectiveness of supervision and monitoring of SOEs.⁶⁴ On the other hand, underperformance of SOEs may be caused by political interference and difficulty in undertaking the SOE's function due to complications that arise from mandating the SOE with broader motives that are not in line with its core function.
- *The reimbursement for managers of an SOE is less closely related to outcomes of the core mandate than in the private sector.* Economic theory indicates that private firms with managers that receive performance-based remuneration will have a higher degree of technical efficiency. It is also easier to judge performance on the basis of profit. It can be more difficult to measure social good performance of an SOE and therefore set targets for improved reimbursement. This difficulty arises in the face of the non-financial related objectives that SOEs are often tasked with.⁶⁵

The factors listed above can also contribute to an environment where the mechanisms driving good corporate governance and accountability is likely to become laxer leading to potential risks related to mismanagement and corruption.

⁶² See <https://www.oecd.org/daf/ca/SOE-guidelines-update-draft-text-May-2014.pdf> and United Nations, *State-owned enterprise reform*, 2007.

⁶³ On the other hand, SOEs might be excessively risk averse in contexts where there are overly burdensome state controls or a lack of well-defined corporate objectives to allow for – and incentivise – commercially sound risk taking. See OECD. 2018. *Managing Risks in the State-Owned Enterprise Sector in Asia: Stocktaking of National Practices*. p. 9.

⁶⁴ David Friedman, *Problems in the Provision of Public Goods*, 1987.

⁶⁵ See Bai, C. E., & Xu, L. C. 2005. Incentives for CEOs with multitasks: Evidence from Chinese state-owned enterprises. *Journal of Comparative Economics*, 33(3): 517-539.;

Dong, X.Y., & Putterman, L. 2003. Soft budget constraints, social burdens, and labor redundancy in China's state industry. *Journal of Comparative Economic*, 31(1): 110-133.; and

Lin, J.Y., & Li, Z. 2008. Policy burden, privatization and soft budget constraint. *Journal of Comparative Economics*, 36(1): 90-102.

4.3. SUMMARY

While SOEs may be both desirable and suitable in the provision of certain goods, in response to certain market failures, they can bring with them substantial fiscal and performance risks. The identification of these risks has the following implications for the suitability framework:

- The full spectrum of government intervention options must be considered – especially those options that are less risky and costly.
- Carefully designed monitoring and enforcement structures are required to discipline SOEs' performance and fiscal reasonability.⁶⁶
- A framework assessing the suitability of existing SOEs should explicitly assess whether these risks are being realised and to what degree.

If there is evidence that an SOE is failing against its core mandate, then non-structural and structural reforms must be identified and implemented to improve overall social welfare.

⁶⁶ Importantly, these risks not imply SOEs should simply be abandoned in favour of the private sector. Indeed, many of the problems/risks faced by SOEs are also faced large private-sector firms due to common characteristics such as complex organisational structures with multiple and overlapping layers of hierarchy. See United Nations, *State-owned enterprise reform*, 2007.

5. FRAMEWORK FOR ASSESSING THE SUITABILITY OF SOES

Based on the discussion which establishes when markets fail, when government intervention is needed, when an SOE is needed, and the risks involved with SOEs; this section provides a framework for assessing the suitability of SOEs.

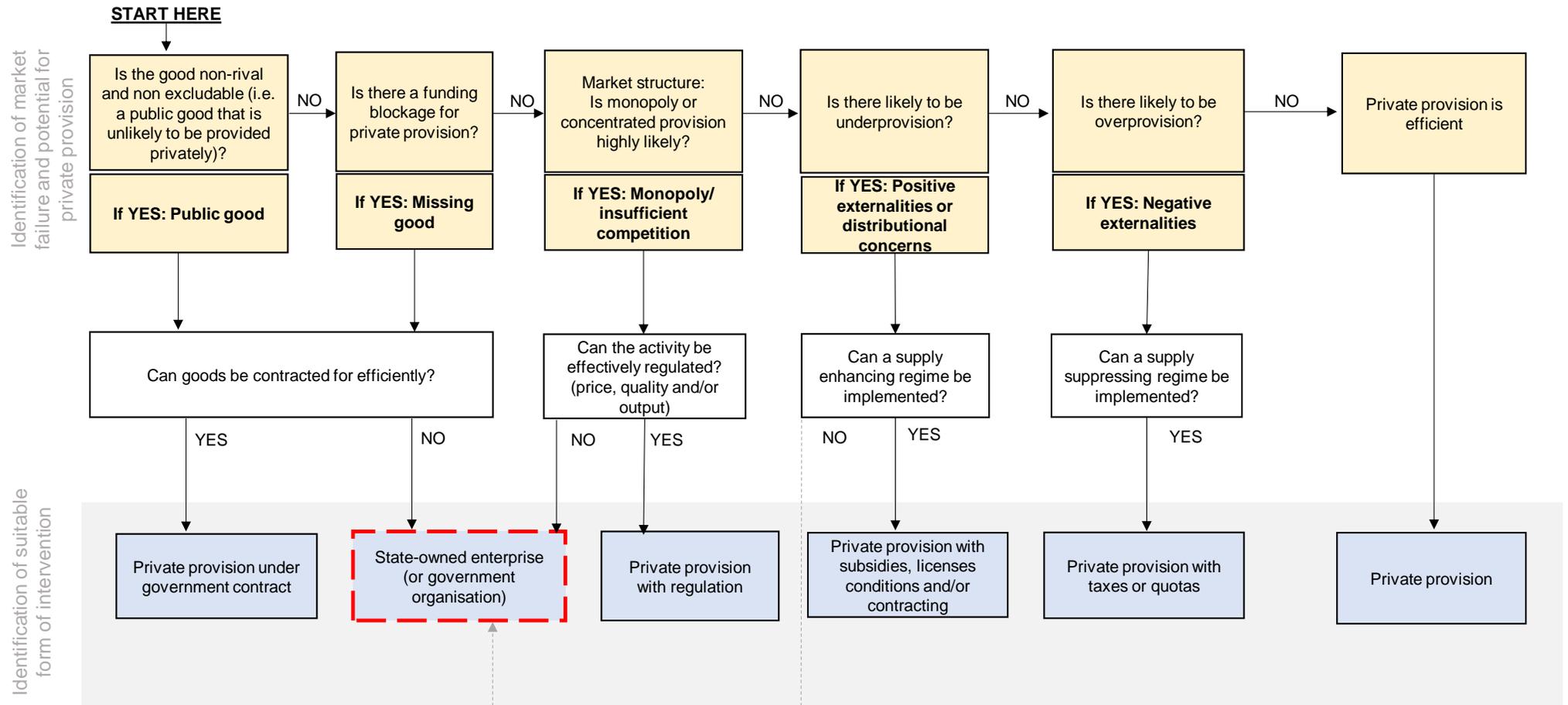
Government intervention and SOEs specifically, should generally only be considered when the related economic activity increases social welfare. Absent such benefits the dedication of government resources to fruitless economic activities is wasteful and attracts high opportunity costs.

We begin with the suitability assessment of establishing a SOE *for new* economic activities (or economic activities currently provided by the private sector) i.e. where a SOE does not exist. This is followed by the relevant framework for assessing *existing* SOEs (this is relevant for the selected case study SOEs).

5.1. ASSESSING THE SUITABILITY OF A NEW SOE

The framework starts in the top left corner and proceeds as a decision flow chart:

Figure 4: Suitability framework for new SOE



ADDITIONAL CONSIDERATIONS/REAL WORLD ISSUES:

- Does the benefits of the intervention outweigh the costs of design and implementation of the intervention?
- Does the intervention give consideration to equity, strategic and other imperatives?
- Is the intervention applicable on its own or is the solution a combination of interventions?
- To the extent that there are significant innovation or market structure changes consider whether the costs of the intervention are still outweighed by the benefits

Step 1. Test the ex-ante suitability of a new SOE to identify market failures and the potential for market provision. The starting point where markets are competitive and deep should be a preference for efficient private sector provision with minimal government intervention. However, the following market failures need to be identified and weighted:

- *Private funding constraints* that result in the private sector failing to develop new industries or sustain important existing industries.⁶⁷
- *Public goods* that are underprovided or not provided at all in the private sector.
- *Monopolies or a significant lack of private competition* that results in overpriced, under produced and low-quality goods.
- *Goods with externalities* that are under or over provided in the private sector relative to the social welfare maximising level.
- Lastly, other *distributional considerations* relating to the provision, access and affordability of minimum basic goods and services.

Step 2. Identify suitable form of government intervention. If substantive market failures have been identified, then the selection of the relevant form of government intervention follows.

In general, SOEs introduce the largest risks and costs for the economy relative to other means of government intervention. The preference should be to first to explore lighter means of government intervention, including targeted subsidies or taxes and regulation. Failing these options, the government can first seek to contract with the private sector, particularly when competition is present in the contracting market.

Instances where an SOE may be more suitable include: the provision public goods (or mixed goods with a significant public good dimension); addressing monopolies when regulation is likely to be overly complex, costly or ineffective; ensuring the supply of socially beneficial goods, that would otherwise not be adequately provided (or provided at all); and when market failures are numerous and relatively complex, as the cost and complexity related to private sector contracting and other interventions to meet these concerns may be prohibitive.

Step 3. Monitor the effectiveness of chosen solution against carefully designed targets. If performance or other related concerns emerge following implementation, then economic reforms should be considered. Reform design is particularly relevant for the assessment of existing SOEs and is discussed in more detail below. This step also includes the following real-world considerations:

- Does the benefits of the intervention outweigh the costs of the design and implementation of the intervention?
- Has the overall system efficiency (i.e. transactional costs) been taken into account?
- Does the intervention give consideration to equity, strategic and other imperatives?
- Is there compelling motivation for a combination of interventions across the value chain?

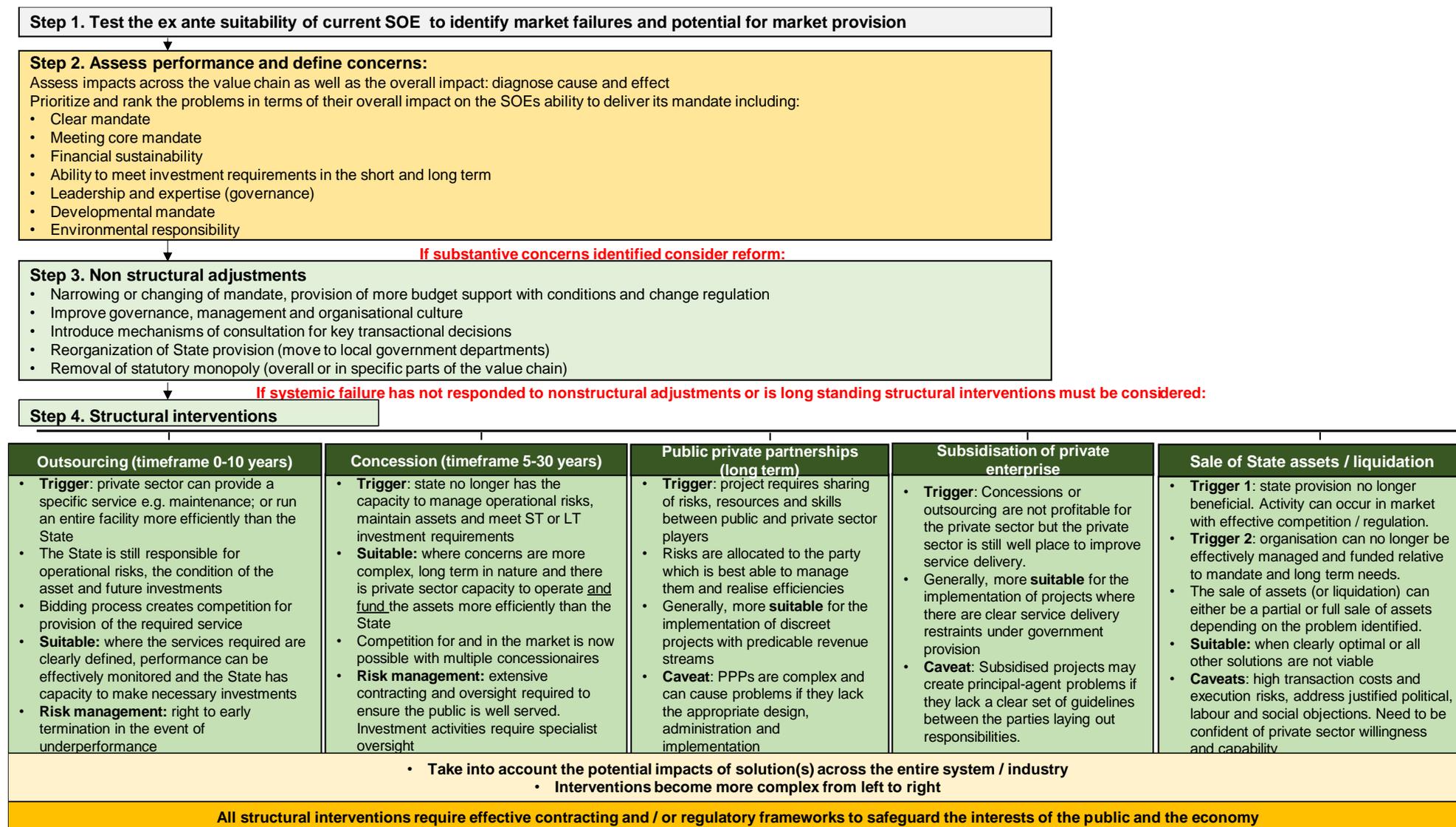
⁶⁷ The need for government intervention in these cases, will depend on the strategic importance of the industry in question for economic development and generally social welfare.

- To the extent that there are significant innovation or market structure changes consider whether the costs of the intervention are still outweighed by the benefits.

5.2. ASSESSING THE SUITABILITY OF AN EXISTING SOE

The figure below sets out the suitability framework of an existing SOE, and is explained thereafter:

Figure 5: Suitability framework for existing SOEs



In the case of existing SOEs, the analysis of market failures still provides a useful reference point for understanding if there is an *ex ante* justification for its existence. However, the crux of the suitability analysis now depends on the *assessment of performance against the core mandate of the SOE as well as the SOEs' track record of financial sustainability*. This framework consists of the following steps

Step 1. Test the *ex-ante* suitability of current SOE to identify market failures and potential for market provision. This is similar to the analysis as set out in the framework for new SOEs and provides a useful starting point as to whether government intervention and therefore an SOE is justifiable at all. However, the determinative power of this step is reduced as an SOE is already in place.

Step 2. Assess performance and define concerns. Given the inherent financial and performance risks associated with SOEs, the suitability assessment is determined by the current and likely future performance of the SOE. In this assessment, the following factors should be considered.

- **Define objectives.** The assessment of performance should be linked to clearly defined and measurable objectives.
- **Best practice.** The assessment should make use of best practice reporting across the various objectives, e.g. audited annual financial statements.
- **Transparency.** The assessment should be transparent in that it should be made clear how the performance assessment is implemented.
- **Independence.** The assessment should be undertaken by independent entities to ensure greater confidence in the process and final results.
- **Comprehensive:** Distinguish between core enablers of governance and financial sustainability; and a measure of achievement of core mandate as well as developmental mandate;
- **Outcomes-focused:** The assessment should focus on the achievement of outcomes of the mandate; and not the inputs and outputs of the SOE. Outcomes must be set against the role the SOE was meant to play that justifies or justified its existence. This is usually set out in national planning and policy documents: in South Africa's case in the National Development Plan;
- **Value chains:** It may be necessary to assess impacts across parts of the value chain as well as the overall impact on the industry in question.

Note: The first paper in this series is dedicated to the performance assessment framework and the assessment is undertaken in detail for Eskom, Transnet and PRASA.

The next two steps assume substantive concerns have been identified in the performance of the SOE during the assessment.

Step 3. Consider and implement non-structural adjustments first. Non-structural adjustments to the SOE would include:

- A change or narrowing in the mandate of the SOE;
- improving clarity of mandate and priority areas, and cutting of non-essential activities;
- additional budget support with conditions;

- improving or introducing new regulation;
- improving institutional governance to clarify mandate and oversight;
- providing greater powers of oversight;
- insisting on mechanisms of consultation on key transactional decisions;
- restructuring incentives and improving internal accountability;
- improving corporate governance and leadership quality;
- strengthening management and organisational culture;
- improving skills and skills development.

It may also include the reorganisation of state intervention for example from SOE provision to localised government department provision; or the removal of the SOE's statutory monopoly to promote competition between the private and public sector. Non-structural interventions come at a lower transitional costs for the economy; are a normal part of improving any improve any business; and typically face less political resistance Where these remedies are not successful in improving outcome performance structural adjustments may be required to address concerns.

Step 4. Design and implement structural adjustments: If the performance failure of an SOE has not been corrected by non-structural adjustments or is chronic, then structural adjustments are required.

With due consideration to the entire SOE and its different parts (both in terms of levels of the value chain and/or assets) the first key question is if and how other agents in the economy, whether other parts of government or the private sector can achieve improved performance outcomes. The following criteria will inform the prioritisation of areas where other agents may be able to improve the outcome performance of SOEs:

- Can service delivery and reliability be improved?
- Can prices be reduced?
- Can quality be improved?
- Can competitiveness be improved?
- Can productivity be improved?
- Can financial sustainability be improved?
- Is there a potential for opening new markets?
- Is there a potential for job creation?
- Can a developmental mandate by better achieved?

Other agents can be involved in a number of ways along a progressively more privately oriented continuum including: 1) service contracting (outsourcing) some of activities; 2) short term management contracts 3) private concessions, 4) subsidisation of private sector participation; 5) public private

partnerships; 6) closing or selling off of parts of the SOE to the private sector; or 7) privatising the SOE wholesale.

- A *service contract* is an outsourcing arrangement that entails the private sector being contracted by the SOE to conduct a component of a service or a specific task. The SOE retains the primary responsibility for overall delivery of the service to users, the associated operational risk and the maintenance of the underlying assets.⁶⁸ This is suitable for a project where the service is clearly defined, demand levels are relatively certain and it is easy to monitor performance. An example is where Eskom contracts the specific task of meter reading or bill payment collection to a private company. These are well-defined, specific tasks.
- *Short term management and lease contracts* are more complex outsourcing arrangements. Under management and lease contracts, a private entity manages a government-owned facility for a period, and under conditions, specified in a contract, but the government retains responsibility for investments. The common features are that the awarding authority engages the contractor to manage a range of activities for a relatively short time period (2 to 5 years). Management contracts tend to be task-specific and input- rather than output-focused. Operation and maintenance agreements may have more outputs or performance requirements. Most management contracts involve the private operator being paid a fixed fee by the awarding authority for performing specific tasks. The remuneration does not depend on collection of tariffs and the private operator does not typically take on the risk of asset condition. Where the management contracts become more performance-based, they may involve the operator taking on more risk, and replacement of more minor components and equipment. This is commonly found in the water sector and, to a more limited extent, energy sector.

An example is management contracts in rail. International experience in commuter rail reveals management contracts are sometimes employed for the operations and maintenance of ticketing and signalling equipment. Another example is management contracts in road. In terms of road transport there exists a class of road infrastructure that avails itself to private sector participation through the management and operation of specific sections of the secondary and municipal road network. While the S'hamba Sonke initiative attempts to address the maintenance backlog on the country's provincial and municipal roads network, the magnitude of this backlog is such that significant funding is still required to turn the situation around. Additionally, the technical capacity available in the roads departments of the provincial and municipal administrations are such that there exists opportunity for external support in the form of management contacts.

- *Concession contracts* give a private concessionaire responsibility not only for operation and maintenance of the assets but also for financing and managing all required investment. The facility will usually revert to the public sector at the end of the project term. The main advantage of a concession is that it allows for the private operation of public assets, for which full private ownership may not be efficient or politically possible. Long-term concessions operate under a "user-pays" model in which the private sector party (known as the concessionaire) is allowed to charge the general public user fees for access to the facility. Under the right conditions, concessions can introduce increased efficiency, decreased exposure to risks, and protect against monopolistic behaviour of government agencies. However, concessions come at a large cost to sufficiently set up and require complex monitoring systems to ensure that the public asset is able

⁶⁸ Operational risk refers to the uncertainties faced by an entity in its in day-to-day activities

to deliver against its mandate. Concessions have been used widely in the transport, water, and energy sectors.⁶⁹

There are example in the introduction of competition in ports. To promote competition, all new port terminals can be tendered for concession, where Transnet Port Terminals is a bidder in the process. While ports themselves have natural monopoly characteristics, this is not necessarily the case for the services provided within them.⁷⁰ Terminal operations and related services are often provided by private sector firms. There is therefore scope for greater private sector participation. This is in line with international trends where the move has been increasingly away from full state ownership and service provision to the landlord model, where the port (Transnet National Ports Authority) retains ownership of the basic infrastructure but divests itself of the operational responsibility of commercial facilities such as terminals. Indeed, many countries have moved to increased private activity at ports in order to finance the expansion of facilities.⁷¹

There are examples in road. Long-term concessions have been used to construct and maintain a section of road and levy appropriate fees to finance the overall project. SANRAL initially had significant success in providing concessions for the N4 east Maputo Development Corridor (managed by Trans African Concessions), the N3 Heidelberg-Cedara (managed by N3 Toll Concession) and the N4 west Bakwena Platinum Corridor (Bakwena Platinum Corridor Concessionaire), each of which are provided with a 30-year contract. As discussed, concessions under its unsolicited bids programme.

- *Subsidisation of private sector participation in economic activity*. This involves Government taking on a financial commitment in order to encourage participation by private enterprises in the market. This may be beneficial in scenarios where the existing SOE is constrained in terms of its non-financial resources, and due to these constraints continues to experience poor performance.

Such an intervention is likely to be most effective where private enterprises possess certain vital skills or technical knowledge but are unwilling to participate in the market due to 1) the significant cost of enter and/or operating in the market; and 2) the inability to access revenue from the provision of the good/service.

Subsidisation is similar in nature to outsourcing and different type of contracts in that it allows the SOE to maintain a level of control over the overall provision of the subject product while at the same time leveraging the efficiencies available through private participation.

- *Public-private partnerships (PPPs)*. This partnership structure would entail an even greater sharing of resources and skills by the parties. Under a Joint Venture (JV), the private sector participates directly in the shareholding structure of the project company. PPPs are a procurement mechanism in which the public and private sector typically share the risks of *project implementation*. The infrastructure required for the relevant project is newly implemented, in contrast to outsource and concession contracting which involve already-existing assets/infrastructure. For strategic reasons, the public sector will often keep control of the entity (at least initially), particularly if the joint venture company owns the assets. However, the private sector will want to be sure that it can manage the management of the entity and so will require powers of veto or weighted voting rights on certain issues. Typically, the operation and maintenance functions are delegated to the private operator through a management contract. The private sector would only be willing to entertain JVs provided that three criteria are met.

⁶⁹ A variant of this arrangement is the “franchise” model where the facility already exists and the private party is allowed to operate the asset for commercial benefit.

⁷⁰ Bell and Bichou. 2008. *op. cit.* p. 15.

⁷¹ World Bank (2001), cited in Bell and Bichou. 2008. *op. cit.* p. 15.

First, the contractual commitments between the parties must provide for long-term concessions in the case of each project (with a proposed minimum time period of 20 years). Second, each PSP must be financially ring-fenced and operated as a standalone business unit. Third, there must be guaranteed, unencumbered access for those private sector parties involved in the provision of the specific infrastructure.

There are various examples in the health sector: Various PPP models have applied in South Africa's health sector. We highlight a few below.

Supply and Facilities Management (Inkosi Albert Luthuli Hospital in KZN). This was the first PPP at a South African hospital to secure the provision and maintenance of specialised medical equipment, manage and upgrade the hospital over a 15-year period at an estimated cost of R5 billion.

Co-location PPPs (The Universitas and Pelonomi hospitals collocation in the Free State).⁷² This 20-year agreement was signed between the Community Hospital Management (CHM) and Netcare to utilise excess capacity at the Universitas and Pelonomi hospitals.⁷³ The private sector would use spare beds at a specified ward, five operating theatres and upgrade and maintain sections of the Pelonomi at a total cost of R81.9 million – the public sector invested R11.03 million and the private sector raised the remaining segment.

PFIs (*Phalaborwa Public Hospital*). This is a 15-year contract signed in 2008 to design, finance, upgrade and maintain the Phalaborwa Public Hospital

- *Sale of assets / liquidation*. This involves the part or entire sale of a public enterprise to the private sector. It entails a change in the ownership structure of the enterprise and usually in the management structure as well. The sale of assets or larger scale privatisation typically comes with high transaction costs and execution risks. One also needs to be confident of the private sector willingness and capability, given the structural change is more permeant in nature. Therefore, it is typically only preferable if it is clearly optimal or if all other solutions are not viable. Liquidation may occur when there are sufficient alternatives in the market and state provision is no longer beneficial.

Historically there are numerous examples of privatisation in South Africa across a wide variety of industries. This includes ISCOR, Telkom and Sasol.

The revision of legal and regulatory structures may also be necessary, when reform includes greater private sector participation, such that roles and functions are appropriately allocated between the State and the private sector. Further, there may be existing legislation that unnecessarily prohibits or limits private sector participation.

A balanced approach must be taken to such adjustments. The updated legal and regulatory framework must be created such that the entity being reformed does not abuse its power. At the same time, the regulatory environment should not be so restrictive such that it prevents enterprises from efficiently carrying out and succeeding in their objectives

⁷² Collocations provide a feasible solution where public and private sectors operating a similar service decide to collaborate rather than compete, resulting in the receipt of revenue by the public sector and the generation of profit by the private sector in a win-win enterprise. It occurs where the public sector has redundant assets and the private sector has sound commercial reasons for the utilisation of these excess State assets.

⁷³ Shuping, S., and Kabane, S. 2011. *Public-Private Partnerships: A Case Study of the Pelonomi and Universitas Hospital Co-Location Project*. Issue No.10.

- Policies that increase competition and improve the business climate should also be enacted concurrently.
- Legislation that protects the rights of stakeholders affected by the SOE subject to reform – businesses, consumers, employees and the general public – should also be enacted in the event that such legislation does not currently exist and/or SOE reform would affect the rights of these stakeholders. As shown in the table below, there is real diversity in the various partnership models that may be considered for the delivery of key services related to SOEs. The choice of partnership model should be informed by the specific project characteristics, the ability of the State to manage and fund the underlying assets, as well as by the risk appetite of the parties involved. For instance, ownership of the underlying asset can remain with the public sector (which is the case in most of the partnership models). The various structures are characterised by different types of risk transfer; an important risk would relate to accountability for service delivery and ongoing investments.

Table 1: Examples of partnership models

Category	Ownership of Capital Assets	Responsibility of Investment	Assumption of Risk*	Length of contract (years)	Typical Sectors
Supply and Management Contract	Public	Public	Public	1 to 3	Supply of non-core elements e.g. labour, raw materials
	Public	Public / Private	Public / Private	3 to 5	Transport, Water
	Public	Public	Public	3 to 5	Transport, Water
Lease/ Franchise	Public	Public	Public/ Private	5 to 20	Water
Concessions	Private/ Public	Private/ Public	Private/ Public	3 to 10	Transport
	Private/ Public	Private/ Public	Private/ Public	15 to 30	Transport
Private Ownership of assets and Private Funding Initiative	Private	Private	Private	Indefinite	Energy
	Private/ Public	Private	Private/ Public	10 to 20	Social Infrastructure
	Private	Private	Private	Indefinite	Telecoms

5.3. SUMMARY

- Social welfare maximisation should be the main objective of SOEs and not profit maximisation.⁷⁴
- New SOEs should not be implemented over any economic activity when the private sector is efficient and competitive in that activity.
- SOEs should be limited to addressing market failures and improving social welfare in strategically important industries.
- SOEs are more prone to operational and financial risks than private firms –there should be a preference for less costly forms of government intervention first, such as regulation, taxes and subsidies before considering an SOE.
- If a SOE is deemed suitable to address market failures the assessment should include the evaluation of efficient market provision in certain parts of the value of chain, if not in the whole value chain.
- The crux of the suitability analysis for existing SOEs depends on an assessment of their performance against the core mandate of the SOE.
- ***If performance is failing chronically against objective standards, the SOE cannot be deemed suitable in its current form.***
- ***In the face of persistent systemic failure, after various non-structural reforms have been tried structural reforms i.e. increasing private sector participation must be considered.***
- The suitability assessment is not static in nature. It requires a dynamic assessment of technological change that can alter market structure and make competitive market provision viable.

⁷⁴ This does not mean the SOE can make a loss; a SOE must be well-governed and financially sustainable in order to fulfil its operational mandate.

6. TESTING THE FRAMEWORK WITH EXAMPLES

6.1. APPLICATION TO ESKOM

Test the *ex-ante* suitability of current SOE to identify market failures and potential for market provision

Analysis of market failures and scope for market provision	Conclusion on <i>ex ante</i> suitability
<p>Electricity provision is likely to result in multiple market failures under unregulated market provision. The extent of these market failures will vary across the value chain.</p> <p>Monopoly concerns</p> <ul style="list-style-type: none"> • <u>Risk of non-competitive prices and under provision as <i>transmission and distribution</i> have strong natural monopoly characteristics.</u> <ul style="list-style-type: none"> ○ There are significant fixed costs in setting up transmission and distribution infrastructure and as more users are added to the network, the fixed cost per user falls as does the average total cost thus enabling a price advantage relative to smaller players. ○ It is more efficient to connect many power producers together because it reduces the need for reserve capacity and thus the cost of ensuring a reliable supply of energy. ○ There are also higher barriers to entry given the large upfront investment requirements combined with the long-time horizon for realising a fair return. This is likely to discourage the private sector from investing in duplicative infrastructure. ○ Additional investment in duplicative transmission or distribution lines would also generally be impractical, and wasteful. • <u>There is however scope for competition in <i>generation</i> as traditional high barriers to entry are being eroded by advancements in technology.</u> <ul style="list-style-type: none"> ○ Historically, electricity generation has required large generating capacity to be economically viable. ○ When generating electricity with fossil fuels in particular, larger generation units have better fuel efficiency than smaller ones. ○ These economies of scale have since been eroded by new technology in renewable and non-renewable electricity generation, which can be scaled down without the loss of efficiency. ○ The development of new technologies is also being spurred by a reduction in the appetite for coal fired power stations and the emergence of renewable energy as an effective competitor. <p>Distributional concerns: access for low-income households</p> <ul style="list-style-type: none"> • <u>Electricity is a basic good that all South Africans should have access to. Full provision by the private sector is unlikely to provide this essential service to all households.</u> <ul style="list-style-type: none"> ○ Many low-income households are not able to afford electricity at the most basic levels, and private companies may elect not to supply these households as it is not profitable to do so. ○ Furthermore, distributing electricity to remote rural areas is very costly and is unlikely to yield positive returns to private investors because of the low densities in those areas. <p>Market provision may result in over provision (negative externalities in generation)</p> <ul style="list-style-type: none"> • The predominate and cheapest forms of electricity generation emit harmful toxins and chemicals into the air that can cause harm to human health and damage material assets. • Emissions are a negative externality because they are not accounted for in the producer's production function. 	<ul style="list-style-type: none"> • There are several significant market failures related to electricity supply, which provide an <i>ex ante</i> justification for the existence of a SOE. • But a uniform approach may no longer be suitable: <ul style="list-style-type: none"> ○ There are questions as to whether government intervention is still suitable with respect to generation as competition is now viable in this area. ○ An SOE that provides the transmission and distribution of electricity remains justifiable to the extent that its performance is acceptable. ○ An SOE in transmission and distribution must have an incentive to increase rather than restrict access to the grid – therefore regulation is still required. ○ An alternative would be private provision plus regulation across the entire supply chain but this is currently unlikely as transitioning to such a model would be complex, costly and time consuming. ○ Regulation of emissions through mandating new technology or taxes is a generally accepted means of dealing with negative pollution externalities.

Assess performance and define concerns

Key findings on performance	<p><u>Eskom is not fulfilling its core operational mandate</u></p> <ul style="list-style-type: none"> While electricity is supplied at affordable levels (in comparison to international benchmarks), load shedding and distributional losses significantly constrain Eskom's ability to supply electricity as required by its core mandate. <p><u>Eskom is performing well on its developmental mandate</u></p> <ul style="list-style-type: none"> It has fulfilled its developmental mandate by expanding energy access through the successful rolling out of the national electrification programme Eskom provides affordable tariffs to low-income households <p><u>Eskom is not reducing costs in response to falling demand</u></p> <ul style="list-style-type: none"> Although Eskom has faced falling electricity volumes, it should be able to scale down costs by closing old power plants, at least in the long term. The avoidable costs of supply are greater than the current regulated tariff level so Eskom should benefit from decommissioning. However, due to the delays in completing Medupi and Kusile, it has been unable to decommission old inefficient plants and save costs. <p><u>Eskom is currently not financially sustainable, particularly due to its high debt burden</u></p> <ul style="list-style-type: none"> The severity of its precarious financial position is demonstrated by Eskom having to borrow in order to make interest payments on its debt. <p><u>Eskom is not attaining a level of investment to conduct much-needed maintenance. There are significant maintenance backlogs:</u></p> <ul style="list-style-type: none"> Over R35bn in power plant infrastructure maintenance is overdue Over R100bn is required to comply with DEA environmental standards <p><u>While Eskom has performed well on transformation by transforming its employee base on race and gender grounds, there are significant governance and organisational culture concerns, which are now being attended to.</u></p>
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Consider non-structural and structural reforms

Underlying concern	<p>Eskom's lack of liquidity and financial sustainability. This is underpinned by its current high debt burden, ongoing commitments to the completion of the Medupi and Kusile power plants, backlogs in maintenance on other plants, and the investments needed to comply with air quality regulations. This requires substantial financial support from government, which has become increasingly difficult to provide given fiscal constraints.</p>
Impact	<ul style="list-style-type: none"> Ineffective operation of power stations. Unreliable power supply. Constraints in future expansion of power generation to meet future demand.
Potential causes	<p>High costs of establishing generation infrastructure:</p> <ul style="list-style-type: none"> The establishment of Kusile and Medupi power stations required significant capital expenditure, which added significantly to Eskom's current debt burden of R400bn. Long delays in completion of Kusile and Medupi, combined with poor design and structural concerns have impeded electricity generation at these plants, thus the ability to generate revenue from the operation of these plants has been significantly constrained. <p>Costs of maintaining generation infrastructure are high:</p> <ul style="list-style-type: none"> Compliance with the Department of Environmental Affairs (DEA) emissions standards is costly to the extent that Eskom cannot afford to incur these costs to be in line with DEA requirements. This cost is estimated at over R300bn. This means that certain negative externalities are not being priced in the current tariff. DEA should be more stringent on enforcing air quality regulations instead of granting 5 year rolling exemptions. These exemptions were granted due to the financial strain on the SOE. There is also a backlog in maintenance required on power generation equipment, estimated at more than R35bn.

	<p>State financial support going forward is constrained by sovereign debt risk.</p> <ul style="list-style-type: none"> • While government has provided financial support (and will continue to in the foreseeable future), taking on Eskom's debt incurs sovereign debt risk which compromises South Africa's fiscal position. • There are thus substantial implications on South Africa's economic stability. <p>Eskom is therefore significantly financially constrained</p> <ul style="list-style-type: none"> • High costs of establishing and maintaining generation infrastructure has incurred significant levels of debt • Tariffs are not reflective of costs (even after accounting for Eskom operating inefficiency), therefore Eskom is constrained in covering the full economic costs of operating its generation fleet. <p>A combination of the above results in Eskom being unable to cover its debt – evidenced by Eskom having to borrow to make interest payments on its debt.</p>
<p>Option 1: continuation of internal public sector reform (non- structural reform)</p>	<ul style="list-style-type: none"> • Various efforts of non-structural reforms to Eskom have been conducted in the past and continue: <ul style="list-style-type: none"> ○ Changes in management, leadership and governance structures. ○ Strict economic regulation of Eskom conducted by NERSA with respect to electricity tariffs, with adjustments made to Eskom's revenue allowance applications to correct for operational inefficiencies and capital cost overruns - see next option as there are questions regarding the effectiveness of this regulatory regime. Specifically, there is uncertainty on the effectiveness of incentive-based tariff regulation (including smarter regulations) on state-owned utility companies. There may be opposing incentives on efficiency, particularly with respect to employment levels. ○ Ongoing financial support from government (but with conditions) ○ There are indications that the current administration demonstrates an increase in political will and that concerted efforts have been made and will continue towards implementing good governance in Eskom. ○ There is also an acknowledgment by Eskom's management that cost levels need to be reduced and greater efficiencies should be realised. • In our energy expert's view these ongoing non-structural interventions could improve profitability but only at the margins as current electricity prices are simply not cost reflective.
<p>Option 2: Improve regulatory process to ensure tariffs are cost reflective</p>	<ul style="list-style-type: none"> • Consider an improvement in the regulatory process to ensure tariffs are cost reflective <ul style="list-style-type: none"> ○ The observation that the tariffs stipulated by NERSA are not reflective of costs may indicate that there is limited true appreciation of the economic costs of running Eskom. ○ There is also insufficient oversight of municipal tariffs, which can be excessive, resulting in lower demand which is to the determinant of Eskom's revenue generation. ○ NERSA could improve its regulatory practices to ensure that tariffs are cost reflective and that municipalities are not charging excessive prices at the detriment of Eskom (wholesale supplier). ○ For example, benchmarking Eskom distribution against municipalities can be an important tool for assessing the costs incurred at the distribution level. NERSA should enforce the requirements on municipalities to conduct cost of supply studies ○ However, this is unlikely to succeed without a wholesale change of the regulatory approach at NERSA. • This option should most likely be implemented in combination with Option 1. • Risks and key considerations related to this option. <ul style="list-style-type: none"> ○ Any resulting increasing prices in overall tariff will have to be introduced over time to reduce shocks to the economy. ○ The impacts on energy intensive users and the poor will have to be carefully considered. ○ There is also ongoing risk of regularly gaming on behalf of Eskom.
<p>The severity of Eskom's financial position and poor outcome performance may not justify continuing with non-structural adjustments only, particularly given that historical experience shows that this alone has not brought about reform in Eskom that is required.</p>	
<p>Option 3: Harness a competitive generation sector but retain SOE</p>	<ul style="list-style-type: none"> • This option removes NERSA's ability to regulate generation tariffs and rather focuses on harnessing competition in generation. • A pre-requisite for this, is that the generation segment becomes contestable.

<p>across the value chain</p>	<ul style="list-style-type: none"> ○ For this to happen, DOE needs to remove all barriers to entry into the generation segment, i.e. allow unfettered/unconstrained capacity additions by IPPs. ○ In addition, Eskom's transmission network needs to be split out to allow an independent systems operator to purchase electricity on an arm's length basis without discrimination/conflict of interest. ○ These measures would ensure that Eskom and IPPs do not charge monopoly prices and that the prices charged for generation is cost reflective. ○ NERSA will be left to regulating transmission and distribution charges. ○ Structural separation of Eskom would be beneficial in attracting private investment in generation, which would reduce the economic cost of non-supply and Eskom's peaking power costs <ul style="list-style-type: none"> ● Significant potential system-wide risks must be still be considered (these considerations also apply to option 4). <ul style="list-style-type: none"> ○ Need to be confident of private sector willingness and capability to compete effectively ○ Political and labour tensions will need to be mitigated. ○ IPPs will likely insist on offtake agreements which Eskom is likely to have to guarantee minimum volumes at a higher generation price currently allowed by NERSA (through its envisioned systems operator function). ○ Tariffs may initially rise above current levels in order to cover capital costs but over time a competitive generation segment with multiple players is more likely to result in competitive outcomes. ○ The risk of decreased electricity access to the indigent is low. Further, to the extent that the State's financial strain is lessened from removal of the debt burden as a result of generation privatisation/sale (see next step option), this may enable State provision of subsidies to ensure that indigent sectors of the economy will still have access to electricity. This can also be addressed via regulation. ○ Impact on employment and labour disputes.
<p>Option 4: Harness a competitive generation sector and increase private sector participation in generation</p>	<ul style="list-style-type: none"> ● This is effectively option 3 plus increasing private sector involvement (in the appropriate form) due to government's constraints in providing financial support to Eskom. <ul style="list-style-type: none"> ○ Outsourcing and concessions are likely to be inappropriate as the scope and complexity of the issues at hand will not be addressed and they will not solve the fundamental issue of high levels of debt. ○ Public-private partnerships are also inappropriate as the issues being faced by Eskom involve already-existing assets (i.e. power generation infrastructure). ○ Contestable market designs. Eskom, neighboring utilities and the private sector could be asked to tender in capacity auctions. ● Privatisation of power generation assets can be considered as a useful additional structural intervention. <ul style="list-style-type: none"> ○ Bulk of Eskom's debt burden has arisen from its new generation plants. ○ Sale can be conducted in one of two ways: either the generation assets alone are sold and proceeds from sale are used to pay off Eskom Holdings' debt; or assets are sold in combination with a reallocation of some of Eskom Holdings' debt (where proceeds comprise assets net of the value of debt). ○ Generation plants can also be sold in a piecemeal manner (see below) to assess the effects on efficiency and security of supply. ○ However, the ideal scenario would be separately owned generation plants and IPPs competing to supply to the systems operator. ○ In this setting tariffs are likely to be more sustainable and independent generation entities would achieve more efficient outcomes due to contestability of electricity supply. <p>To mitigate risks, a piecemeal approach to privatisation is proposed such that power stations are sold individually</p> <ul style="list-style-type: none"> ● Allows assessment of effects on efficiency and security of supply. ● Should the effects be satisfactory, this will ensure scale-up of privatisation is conducted in the right way. ● Observations from sale of a single power station can be used to improve conditions of sale, procedures to be followed, etc. for privatisation of other power stations. ● Can test private purchasers of power stations' technical strength and capability. ● Even if certain generation plants are sold at negative prices, it would still be beneficial to Eskom and the wider community if it alleviates Eskom of long-term contingent liabilities and allows DEA to effectively enforce air quality regulations

Non-structural reform efforts must continue:

- *Continue with efforts to improve internal governance and organisational structure* as this will assist in facilitating the implementation of structural reform efforts and increase the probability of success of proposed structural reform.
- *Improve regulatory practices.* Methodologies employed by the regulator need to be re-examined and consideration of the scope of regulation in a fully liberalised competitive generation segment of the electricity supply industry needs to be made

6.2. APPLICATION TO TRANSNET

Test the <i>ex-ante</i> suitability of current SOE to identify market failures and potential for market provision	
Analysis of market failures and scope for market provision	Conclusion on <i>ex ante</i> suitability
<p>Freight rail transport, pipelines and port activities are likely to result in multiple market failures under unregulated private sector participation – concerns vary across these different sectors and respective value chains.</p> <p>Monopoly concerns within freight rail, pipelines and ports</p> <ul style="list-style-type: none"> • <u>Risk of non-competitive prices and under provision as rail, pipeline and port infrastructure have strong natural monopoly characteristics (as well as high barriers to entry).</u> <ul style="list-style-type: none"> ○ Rail and pipeline network infrastructure have natural monopoly characteristics as result of significant economies of scale, economies of density⁷⁵ and economies of distance.⁷⁶ ○ As more users are added to these networks, the fixed cost per user falls as does the average total cost thus enabling a price advantage for large established networks relative to smaller players. ○ High entry barriers in rail, pipeline and port infrastructure due to the large required initial investment, and high sunk cost ratio. ○ As a large part of the initial investment is made towards sunk long-lived assets a lengthy period of operation is required before generating suitable returns. ○ It is unlikely that there will be a duplication of the provision of port, rail and pipeline infrastructure within a given geographical area. ○ Private sector participants typically prefer to be users as opposed to owners of such infrastructure (but exceptions can emerge). ○ Road is an alternative mode of transport to rail and has grown in prevalence recently. However, in principle road does not compete effectively with rail across a number of key customer types. <p>There is however scope for competition in other aspects of the value chain of freight rail, pipelines and ports</p> <ul style="list-style-type: none"> • Freight rail: competition is viable in rail operations but regulation is required for competition to be feasible and effective. • Ports: scope for increased competition in terminal activities and seaside operations⁷⁷ – currently competition for Terminals is possible when the lease expires but progress in terms of the introduction of competition has been sluggish. • Pipelines: scope for competition in storage and other supporting infrastructure – largely not part of Transnet and therefore not a current gap to address. <p>Market provision may result in under provision (positive externalities)</p> <ul style="list-style-type: none"> • Freight rail <ul style="list-style-type: none"> ○ Reduced pollution and carbon emissions as a result of increased rail usage relative to road usage. ○ Less damage and repair costs related to road infrastructure when freight is directed from trucks to trains. • Ports <ul style="list-style-type: none"> ○ Ports can harness informal sector development, improved transportation links and tourism. 	<ul style="list-style-type: none"> • There are several significant market failures, which provide an <i>ex ante</i> justification for the implementation of a SOE across these sectors. • But a uniform approach and current SOE structure may no longer be suitable: <ul style="list-style-type: none"> ○ Transnet must be properly managed and regulated given monopoly concerns can emerge under current structure, particularly with respect to general freight rail and the ports authority. ○ Market provision plus regulation may be more suitable in specific areas if private sector can become more effectively involved in specific parts of the value chain where competition is possible. ○ There is scope for the benefits of competition to be realised to varying degrees in the provision of train operations, and port services including terminals.

⁷⁵ In freight rail for example, economies of density are present as increasing the utilisation of existing vehicle fleet (locomotives and wagons) and infrastructure capacity (railway lines) will result in an overall decrease in unit transport costs.

⁷⁶ In freight rail for example, economics of distances are present as costs incurred at terminals remain fixed no matter the distance travelled, therefore terminal costs per unit of distance and freight being transported will decrease as the distance between the origin and destination of freight increases.

⁷⁷ Seaside operations include services such as the towing and tying of vessels.

Assess performance and define concerns

Key findings	<p><u>Transnet is not fulfilling its core mandate</u></p> <ul style="list-style-type: none"> While the bulk export lines and pipelines are performing well, domestic freight transport and port operations are inefficient <p><u>There are persistent operational concerns</u></p> <ul style="list-style-type: none"> Significant concerns with respect to the cost efficiency and reliability of the general freight network Significant concerns with respect to pricing of port operations (automobiles and containers in particular) Export rail lines, pipelines and port operation performing closer to standard but some gaps remain <p><u>Currently Transnet is financially sustainable BUT significant debt exposure and the availability of debt facilities going forward raises concerns with respect to long term sustainability</u></p> <ul style="list-style-type: none"> Recent qualified audit raises concerns about Transnet's creditors pulling its debt facilities which would result in Transnet potentially ceasing to be a going concern <p><u>There is a concern as to whether Transnet will be able to sufficiently invest and maintain its network infrastructure in the mid to long term.</u></p> <p><u>There are significant corporate governance and organisational culture concerns</u></p>
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Consider non-structural and structural reforms

Concern	The cost efficiency and reliability of the general freight network is sub-standard
Impact	Reduces the efficiency of supply chain linkages and logistics increasing the cost to do business in the economy
Potential Causes	<ul style="list-style-type: none"> Persistent internal technical and managerial failure at TFR. No competition in train operations (despite competition being viable). No regulation present despite monopoly position of TFR. Poor condition of underlying general freight network infrastructure and maintenance backlog increases the risk of derailment and other delays.
<u>Option 1:</u> Continuation of renewed internal public enterprise reform (non-structural reform)	<ul style="list-style-type: none"> Improve internal governance and organisational structure <ul style="list-style-type: none"> This is ongoing but to date results have been limited (new management should be afforded more time). These efforts should continue as absent successful internal reform, implementation of other interventions will suffer. Indications of increased political will from the current administration can strengthen and revitalise non-structural efforts for reform. Clarify and make mandate more focused <ul style="list-style-type: none"> Transnet is a commercial entity but its mandate also encompasses a developmental component, which presents a conflict in navigating the fulfilment of commercial versus developmental purpose. A narrowing and focusing of its mandate may enable Transnet to focus efficiency and cost effectiveness
<u>Option 2:</u> Introduce	Note: Likely to be undertaken in conjunction with Option 1

<p>economic regulation for freight rail (SOE structure remains unchanged)</p>	<ul style="list-style-type: none"> • Economic regulation of Transnet can further address issues of cost efficiency and reliability. • Despite a safety regulator being in place South Africa does not have a transport regulator that can improve operational performance and cost effectiveness.⁷⁸ • In the absence of introducing competition the regulator will need to be directly mandated to increase cost effectiveness and operational efficiency. • This in line with other rail regulators, for example in China and the UK, they are responsible for: <ul style="list-style-type: none"> ○ Setting technical standards ○ Monitoring performance against these technical standards ○ Reviewing and potentially even setting prices on a cost-plus basis ○ Conducting extensive reviews every five years to determine the funding the SOE receives and targets that must be reached ○ Conducting investigations into operational issues to determine appropriate penalties should the freight operator be in breach of its requirements • Risks and costs related to effective regulatory design and enforcement must be carefully considered.
<p>There are indications that the poor performance with respect to cost efficiency and reliability has not been responsive to non-structural adjustments. If systematic failure persists, structural reforms should be considered.</p>	
<p>Option 3: Vertical separation and introduction of competition through concession in train operations (with regulation)</p>	<p>Note: Likely to be undertaken in conjunction with options 1 and 2</p> <p>Freight rail structural market reform</p> <ul style="list-style-type: none"> • As evidenced internationally, it is possible to have competition in general freight operations (but much less common in terms of underlying network infrastructure). • Transnet does not have a statutory monopoly in providing freight rail operations. • Yet as the sole owner of the network and dominant operator on that network, it has the ability to inhibit competing train operators from competing effectively (foreclosure concerns). • TFR can be vertically separated into an Infrastructure Manager and Train Operator, where qualified third-party train operators are admitted in order to introduce competition in train operations. • Regulation needs to be introduced to monitor and enforce how access to the rail network is granted and the conditions governing efficient and safe train operations. This can fall under the mandate of the proposed Single Transport Regulator (STER)⁷⁹. • Transnet will remain an SOE in terms of owning the rail infrastructure (the natural monopoly component) but there would be multiple participants in rail operations creating competition in the market. • This can result in benefits in terms of speed, quality, price, reliability, service availability and high responsiveness to “rapidly-changing domestic or global market requirements”. • Third party competitors can be introduced via: <ul style="list-style-type: none"> ○ Concession of part or all of Transnet ‘s rolling stock (locomotives and wagons); ○ Asset sale of Transnet ‘s rolling stock; or ○ Greenfield entry by the private sector under licensing arrangements (the new entrants purchase or build own rolling stock). ○ The effectiveness and transaction costs related to these options should be carefully considered. • System wide considerations include: <ul style="list-style-type: none"> ○ Transnet’s overall and TFR’s financial sustainability following vertical separation. ○ Financial sustainability should be maintained to the extent that a) Transnet can maintain some of its key large contracts, b) TFR is able to reduce operational costs plus sell underutilised rolling stock assets and c) the TFR is able to receive revenue through the provision of access to the underlying network infrastructure. ○ The introduction of competition will require a solution to the maintenance backlog on the general freight network. Transnet should be able to focus on this more following vertical separation. But this may require additional funding from government or increased outsourcing.

⁷⁸ There is currently only the Railway Safety Regulator whose mandate is to oversee and enforce safety performance by all railway operators in the country (as well as those who enter South Africa from neighbouring countries). (Railway Safety Regulator Annual Report 2015-2016, p.10)

⁷⁹ The proposed mandate of the STER includes regulation and oversight of train path allocation, access arrangements and fees for use of rail infrastructure, public sector participation and general market conditions (Draft White Paper on National Rail Policy, 2017, p.7)

- To date concession has proven mostly unsuccessful with respect to the branch lines and a revised government strategy, or renewed efforts should be considered if these lines are to play a role in expanding market access.

Risks

- Efforts to introduce competition without addressing the maintenance backlog would have an adverse effect on current market conditions.
- The private sector may leverage its bargaining position to negotiate terms that would incur one-sided benefits to its advantage.
- Involvement of the private sector must thus be undertaken with caution and careful consideration.

6.3. APPLICATION TO PRASA

Test the <i>ex-ante</i> suitability of current SOE to identify market failures and potential for market provision	
Analysis of market failures and scope for market provision	Conclusion on <i>ex ante</i> suitability
<p>There is risk of a number of market failures under unregulated market provision</p> <p>Market provision may result in under provision of a development enhancing utility following a lack of profitability related to lower intended prices.</p> <ul style="list-style-type: none"> • A reliable, efficient and cheap commuter system positively impacts economic development by linking the population to work opportunities. • This is particularly important in South Africa where large portions of the population are geographically segmented away from economic activities, are budget constrained and do not have access to private transport. • Private providers may limit the coverage of their operations based on the profitability of passenger rail routes or the profitability related to the intended cheaper fares. This may result in an under provision of the service to certain segments of the population. <p>Market provision may also result in under provision (as positive externalities are present).</p> <ul style="list-style-type: none"> • An effective commuter transport system has potentially significant knock-on impacts both socially and economically. <ul style="list-style-type: none"> ○ Improved public transport can improve congestion concerns (positive environmental impacts) ○ It also assists with public planning (especially in high density metropolitan areas). <p>In addition, the private sector may still not have the appetite to own or fund large network infrastructure that are highly capital intensive.</p> <ul style="list-style-type: none"> • However, in the long run the private sector may be interested in investing in the upgrading, maintenance and coverage of specific projects related to commuter rail infrastructure. <p>There are monopoly concerns as result of rail infrastructure having natural monopoly elements but note.</p> <ul style="list-style-type: none"> • These concerns are more limited given competition from taxis and buses. • However, these alternative sources of public transport are not focusing on the poorest individuals in South Africa, whereas commuter rail does <p>Limited current scope for competitive market provision across the value chain given lack of profit motive for the sector private.</p>	<p>There are several significant market failures, which provide an <i>ex ante</i> justification for government intervention.</p> <p>Other forms of government organisation such as provincial departments can also be as or more effective.</p> <p>Potential scope for private sector involvement alongside government intervention in the long-term but currently too much uncertainty and risk.</p>

Assess performance and define concerns	
Key findings	<p><u>While PRASA has a wide-ranging network and good coverage of commuter areas, its systemic failure leads to unsustainability in the short to medium-term</u></p> <p>PRASA underperforms across all key indicators relating to its core operational objective, financial stability, investment related to maintenance and expansion of current operations, corporate governance and public interest objectives.</p> <p>PRASA is unable to generate sufficient investment to fund its current operations, and under its current governance structure is unsustainable in the short- to medium-term.</p>

Consider non-structural and structural reforms	
Underlying concern	Systemic failure in the provision of reliable, available, predictable and safe passenger services for the South African public.
Impact	<p>The failure of PRASA directly impacts economic and social development including:</p> <ul style="list-style-type: none"> • A reduction in the ability of low-income individuals to contribute directly to their own (as well as overall) socio and economic development through the inability to get to work. • Increased dependence on alternative means of public transport, such as mini-bus taxis which are more expensive than the commuter rail system. • This leads to a reduction in the disposable income available to these individuals that can be directed towards other key expenditure items in their household.
Potential cause	<ul style="list-style-type: none"> • Internal technical and managerial underperformance (well publicised investigations into alleged maladministration and corruption). • Substantial turnover of top and middle management. • Reliance on ageing infrastructure, which increases the potential for operational failures. • Wasteful budget expenditure and slow roll-out of capital investment programmes meant to transform the passenger rail system. • Insufficient asset management (lack of security, repair and maintenance) leading to asset degradation which has ultimately impacted on the reliability and safety of PRASA's services.
Option 1: Continuation of internal public sector reform (non-structural reform)	<ul style="list-style-type: none"> • Improve internal governance and organisational structure. <ul style="list-style-type: none"> ○ There should be continued effort towards improved internal governance with a focus on appointing qualified management guided by a clearly defined mandate. ○ Under the current shift in the political environment sufficient time should be given for new management to perform. ○ Strict targets, performance incentives and a stringent performance enhancing framework should be put in place. • Increased budget support should continue in the short-term to subsidise fares and key operational areas of the business. <ul style="list-style-type: none"> ○ Government should continue to play an important role as a source of finance for PRASA, however this support needs to be contained. ○ Where possible budget support provided by government should be linked to performance targets which are key to the success of the entity.

	<ul style="list-style-type: none"> • Reliance on current non-structural reforms (only) may come with significant risks <ul style="list-style-type: none"> ○ Efforts to improve the management and governance of PRASA plus additional budget support have yielded limited results to date. ○ Government needs to realistically consider whether the current underperformance of PRASA can be remedied by ongoing current interventions. ○ Consideration should be given to deeper organisational change (this is discussed next).
<p>Option 2: State reorganisation including decentralisation of passenger rail operations and management</p>	<ul style="list-style-type: none"> • Decentralisation of passenger rail operations resulting in a migration of management from state to local government seems to be the next logical step to bring the underperformance of PRASA under control.⁸⁰ • Decentralisation implies the power to run and administer commuter rail services will be given to municipal/provincial governments that will then focus on the rail networks within their relevant geographic area. • This already been proposed in the Draft White Policy paper⁸¹ • The move to a decentralised model is justified on the basis that <ul style="list-style-type: none"> ○ Commuter rail systems around metropolitans do not compete and more importantly rely on each other, and as such there is no clear need for these systems to be managed by a single entity. ○ The ability to ring-fence each of these operations. ○ Decentralisation of the system allows for a more consistent planning process by local governments and their transport authorities, feeding into a more concise urban development programme. ○ South Africa’s major metropolises have shown their ability in handling and managing large strategic and developmental assets with a joint value well in excess of those currently operated at PRASA.⁸² ○ This suggests that major metropolises have the capacity to take on this significant activity. ○ Decentralisation of the urban rail system allows PRASA to focus its time and other resources towards other aspects of the business such as its inter-city rail and bus services. ○ Provincial governments (Western Cape and Gauteng) have already showed a willingness to undertake these services and general audits of local governments as well as their performance in delivering other services provide support in favour of them taking over these ring-fenced systems.⁸³ • The following risks need to be considered when engaging in decentralisation <ul style="list-style-type: none"> ○ Transitional costs and timing ○ Potential for labour disputes ○ Ensure there is sufficient managerial capacity for each decentralised rail system ○ Smaller municipalities in particular need to be carefully assessed to ensure their readiness and ability to deliver on such a service. • Decentralisation alone will not necessarily lead to stronger outcomes and it remains important that there are agreed upon structures in place which foster good governance, i.e. a combination of option 1 and 2.
<p>Option 3: Project specific investment by</p>	<ul style="list-style-type: none"> • Significant private sector participation is unlikely in the short term, given the risks associated with taking over the current state of operations.

⁸⁰ Department of Transport. 2017. White Paper: *National Rail Policy*.

⁸¹ Department of Transport. 2017. White Paper: *National Rail Policy*.

⁸² Department of Transport. 2017. White Paper: *National Rail Policy*. p. 69.

⁸³ See <https://www.iol.co.za/news/south-africa/gauteng/gauteng-to-take-over-running-of-trains-from-PRASA-20514059> and <https://www.news24.com/SouthAfrica/News/let-western-cape-manage-its-own-PRASA-network-da-to-national-government-20190424>

<p>private entities – with government subsidies</p>	<ul style="list-style-type: none"> ○ Currently there is no profit motive and even with the support of government subsidies the current systemic risk of failure remains high. ○ Under the current context, it is necessary for government to stabilise PRASA before private intervention is likely to take place. ● The introduction of private participation in the medium to long-term may become more feasible: <ul style="list-style-type: none"> ○ Attracting private participation through project-based contracts is likely to lower the financial burden on government in long-term; increase competition and allow for an influx of private expertise into the industry leading to increased innovation. It is important that these contracts provide a stringent framework which ensures that the items highlighted in PRASA’s mandate remain a core focus of the service being provided. ○ Internationally, PPP models in the commuter rail segment, have followed the concession or management contract model with the private sector being contracted to buy, operate, maintain and in certain instances, own the vehicles. ○ Private projects should be ring-fenced so as to provide a clear path to performance. By structuring the business and its operation in this manner government is also more likely to attract private participants and their investment as the risk will be project specific rather than systemic. ● Examples of these projects may include:⁸⁴ <ul style="list-style-type: none"> ○ Management contracts for the operations and maintenance of ageing ticketing and signaling equipment; ○ Long-term concessions for the design and supply of rolling stock and infrastructure ○ Private participation on these projects should be based on a transparent bidding process where a clear mandate is provided alongside participant responsibilities and performance expectations. ○ In order to attract investment in the medium-term it is likely that government may need to subsidise these projects ● The short-term improvement of governance and performance within PRASA (or the potential for a new decentralised system) is key to the success of these partnerships going forward.
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⁸⁴ Government should also consider the contracting which has taken place in the operation of the Gautrain, and how lessons from the relative success of the service can be used more broadly.