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ORIGINAL ARTICLE

The role of private finance in infrastructure development in South Africa—A critical assessment

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ABSTRACT

This paper assesses South Africa's massive infrastructure drive to revive growth and increase employment. After years of stagnant growth, this is now facing a deep economic crisis, exacerbated by the COVID-19 pandemic. This drive also comes after years of weak infrastructure investment, widening the infrastructure deficit. The plan outlines a R1 trillion investment drive, primarily from the private sector through the Infrastructure Fund over the next 10 years (Government of South Africa, 2020). This paper argues that while infrastructure development in South Africa is much-needed, the emphasis on de-risking for private sector buy-in overshadows the key role the state must play in leading on structurally transforming the economy.

Keywords*: blended finance; development; de-risked infrastructure; fiscus; investment; public-private partnerships (PPPs)*

1. Introduction

The South African government is undertaking a massive infrastructure drive in an effort to revive growth and increase employment. This comes at a time when the country is facing a deep economic crisis that has progressively worsened over the past few years. On 3 March, 2020, just two days prior to the first recorded official COVID-19 case, it was announced that the economy was in recession. Gross domestic product (GDP) contracted by 1.4% in the last quarter of 2019, after two previous quarters of recorded negative growth, and the unemployment rate rose to an all-time high of 38% in 2019.[1] The COVID-19 pandemic has worsened the economic crisis in South Africa. Statistics South Africa reported approximately 2.8 million job losses in the third quarter of 2020 (Statistic South Africa, 2020). Hunger and poverty rates have increased substantially over the six-month lockdown period: 37% of households reported they ran out of money for food in June 2020, double that in 2016 (Bridgman et al., 2020). The International Monetary Fund (IMF) and South African Reserve Bank predict a 2020 GDP contraction of 8.2% and 8%, respectively (International Monetary Fund, n.d.).

The infrastructure drive also comes after a long period of weak infrastructure investments and a widening infrastructure deficit. This

[1] Using the expanded definition of unemployment.

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is particularly relevant in rural areas where socio-economic conditions are characterized by overcrowding, deep levels of poverty, and inadequate access to basic public services, such as water and sanitation.

In response to this crisis, the government has tabled two key measures aimed at reaching a budget surplus within the next five years. First, with debt levels increasing substantially, not least because of increased debt triggered by the pandemic, the government remains committed to closing the budget deficit and stabilizing the national debt-to-GDP ratio; total non-interest expenditure cuts between 2020 to 2024 is expected to total R300 billion (about US$18 billion) (National Treasury, 2020a). Second, these austerity measures have rationalized the need to source finance from outside the fiscus to meet socio-economic and infrastructure development goals. The government's plan is to mobilize up to R1 trillion in financing from the private sector through the Infrastructure Fund over the next 10 years (Government of South Africa, 2020). It is envisaged that this Fund will finance large infrastructure projects, which will incentivize, or leverage, private finance by de-risking infrastructure investments.

This paper tackles the latter measure relating to the Infrastructure Fund. The paper sheds light on the complexities of greater private sector, and specifically private capital, participation in infrastructure development. The South African government needs to address the deep inequalities in infrastructure provisioning. Infrastructure projects involve a number of risks, particularly for underdeveloped areas that require substantial resources. Because of this, the private sector is reluctant to invest in infrastructure projects that have higher risks than expected returns. Governments have therefore undertaken measures to de-risk infrastructure investments using various financing instruments that are most commercially attractive to private investors. The three most prominent de-risking measures will be the focus of this paper:[2]

1. ***Blended finance:*** The government intends to leverage private finance by providing concessional finance from development finance institutions. These blended finance instruments can take various forms, wherein the government supplements private sector participation by providing incentives, such as interest rate subsidies, revenue guarantees, and capital grants.

2. ***Converting infrastructure into an asset class:*** Infrastructure will become a new asset class, wherein funds invested in infrastructure projects, such as loans, will be repackaged into financial instruments to be traded in financial markets.

3. ***Public-private partnerships (PPPs):*** An already established method of infrastructure financing in South Africa, PPPs are expected to be substantially ramped up over the next few years. Processes are underway to deregulate the PPP framework to make it easier to set up PPPs and attract private investors.

We contextualize this current drive for infrastructure investment within the broader international development landscape, which has seen the proliferation of private sector involvement in numerous facets of development over the past decade, including as the sole legitimate partner in bridging the global infrastructure gap. Multinational development banks, such as the World Bank, have been at the forefront of promoting the use of blended finance and PPPs to achieve the Sustainable De-

[2.] The research methodology used in this paper is mostly from secondary data sources; however, several interviews were conducted with key stakeholders who have been immensely helpful in informing the research.

velopment Goals (SDGs) by 2030. Other international initiatives, such as the G20's *Roadmap to Infrastructure as an Asset Class*, also advance a greater role for private capital, particularly from institutional investors. In South Africa, local development banks, such as the Land Bank and the Development Bank of Southern Africa (DBSA), have joined forces with the government to provide concessional capital to leverage private finance for developmental purposes.

This paper critically assessed the potential impacts of de-risking infrastructure based on the potential costs to the fiscus, risk allocation to the government, governance and poverty reduction, and sustainable development outcomes. The paper finds that there is an urgent need for a unified, coherent governance framework that prioritizes developmental impacts and regulates greater private participation in infrastructure development. More needs to be done by involved stakeholders—the government, development finance institutions (DFIs), and private actors—to ensure that all processes are open and transparent, given that the Infrastructure Fund has a clear developmental mandate. We question the governments' focus of investing primarily in large-scale "bankable" projects, as these projects often yield high profits for private actors at the expense of smaller-scale investments that may have greater developmental impacts. Such mega infrastructure projects tend to have damaging social and environmental implications and detract from much-needed social infrastructure in areas and communities that need them the most.

The structure of the paper is as follows. In Section 2, the international landscape is outlined and an overview is provided of the key organizations involved in catalyzing private investment in global development. In Section 3, the infrastructure deficit in South Africa is described and then a critical assessment is given of PPPs as a key mechanism of infrastructure development in South Africa to provide an analysis of blended finance and infrastructure as an asset class, as applied in the context of a developing country such as South Africa. The final section provides recommendations and concluding remarks.

2. International drive for de-risking infrastructure

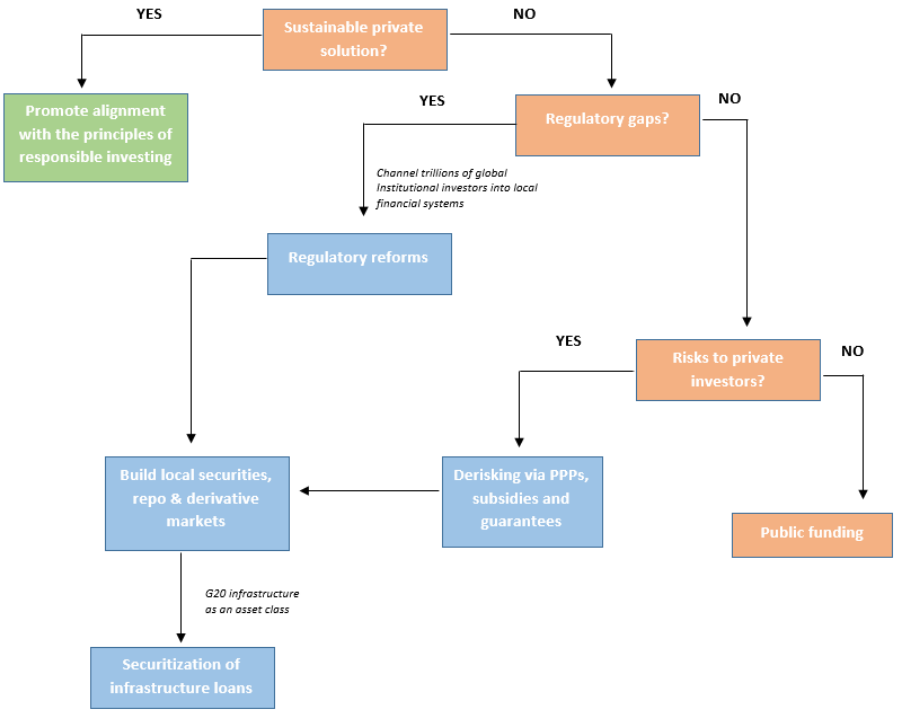
There is no question that it will take substantial resources to achieve the Sustainable Development Goals (SDGs). The estimated cost for lower- to middle-income countries will be upwards of $1.5 trillion to $2 trillion per annum between 2015 and 2030 (Vorisek and Yu, 2020). This will be made worse as countries redirect resources to recover from the COVID-19 pandemic. The required resources include developing sustainable infrastructure, in the context of increased efforts to curb climate change. The Organisation for Economic Co-operation and Development (OECD), for example, estimates that total global infrastructure investment requirements by 2030 for transport, electricity generation, transmission and distribution, water, and telecommunications to be over $71 trillion until 2030.

The response by development institutions and OECD member countries has been the centering of private financing, particularly from institutional investors, ranging from public-private partnerships (PPPs) to the securitization of infrastructure into an asset class. The OECD adds that "[t]here is a widespread recognition that governments cannot afford to bridge these growing infrastructure gaps through tax revenues and aid alone, and that greater private investment in infrastructure is needed" (OECD, 2015a, p. 5). This agenda is encapsulated in key development initiatives including, but not limited to, the World Bank's *Billions to Trillions* agenda and its *Maximizing Finance for Develop-*

ment (MFD) initiatives, as well as the G20's *Infrastructure as an Asset Class* roadmap document. The key proposition is that the mobilization of substantial private savings—estimated at over $12 trillion—from global institutional investors, such as pension funds and insurance companies, can both finance and profit from investments in strategic infrastructure.

This turn to private sector-led development represents a shift in international development from public financing—the focus of Millennial Development Goals (MDGs)—to global private finance as critical to achieving the SDGs. A key outcome arising from this shift is a "private finance first" approach to infrastructure financing. It sees the crowding-in of global finance as *sine qua non* to meeting SDG targets. This is achieved by re-engineering financial markets through the creation of investable markets and assets (such as infrastructure) on behalf of private capital and embeds de-risking as the key avenue for private investment (Gabor, 2020). It encourages governments to change the policy and regulatory environment to create more favorable conditions for private investment (Griffiths and Romero, 2018). For example, in South Africa, processes are currently underway to amend Regulation 28 of the Pension Fund Act to accommodate private retirement funds to invest in alternative asset classes, such as infrastructure asset classes (Jooste and Planting, 2020). Regulation 28 has no provisions for infrastructure projects and limits total investment in particular asset classes to 10%. These asset classes include alternative, mostly unlisted, investments in private equity, hedge funds, and unlisted property. The key proposal underway is to increase this cap to 15% to accommodate greater investments in alternative infrastructure private equity investments.

These private-first dynamics are encapsulated in the "cascade" approach by the World Bank (see **Figure 1**), where private sector investment in infrastructure is institutionally prioritized and embedded through reforms, and new markets are created for de-risked instruments. It sidelines public



Source: Gabor (2020)

Figure 1. World Bank's cascade approach to infrastructure investment.

financing and systemizes the necessary conditions for the ease of private flows (Gabor, 2020). Risks and regulatory gaps are bypassed by the use of de-risking methods, paving the way for institutional investors to invest in more speculative capital, such as trading derivatives on the stock markets.

Proponents of the cascade approach argue that the creation of infrastructure financial instruments will match the long-term financing needs of these types of lengthy projects with institutional investors' appetite for long-term assets. However, once these assets are traded on secondary markets, there is no guarantee that they will only be held by long-term investors (Müller, 2015). Asset managers with shorter-term or more speculative investment strategies, such as hedge funds or private equity funds, will find it easier to enter and exit these financial instruments with fewer regulatory restrictions. This inherent instability and volatility of short-term financial market trading will not translate into the sustainability of project financing (Müller, 2015).

The cascade approach further embeds the notion that drawing on private financing to allow the government to preserve limited fiscal resources, while focusing on development needs, as justified by fiscal consolidation measures. We see the popularization of the de-risking narrative in South Africa as the country undergoes extensive budget-reducing measures over the next five years (National Treasury, 2020a). Blended finance, for example, features as a key investment mechanism of the newly-established Infrastructure Fund. In the press statement for the signing of the Memorandum of Agreement for the Fund, it was noted that blended finance "includes financing from the local capital market and international financing institutions as a complement for broader budgeting reforms that the government is undertaking to address problems in the infrastructure value chain" (National Treasury, Department of Public Works and Infrastructure, Infrastructure South Africa, and Development Bank of Southern Africa, 2020, p. 1). De-risking infrastructure is also featured strongly as a vehicle for job creation and as a vital part of the COVID-19 economic recovery. Through the creation of the Infrastructure Fund, the government has included blended financing mechanisms, PPPs, and infrastructure asset classes as a means to catalyze up to R1 trillion (about $61 billion) of investment from institutional investors over the next decade. There are also concerted attempts to reconfigure the regulatory framework for these mechanisms, for example, through loosened regulations on PPP procurement and the de-regulation of the Pension Funds Act to allow for investments in infrastructure asset classes.

In the next sections, we provide an overview of the suggested de-risking instruments, which will serve as a basis for understanding its potential implications, which will be discussed in Section 3.

2.1. Blended finance

2.1.1 Definitions and methodology

Despite the growing interest in blended finance, there is no single, unified definition or common framework. This means that there are different methods that define how much private finance has been mobilized under blended finance projects. This has serious implications for the transparency of the process, data collection, and project accounting (Bayliss et al., 2020). In the case of the South African government, it is promised that the Infrastructure Fund will mobilize substantial private capital over the next ten years, but without a framework that identifies good practices and sound project accounting, it will be difficult to hold the government and its partners to this promise.

The term "blended" often describes the mixture of public and private financing. However, dif-

ferent institutions have various understandings of what "public finance" should be leveraged, depending on interpretation and data collection methods. For example, Convergence Finance, a global network for blended finance, defines blended finance as the "use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development" (Convergence Finance, n.d., para. 1), while also acknowledging that, "there are as many as 15 blended finance definitions publicly available, which collectively describe blended finance as a mechanism, approach, instrument, and asset class" (Convergence Finance, 2019, p. 44). Convergence's definition restricts "catalytic capital" to refer to concessional financing from public or philanthropic institutions.

Comparatively, the OECD defines blended finance differently as "the strategic use of development finance for the mobilization of additional finance towards sustainable development in developing countries" (OECD, n.d., para. 1). This definition emphasizes the use of development finance, which does not preclude a broader range of financial sources, such as philanthropic finance, Official Development Assistance (ODA), and multilateral development bank (MDB) finance. This definition aligns with the current narrative of blended finance within the Infrastructure Fund; in a document written for the Sustainable Infrastructure Development Symposium South Africa (SIDSSA) hosted in June 2020, the Department of Public Works defines blended finance as "combining capital from the public and private sectors, development finance institutions and multilateral development banks" (National Treasury, 2018, p. 4). It lists potential concessional finance contributors from DFIs, such as the China Development Bank, the World Bank, and the New Development Bank.

2.1.2 Project structures for blended finance

Blended finance transactions can be structured to create a favorable risk-return in a variety of ways. These are summarized in **Table 1**, which shows examples of blended finance instruments. The OECD acknowledges that despite the different ways blended finance can be structured, donor countries have relied "on instruments that traditionally have been used in aid programmes such as grants, loans and guarantees" (OECD, 2018a, p. 25).

While blended finance is a nascent mechanism in South Africa, globally these investments have increased in size and geographical scope. The OECD reported that the amount of private finance mobilized through such mechanisms between 2012 and 2017 was $157.2 billion. Between 2017 and 2018, the total global private finance mobilized increased by 28% to $48.5 billion. Of this, guarantees accounted for 39% of private finance mobilized from development finance interventions. **Figure 2** shows that the most-used mechanism was guarantees, followed by equity and syndicated loans.

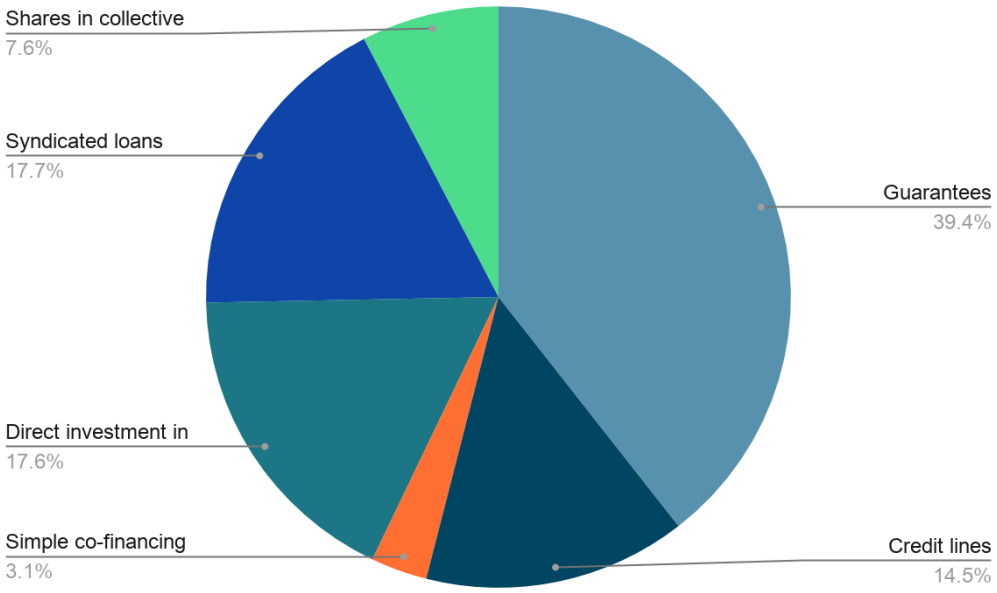
Sub-Saharan Africa (SSA) is a key target market for blended finance. According to Convergence Finance, 37% of blended finance transactions between 2016 and 2018 were conducted in SSA, compared with just 3% in Europe and Central Asia (combined) and 17% in South Asia (see **Figure 3**). An ODI report on blended finance in low-income countries found that about 73% of institutional commitments to blended finance went to SSA between 2013 and 2017.

Despite numerous promises by development institutions on the magnitude of private finance that can be mobilized, blended finance is not raising the scale of private investment anticipated. From Figure 3, we see that blended finance transactions have declined in most regions between 2010 and

Table 1. Blended finance instruments

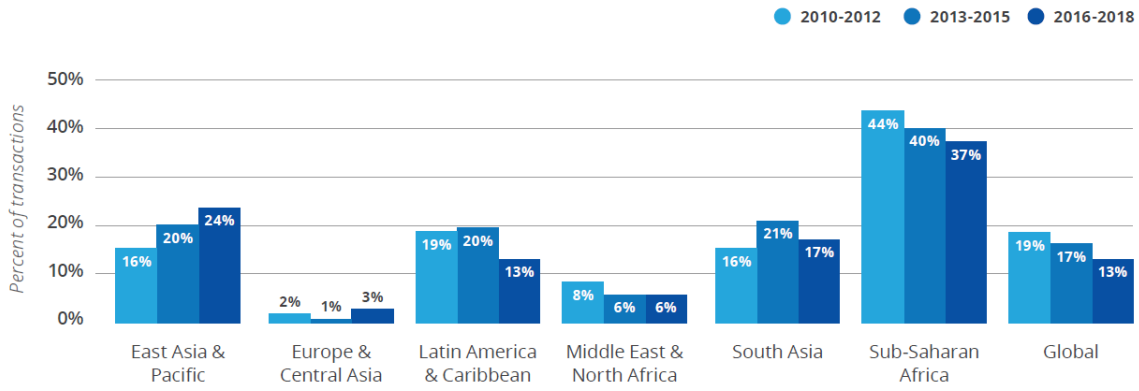
De-risked, blended instrument	Description
Technical and advisory assistance	Public finance covers transaction costs, impact studies, and other advisory costs to strengthen the commercial viability of the project.
First-loss guarantees to lenders (senior debt guarantees)	Senior debt guarantees are loans secured by collateral (assets) that must be paid off before any other debts when a company goes into default. Their priority position makes senior debts less risky for private investors (when the government takes on junior debt, which only has a secondary claim on company assets). As a result, the interest rates and repayment terms for senior debts tend to be more favorable than those for junior debts. A junior debt is a debt that is lower on the debt hierarchy than other debt claims. It is provided without any collateral to back it and is often subject to a creditor agreement with the senior lender.
Investment grants	Capital transfers in cash or in kind made by governments to private investors to finance all or part of the costs of their acquiring fixed assets.
Equity investments	Institutional investors take a percentage of the ownership of the project.
Syndicated loans	A syndicated loan is one that is provided by a group of lenders and is structured, arranged, and administered by one or several commercial banks or investment banks known as lead arrangers. DFIs and national governments can join loan financing with a commercial lender, which reduces interest rates for private investors.
Credit lines	Credit lines are a specific form of debt instrument. Development banks extend credit facilities to local financial institutions (LFIs) in developing countries that LFIs can draw down (or repay) as needed, with the aim of increasing access to finance for particular borrower segments, such as small enterprises.
Guarantees	Development banks provide guarantees to private investors for risks such as non-payment (guaranteeing revenue) and interest rate changes.

Source: Pereira (2017)



Source: OECD (2019)

Figure 2. Percentage of mobilized finance (2012–2017).

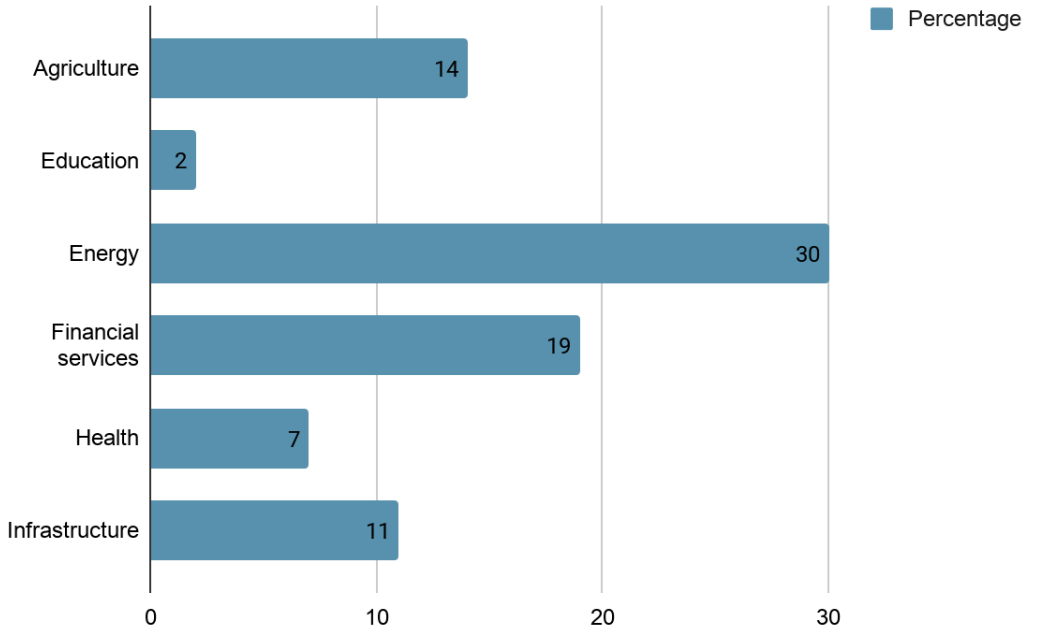


Source: Convergence Finance (2019)

Figure 3. Blended finance transactions by target region (2010–2018).

2018. In its 2019 annual report on blended finance, Convergence Finance acknowledged that they "do not see evidence that blended finance is scaling at an efficient rate" (Convergence Finance, 2019, p. 45). Similarly, ODI argues that mobilizing "billions-to-billions" is more plausible than the prevailing "billions-to-trillions" narrative articulated by the World Bank. Research by ODI also shows that while there have been successful blended finance initiatives by MDBs and DFIs, these have fallen from an annual average of $37 billion between 2008 to 2014 to just $13 billion between 2015 and 2017 and are not mobilizing at anything like the scale required or anticipated (Bayliss et al., 2020).

An added concern is that blended finance is most prominent in areas where the business case is clearer, such as energy and infrastructure, compared with less commercially attractive areas in social sectors (United Nations, 2017). **Figure 4** shows the portion of blended finance deals made for every sector. Energy is the highest sector at 30%, compared with education and health, which account for



Source: OECD (2019)

Figure 4. Blended finance transactions targeting SSA by sector.

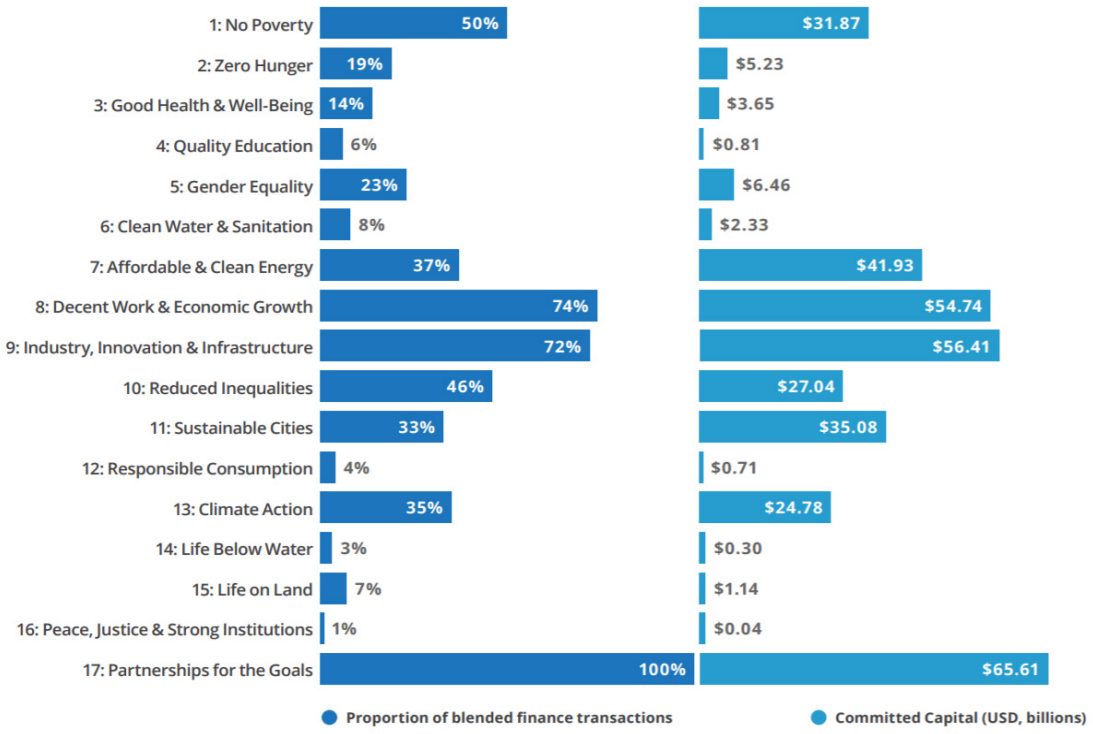
9% combined. This sectoral distribution of finance reflects the private partners' interests in the potential profits from the comparatively larger scale of economic infrastructure (Attridge and Engen, 2019).

Blended finance in infrastructure has also overshadowed other investments in less commercially attractive sectors of the SDGs. In **Figure 5**, Convergence Finance's latest blended financing estimates show that investments in SDG 9 (industry, innovation, and infrastructure), for example, has substantially more committed total capital between 2014 and 2019 compared with those in other SDGs, such as SDG 5 (gender equality) and SDG 4 (quality education).

Despite data limitations and a fragmented framework for accounting, we are able to draw two key conclusions relevant to this study. First, despite global interest and the prevailing upbeat narrative, blended finance may not mobilize the expected private finance at the expected scale. The interest in blended finance from the private sector is not homogenous across sectors. Second, private investors are reluctant to invest in high-risk "social" infrastructure projects—such as services that require low-cost user charges—and focus primarily on investing in "economic" infrastructure projects that have a better investment case (Bayliss and van Waeyenberge, 2017). While investment in economic infrastructure is much needed, this observation points to the objective of private capital, which is profit maximization and not achieving developmental outcomes.

2.2. Infrastructure asset classes

Transforming infrastructure into an asset class requires repackaging finance invested in an infrastructure project (such as a loan) into tradeable financial instruments to be bought and sold on the market. An asset class is a type of investment that has similar characteristics, such a profit and risk



Source: Convergence Finance (2020)

Figure 5. Blended finance transactions aggregated according to SDGs (2014–2019).

profiles, and behaves on the financial market in a similar manner (Griffiths and Romero, 2018). The classification of different asset classes assists investors in diversifying their investment portfolios, which allows them to reduce risk and increase the likelihood of profits. Asset classes traditionally include securities (stocks, bonds, derivatives, etc.) and cash, real estate, and raw materials (for example, precious metals). Infrastructure investments are increasingly treated as a new, or alternative, asset class, providing new sources of profits and greater risk diversification.

The rights to the repayment of the infrastructure loan are pooled with other similar loans and transferred to a separate legal entity (a special-purpose vehicle, or SPV) that issues securities (or bonds) to the capital market. Subsequently, insurance companies in this market credit-rate the securities based on different risk appetites, called tranching. Tranching determines the priority of payment of principal and interest from the underlying loans, which therefore carry different interest rates. **Figure 6** provides an illustration of the dynamics of making infrastructure into an asset class. The AAA-rated tranche (senior debt) has priority of payment over subordinated debt and junior tranches and yields a lower interest rate to match its (relatively) safer profile, a process of debt classification known as collateralized debt obligations (CDOs) (Gabor, 2019). CDOs are structured products that purchase and pool tradable assets, such as the riskier tranches of assets, and then issue securities in tranches that can, in turn, be repackaged. The aim is to recycle those tranches that cannot be easily sold to investors into higher-rated products (Gabor, 2019). After the securities are tranched, they are then sold to institutional investors, where returns are derived from trading the securities on the financial market.

CDOs, and the securitization of asset-backed securities more broadly, played a central role in the

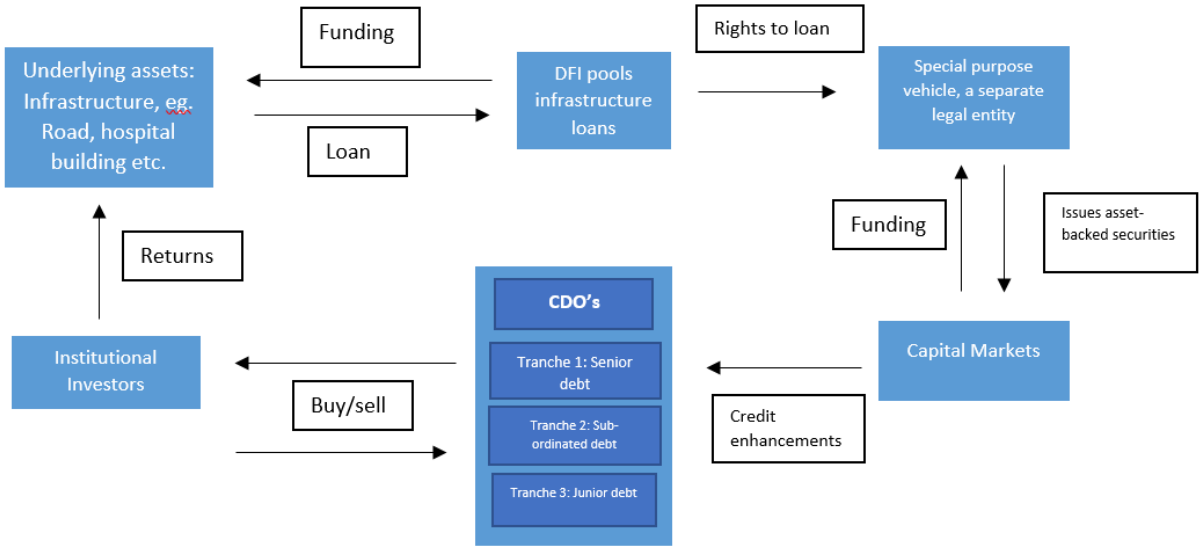


Figure 6. Basic mechanism of making infrastructure into an asset class.

events leading up to the 2007/8 financial crisis, given the inherent riskiness of these financial products. By combining the risk from debt instruments, CDOs make it possible to recycle risky debt into AAA-rated bonds that are incorrectly considered safe for long-term investors, such as retirement funds. During the 2007/8 financial crisis, this encouraged the issuance of subprime, and sometimes subpar, mortgages to borrowers who were unlikely to make good on their payments.

Infrastructure asset classes can also be further de-risked through blended finance mechanisms by, for example, public-guaranteed revenue to investors. In theory, asset bonds are repaid using income from a project, but because infrastructure projects often take a long time to complete, repayments would need to start well before income begins to flow, which a government or DFI could step in to de-risk. This is most relevant to investments in particularly high-risk sectors, such as rural roads and water or sanitation, which will yield little or no commercial income, requiring government intervention.

This complex system of the securitization of large infrastructure investments, embedded within a global system of newer and riskier financial products, raises many concerns around regulation and financial stability. As more assets are merged and split, the risks this carries grow, and the practice of making CDOs, and securitization more broadly, becomes more elaborate and difficult to regulate. This has also seen the emergence of more unregulated financial activities, termed shadow banking, which promotes unregulated predatory market transactions and greater financial market fragility.

This has implications for the sustainability of financing for large-scale infrastructures that have a developmental agenda. Fiscal resources in developing countries risk being used to make these products attractive to private capital (Bayliss and van Waeyenberge, 2019). Greater private finance, with more financial engineering practices, in infrastructure exposes governments, already lacking in capacity, to greater risk of corporates exploiting potential loopholes created in these processes. Research by World Customs Organizations, for example, shows how one of the primary methods of il-

licit financial activities in developing countries is a result of trade misinvoicing by corporations that deliberately misreport the value, quantity, or nature of goods and services in order to evade taxes, take advantage of tax incentives, avoid capital controls, or launder money (World Customs Organization, 2018).

2.3. Public-private partnerships (PPPs)

The turn to private finance has also seen the promotion of PPPs, a highly contested and controversial form of infrastructure financing. In the United Kingdom, for example, PPPs, in their entirety, were officially abolished from UK policy because of their high fiscal risks and resultant costs to the taxpayer (Davies, 2018).

Despite the surrounding controversy, the South African government has doubled down on PPP-led service delivery. The recent Economic and Reconstruction Plan, the government's proposal to revive the economy, notes:

> Efforts will be strengthened to attract private sector investment in the delivery of infrastructure as part of building broad-based Public, Private Partnerships (PPPs). This will include a review of the PFMA [Public Finance Management Act] and the MFMA [Municipal Finance Management Act] to facilitate PPPs (Government of South Africa, 2020, p. 10).

As with blended finance, there are a number of official definitions of PPPs, and there is no universally agreed definition or framework that governs their limits. They are generally characterized by long-term contracts between the public and private sectors, often in support of large, capital-heavy projects, such as the provision of infrastructure assets. According to the South African National Treasury Regulation of PPPs, a PPP is defined as contract between a government institution and/or municipality and a private party where the private party performs an institutional function and/or uses state property in terms of output specifications, according to which substantial financial, technical and operational risks are transferred to the private party, while the private party benefits through the unitary payment from a government budget and by receiving user fees (National Treasury, 2004, p. 44).

PPP arrangements take various forms, based on the contractual arrangements involved and the specified allocation of risk over a specified time period. In this sense, they vary in the degree of private sector involvement. On the one end of the spectrum, there is full responsibility of the public actor for the provision of the public asset or service; at the other end, there is full responsibility of the private actor. Ideally, a PPP usually falls somewhere in-between these extremes, as a way to more evenly share the risk. However, this is often not the case in practice (United Nations Conference on Trade and Development (UNCTAD), n.d.). First, they tend to carry high costs and lock in governments into long-term contracts that are difficult to alter (Eurodad, 2018). PPPs are seen as attractive to governments because they are considered off-balance sheet transactions for projects that take several years to be implemented (this is defined as a contingent liability). However, contingent liabilities encourage policymakers to carry out projects that may not be affordable, even in the medium-to-long term. In the event that the PPP fails, it will require the public participant to reimburse the private sector, which often carries high costs. Regardless, the potential costs of PPPs are often socialized in the event of failure, and privatized in the event that it succeeds.

Second, PPP contracts are complex to negotiate and implement, and contractual terms are often not open to the public. Large-scale infrastructure projects, which already carry governance difficulties, result in poor planning and a lack of capacity of public officials to oversee projects. This is heightened under PPP arrangements because of their complexity and lack of transparency. Research from ten PPP case studies from several countries by the European Network on Debt and Development (Eurodad), for example, shows that all PPPs required lengthy (re)negotiations due to the complexity of contracts (Eurodad, 2018).

Third, they are often criticized for not catalyzing investments in projects with high social impact and lower financial returns. As with blended finance, private investors are concerned with the best commercially viable projects, which are often at odds with developmental impacts.

2.4. Summary

In Section 2, we described the various de-risking investments underpinned by South Africa's latest infrastructure drive. In all three mechanisms, it is envisioned that limited public resources will be used to catalyze private capital investment. However, these mechanisms are not without risk. In the next sections, we delve deeper into the infrastructure landscape in South Africa and assess the potential impacts of these mechanisms.

3. Developing a framework for assessing potential impacts of de-risked infrastructure

The following section provides an overview of the state of infrastructure financing in South Africa and outlines the key challenges to infrastructure development. This will inform a critical assessment of the potential impacts of de-risked infrastructure and its effectiveness in providing equitable access to adequate infrastructure. We draw on the framework adopted by Romero to determine whether de-risked projects will deliver their potential benefits as outlined in the Infrastructure Fund's terms of references (Romero, 2015). This framework was originally developed specifically for a systemic assessment of the effectiveness of PPPs. However, it can be generalized to include other forms of de-risked public-private contracts, such as those underpinned by blended finance instruments, discussed in Section 2.

The framework includes the following four components in its assessment of de-risked infrastructure projects:

Fiscal implications: assessing the potential costs and fiscal implications of de-risked infrastructure investments. Given that the government is tasked with under-writing infrastructure, this could leave it shouldering most of the costs through high project costs and increased contingent liabilities.

Risk assessment: assessing the risks undertaken by the government, in inherently risky large-scale infrastructure projects, when it absorbs more risk to attract private investment.

Poverty reduction and sustainable development outcomes: assessing the sustainable development impacts of de-risked infrastructure and whether these investments have the potential to contribute to reducing poverty.

Governance systems in place: assessing the institutional frameworks in place that entrenches (or not) transparency and accountability.

The analysis finds that de-risked infrastructure investments have the potential to carry greater costs to the fiscus than does publicly provided infrastructure. It also outlines the potential for other weaknesses, such as low poverty reduction and poor development outcomes, and for dangers to governance. This is mainly for two key reasons:

1. The government absorbs more risk than it ordinarily would in order to attract private investment and replace its own declining public investment in infrastructure.

2. Without sound, strict governance measures put in place throughout the project lifecycle, the government stands the risk of repeating mistakes related to large-scale infrastructures. In the government's efforts to attract private investors, it is important that the government adheres to high transparency standards.

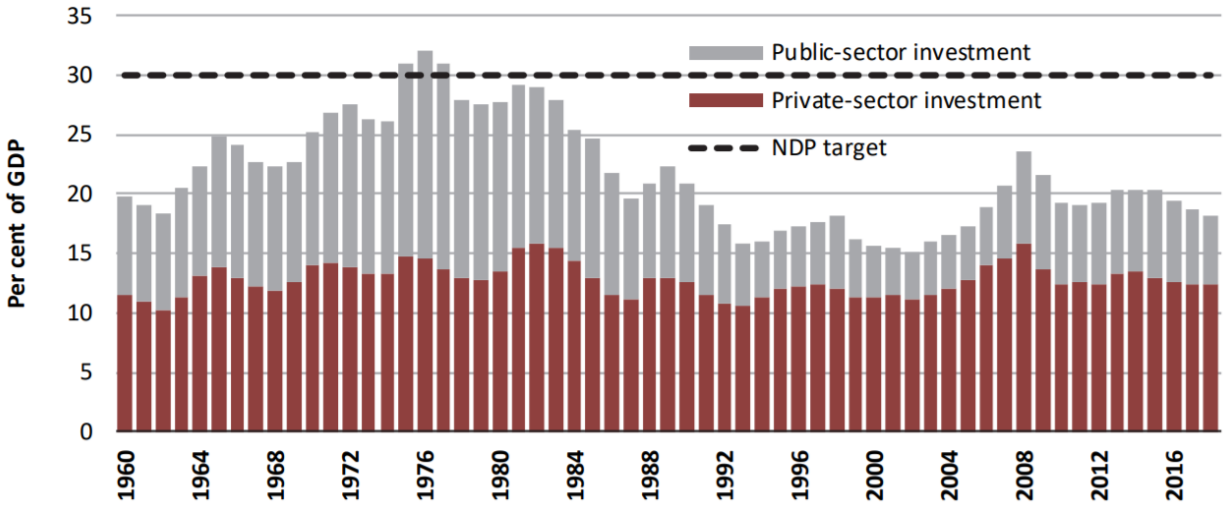
3.1. Infrastructure in South Africa

Infrastructure plays a prominent role in economic policy in South Africa. The National Development Plan (NDP) adopted in 2011, for example, sets out an ambitious goal to achieve an infrastructure investment level of 30% of GDP by 2030 (National Planning Commission, 2011). Most of the government's industrial policies center on infrastructure investment as a vital driver of growth and job creation. In the 2020 Supplementary Budget, tabled three months after the national lockdown triggered by COVID-19, the National Treasury reaffirmed that infrastructure spending will play a pivotal role in spurring the post-COVID-19 economic recovery through reforms that would catalyze greater investments from the private sector.

This emphasis comes in the context of low levels of gross fixed capital formation (GFCF) over the last three decades, with public investment being half of what it was in much of the 1960s, 1970s, and 1980s. In 2019, GFCF stood at just over 18% of GDP. This compares poorly with the average GFCF for middle-income countries of around 30%–35%. **Figure 7** shows that public investment has declined since the late 1980s, while private investments have remained consistent at between 10% to 16% over time.

To date, large-scale "mega infrastructure"[3] projects are featured as the hallmark of infrastructure investment, and often come with high cost overruns and late completion (Reboredo, 2019). A majority of these projects have involved some form of private sector participation—such as the Gauteng Freeway Improvement Project, the Gautrain Rapid Rail Link system, and the Kusile and Medupi coal power plants. They reveal weak project management and poor governance in overseeing these large-scale projects. The time and cost overruns on the Kusile and Medupi coal power plants provide an indication of the degree to which mismanaged mega projects can negatively impact the economy through high debts burdens. The two projects have failed to resolve the energy shortfall that they were planned to address, resulting in severe costs to the economy. This has caused severe damage to economic growth due to the resultant rolling blackouts, and left Eskom reliant on a three-

[3] According to the Oxford Handbook of Megaproject Management (2016), edited by Bent Flyvbjerg, founding Chair of Major Programme Management, Saïd Business School, University of Oxford, "[m]egaprojects are large-scale, complex ventures that typically cost $1 billion or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people" (Flyvbjerg, 2016, p. 2).



Source: National Treasury (2019)

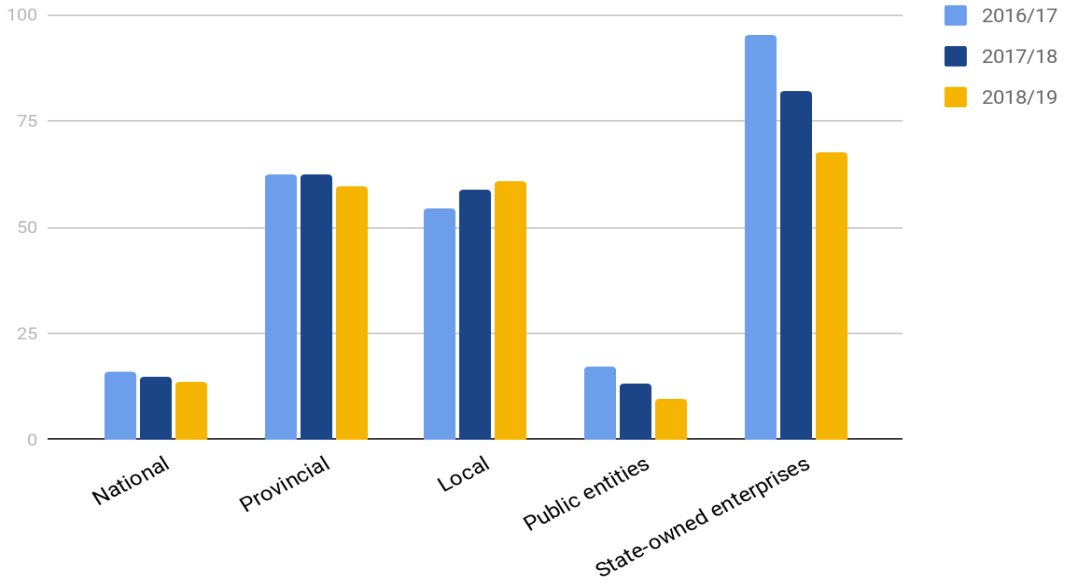
Figure 7. Public and private investments in infrastructure in South Africa.

year, R128 billion government bailout to remain solvent, and has placed the sovereign balance sheet at risk (Phalatse, 2020).

While many strides have been made in providing access to basic infrastructure since 1994, such as in electricity and water, a number of criticisms are leveled against the efficacy of the infrastructure development. First, these infrastructure developments have not managed to reach large areas of South African rural areas that lack access to basic services. Public services and infrastructure are more developed in urban areas than in rural areas, where many of the poorest households reside. A key reason for underdevelopment in rural areas is a result of South Africa's history, in which areas inhabited by Black people were systematically underfunded.

Second, despite infrastructure's salience in post-apartheid economic policy, public infrastructure expenditure has progressively declined since the early 1980s (see Figure 7).[4] This is also true in recent years. Between 2014 and 2018, the average real spending on infrastructure by the general government (that is, national, provincial, and local government) declined by an average of 0.8% year-on-year (National Treasury, 2020b). In 2016/17 and 2017/18, total infrastructure spending amounted to R249 billion and R216 billion, respectively, reflecting a 13% reduction (National Planning Commission, 2011). The average infrastructure spending by state-owned enterprises (SOEs) has also declined by an average of 4.9% year-on-year between 2014 and 2019. In addition, the construction sector has shrunk considerably over the past decade and is expected to contract by 14.2% in 2020. South Africa's 123 provincial government departments recorded a decrease in infrastructure spending—referred to as capital expenditure—of almost R2 billion in 2018/19. This represents a fall of 5.4% compared with that in 2017/18. At the municipal level, infrastructure spending has also declined, despite slight increases in the local budget between 2016 and 2019. Municipalities that rely on revenues from user fees have reported consistent underpayments from users unable to afford fees for basic services. These declines are shown in **Figure 8**.

[4] "Infrastructure" is defined broadly, including spending on new assets; replacements; maintenance and repairs; upgrades and additions; and rehabilitation, renovation, and refurbishment of assets. Capital and interest payments are also included in the definition. In contrast, "capital spending" typically excludes maintenance and finance charges.



Source: National Treasury (2019)

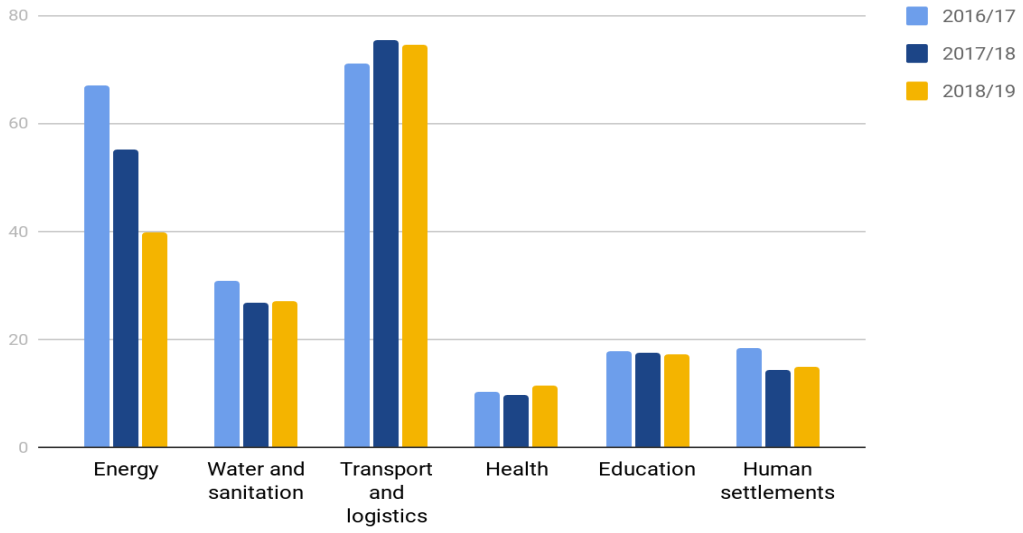
Figure 8. Public sector infrastructure estimates (2016–2019).

Third, greater emphasis on large-scale infrastructure projects has resulted in financing being directed towards more profitable areas of infrastructure, termed economic infrastructures, such as in transport and energy, and less on social infrastructures, such as in healthcare and education infrastructures (UNCTAD, 2019). This has implications for the potential of the current infrastructure drive in reaching less-developed areas that need infrastructure the most.

Fourth, key SOEs have not maintained existing infrastructure as a result of corruption and poor financial management (Financial and Fiscal Commission, 2015). Bailouts for SOEs have become an increasing liability to the fiscus, despite the importance of SOEs in providing essential services. In 2018 alone, government guarantees to SOEs increased by R51.5 billion to bail out key SOEs, such as the power utility provider Eskom and the national carrier South African Airlines.

Government investments in health, education, and human settlements infrastructure have been low, compared with those in other sectors, despite new investments and maintenance deficits in all three. **Figure 9** disaggregates infrastructure spending according to the various types of infrastructures. Infrastructure in energy has steadily declined over the 2016–2019 period owing mostly to the inability of Eskom to address its financial and operational issues. Public healthcare facilities are aging and not maintained adequately. There is also disparate access to health facilities, owing mostly to the lack of quality health facilities in informal and rural areas; according to the 2017/18 National Education Infrastructure Management System (NEIMS) Report, 269 schools in South Africa lack access to electricity (Department of Education of South Africa, 2018). There are 8,702 schools with pit toilets; nearly half have installed new toilets but have yet to decommission the old dangerous ones. This is all compounded by spatial inequalities and remains a key barrier to access to quality infrastructure.

As public investments in infrastructure decline, the private sector has been called to bridge the financing gap. During the early years of democracy, infrastructure expenditure by the general gov-



Source: National Treasury (2019)

Figure 9. Public expenditure per sector (R billion).

ernment was financed mostly through current revenue (Calitz and Fourie, 2010). The investment in infrastructure by public enterprises was financed predominantly by user chargers (profits) and non-tax income. Given the fall in infrastructure investment from the early 1980s, shown in Figure 7, the private sector has played a greater role in providing finance for infrastructure, becoming a key investor (Makhathini et al., 2020). The impact of the global financial crisis, leading to fiscal reforms—such as debt stabilization—deepened the government's reliance on private investment in infrastructure as the public budget was squeezed; however, the scale of expected private investment was never reached. GDP growth in 2009 was at –1.5% and infrastructure investment was used to play a counter-cyclical role in the economy. In order to do this, the government took on more financing from external sources, particularly loan financing from DFIs and private investors. Greater emphasis was placed on PPPs in meeting infrastructure challenges; however, this struggled to take off at the expected rate. For example, Futuregrowth, a fixed-income investment company, argues that the reasons for lackluster investments are not the result of regulatory challenges in PPPs but the lack of feasible bankable projects, the high macroeconomic risks (driven by a growing debt level), and a weak policy environment (Manga, 2019).

In its newest drive for closing the infrastructure deficit in South Africa, the government has placed a prominent role for private sector financing through the Infrastructure Fund. The Fund's implementation unit, housed within the Development Bank of Southern Africa (DBSA), will facilitate and "speed up the development of projects and programmes" (National Treasury, 2020b, p. 148). The unit aims to build a pipeline of potential projects worth over R1 trillion over the next ten years. According to an official document on the implementation of the Infrastructure Fund, tabled at the Sustainable Infrastructure Development Symposium South Africa (SIDSSA) held in June 2020, the Fund emphasizes the following as criteria for projects:

Be large. According to the document, this is because "the preparation costs for blended-finance projects are prohibitive for small projects and large-scale investment is being targeted" (National Treasury, 2020b, p. 148).

Be suitable for blended financing, with clear and predictable cash flows, sufficiently attractive risk profiles for investors, and the need for some financial support from the government.

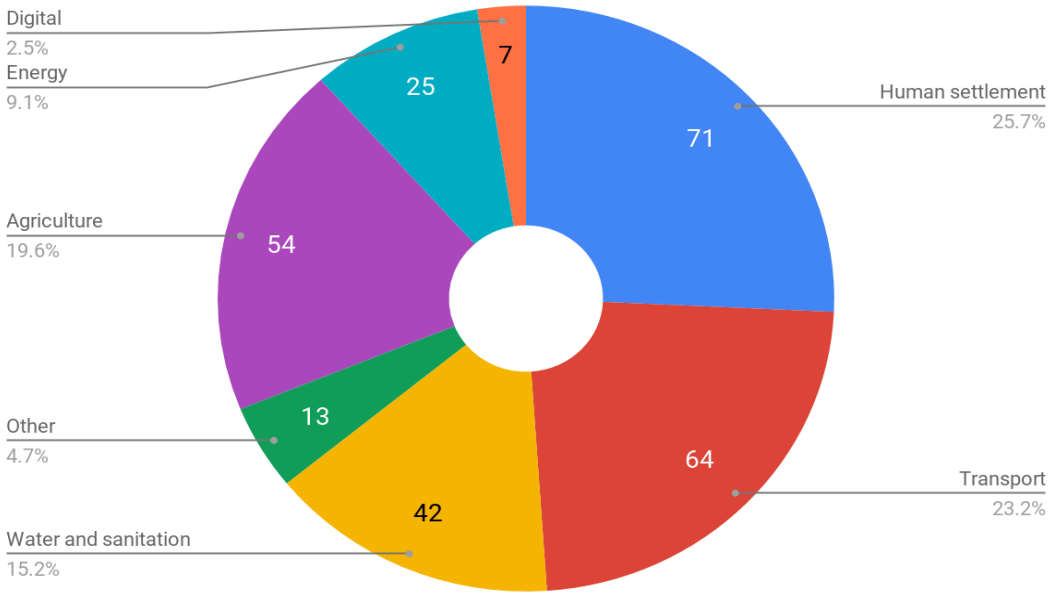
Mobilize private sector skills and resources.

Be aligned with the government's infrastructure priorities.

Be scalable and replicable.

The Fund has a clear development mandate and should therefore be scrutinized as such. In his announcement of the infrastructure-led economic plan, President Cyril Ramaphosa mentioned that the Fund has already mobilized R340 billion for 276 "catalytic projects" to help "transform rural areas, townships and cities and, in turn, fast track investment" (Bhengu, 2020, para. 5). It is argued by the government that through increasing private sector investment in public infrastructure, the Fund will contribute to higher economic growth, productivity, and employment creation. These, and other social objectives, must therefore be considered when assessing projects initiated or supported by the Fund.

The allocation of projects through the fund includes projects in human settlements, transport, water and sanitation, and energy. **Figure 10** shows the latest sector allocations of blended projects that have been gazetted and approved. The largest allocation is in human settlements (71 projects) and transport (64 projects). Interestingly, energy projects feature as a smaller number of projects, despite having the greatest investments for blended finance internationally; this is because Eskom's debt remains a key factor in crowding out further investment in energy infrastructure.



Source: SIDSSA[5]
**Other includes 11 environmental, 1 tourism and 1 mining*

Figure 10. Sector allocation of blended projects submitted and approved.

[5] See https://www.tralac.org/documents/news/3777-sustainable-infrastructure-development-symposium-south-africa-sidssa-23-june-2020/file.html.

3.2. Critical assessment of de-risked infrastructure projects

This section unpacks the key issues that arise from de-risked infrastructure, using a framework that assists in understanding the potential effects of these financing models. It finds that infrastructure development is important for South Africa's economy—it has the potential to increase employment and provide access to critical infrastructure, particularly in areas that have not historically received sufficient funding. The private sector should play a role in providing this critical infrastructure. However, stronger governance and regulatory oversight must be put in place to minimize costs to the fiscus and the economy. Given that de-risking infrastructure is about taking on a greater share of risk, the concern is that the government will take on a much larger share of risks to supplement its lack of financing in this area, which will have severe cost implications if not managed appropriately.

3.2.1 Costs and fiscal implications

De-risked infrastructure finance is often justified on the grounds that there are limited public resources to finance large, long-term infrastructure projects at the level that is required to spur economic development. Fiscal budgets are even more constrained in the context of fiscal consolidation where budget items, such as infrastructure, particularly social infrastructure, are cut. This section argues that de-risked infrastructure has the potential to be more expensive than traditional public financing, as the government takes on more risks on behalf of the private sector. We explore this through additionality, transaction and project costs, and contingent liabilities.

3.2.1.1 Additionality

Additionality is central to claims of "impact" by DFIs and other public investments in using de-risked instruments, particularly blended finance. The OECD refers to additionality as "key to demonstrating the rationale for blending" (OECD, 2018b, p. 3). Additionality is defined as showing that public financing is necessary to solve a market failure (such as lack of quality infrastructure) by providing capital, risk mitigation, and other benefits to a market that is not delivering these services through private actors (Kenny and Moss, 2020). Additionality implies that any DFI (or any other public investment) financing towards a project would be additional, and not a substitute, for private financing (Müller, 2015). More concretely, given the focus on the bankability of the Infrastructure Fund, it is necessary to show why private capital requires public financing for them to invest in the first place. Pereira (2017) provides a useful distinction between *financial additionality* and *development additionality*:

> ***Financial additionality:*** De-risking the project with public finance is necessary to ensure it gets finance and can be implemented.
>
> ***Developmental additionality:*** De-risking helps the project achieve development results.

The two types work in tandem, as without evidence of development impact, the public sector is unnecessarily spending on de-risking mechanisms that are not beneficial to the economy. Without evidence of financial additionality, the private partner is crowding out other potential sources of financing, such as loan financing, that could have potentially been provided at a lower cost.

While demonstrating development additionality will not be difficult in the context of South Africa, which has high infrastructure needs, proving financial additionality is more difficult. The key

risk that this poses is in the bidding process. Low competition rates in tender biddings constrain the governments' ability to choose the least-cost option with the most appropriate developmental impact. For example, in the case of blended finance instruments, without a competitive process, private firms are incentivized to inflate their required possible subsidy to participate in a project. This results in higher costs to the state than necessary. If there is a clear public sector commitment to pursue private investment for budgetary and/or accounting reasons (as opposed to pursuing value for money), then the private sector might create an excessive expectation for public de-risking support even when it is not warranted.

3.2.1.2 High transaction and project costs

All large-scale infrastructure projects, regardless of the types of financing used, entail high transaction costs linked to the risks associated with undertaking the project. In the case of de-risked infrastructure, it is expected that the government will take on more project risks than in traditional publicly-financed infrastructures by supplementing costs associated with transacting with the private sector, such as feasibility studies, guarantees, and subsidies. Large-scale infrastructure projects also have large costs associated with negotiating, preparing, and managing projects.

Poor project planning and selection can trigger unexpected costs throughout the long time-frame of the project. An example of the potential of large costs shouldered by the government is the PPP to build and operate prisons facilities in Bloemfontein and Louis Trichardt in 2002. While both prisons were fully operational within two years, the cost to the government was over double the expected amount (over R2 billion at the time of contracting). This was because of improper feasibility studies that established affordability limits prior to procurement. Given the difficulty of assessing a counterfactual to this scenario—whether the public sector would be more efficient at providing prisons—it is important to also consider strengthening state capacity in providing infrastructure, regardless of the share of public and private funding.

3.2.1.3 Contingent liabilities

Contingent liabilities are guaranteed payments to private investors to compensate them in the event that the circumstances of the project materially change (Sfakianakis and van de Laar, 2012), for example, if the contract is terminated before its expiry date, if the demand for a service falls below a certain level, or if costs are not recouped and the private investor fails to make a profit. Despite the potential for this unforeseen cost, this risk is generally accepted because it is not recorded on the official budget until payment is triggered by the event occurring. This allows governments to circumvent large budget (Romero, 2015).

Contingent liabilities have the potential to undermine national macroeconomic policy and cause significant economic harm when they come into effect. The promise to pay the private party is often of a greater amount than what it would cost to just invest through public means. A leading example is a PPP set up in Lesotho to build the Queen Mamohato Memorial Hospital. The project was financed through a mix of private and public funds. The government of Lesotho invested $58 million in direct finance, while the private sector consortium invested $475 million in equity capital, plus a $95 million loan from the public Development Bank of South Africa (DBSA). The government guaranteed compensation in the event that the private partner defaulted on its loan repayments. A 2014 report by Oxfam showed that the total contingent liabilities cost about 51% of the total health

budget and cost the government three times more than what a public-funded hospital would have cost (Oxfam, 2014).

Contingent liabilities arise with more de-risked financing instruments, particularly for large-scale projects that have a developmental mandate. The probability of contingent liabilities materializing is high for blended finance instruments in a context where commercial profits are difficult to obtain in key geographic areas of underdevelopment. In addition, the more risks involved in the project, the more the government will need to guarantee liabilities to the private sector. Large-scale infrastructures often have more risks involved and projects such as roads in rural areas, water, or sanitation will yield little or no commercial income, leaving the state to pick up the bill for repayments.

All infrastructure projects carry some level of project risk, regardless of who is financing them. The question then becomes what level of risk the government will absorb, over and above the normal risk level, in its efforts to attract private investment. The next section will unpack the risks, other than fiscal, involved in projects that have blended elements.

3.2.2 Assessing risks

The fair allocation of project risk is important for the success of infrastructure projects. The literature on de-risking mechanisms generally recommends that the risks should be allocated to the party best able to bear them (OECD, 2012). Supporters of de-risking argue that one of the key reasons why private sector participation in infrastructure in South Africa is low is because of the high risks and low returns associated with investing in infrastructure. These risks range from political instability to macroeconomic risks, such as inflation or interest rate increases. Thus, the purpose of de-risking mechanisms, such as PPPs and blended finance mechanisms, is for the government to mitigate and/or compensate for these potential risks to make them more attractive to private investors. However, de-risking infrastructure implies that the public sector will absorb a greater share of risk than usual to boost private capital. **Appendix A** shows a list of potential risks that often come with large infrastructure projects.

One area of risk that is particularly contentious is demand risk, the risk that revenue will not be consistent throughout the life of the project (Romero, 2015). Blended finance in the form of subsidies, grants, or guarantees to compensate for demand risk generates considerable financial implications for the public sector. This risk is applicable to South Africa, which has high levels of unemployment and low income, making it difficult for the government to guarantee revenues through user-generated revenue. Important lessons can be drawn from international experience in this respect. In Korea, the government provided a revenue subsidy to guarantee a minimum level of revenue, mainly to transport PPP projects. By 2011, in South Africa, the total government burden for 36 projects with minimum revenue guarantees was estimated at some $2.6 billion (Romero, 2015). A good illustration of these dynamics is the Gautrain rail-link system, a PPP which generates revenue mainly from user fees and where the public sector has also assumed contingent liabilities related to user demand (Aldrete et al., 2012). The Gautrain project is the most expensive public transport project in South Africa, after exceeding R20 billion in costs in 2009. Despite the relatively high user fees of the Gautrain (an average of $20 dollar per standard one-way train ticket), it is estimated that the average revenue the public sector covers is upwards of R250 million per year for the required payment in every consecutive financial year (19 years to date) (Thomas, 2013).

The private sector might also ask for measures to mitigate political and regulatory risks through the provision of guarantees to ensure compensation in the event that the political or regulatory framework changes. However, such guarantees reduce the capacity of a government to respond to new information and introduce regulation measures that can create fair competition with other private sector companies. Environmental risks that have not been dealt with before procurement, or demand risk that the private company cannot manage, are examples of unexpected risks that will increase the costs of de-risked projects.

Another concern is the moral hazard problem involved with the private party assuming less risk. This means that the less risk the private sector has, the less it has to lose from poor performance. The private actor is therefore, potentially, not adequately incentivized to perform on a contract. The government has a duty to ensure the provision of a basic level of services, such as healthcare, clean water, or basic education, in fulfillment of its human rights obligations. Therefore, the government is responsible for ensuring that the partnership works. This means that if a project goes wrong, the government has to rescue the project in order to fulfill its public service obligations. This means that the public sector often needs to support the private company or renegotiate the deal to prevent project failure. If the project fails spectacularly, for example, running up large debts, the government might end up bailing it out. This means that private debts will get transferred to the public sector and ultimately to taxpayers.

The water PPP concession between the Kwa-Zulu Natal province and a private partner, Siza Water, shows the complexities of risk-sharing agreements (see **Appendix 2** for detailed information about this project). The private partner in the concession made a 21% return on investment, despite losses made in the first six years of operation. On the other hand, the price of water to consumers increased over this same period by up to 119% (Farlam, 2005). In 2005, the concession entered its sixth year and while the PPP targets in wealthier areas were achieved, those in the poorer areas have not all been met. A study by the Palmer Development Group (PDG) said that communities have expressed considerable frustration at receiving a lower level of service than they expected (Farlam, 2005).

An issue with de-risked infrastructure investments' potential to leverage private investment is the lack of objective data, or empirical evidence, of its impact. This makes it difficult to assess the risks of these investments and to understand how best to manage them (OECD, 2014). Without this information, private investors, such as institutional investors, will be reluctant to make these allocations to de-risked infrastructure.

3.2.3 Poverty reduction and sustainable development outcomes

Infrastructure is important not for its own sake, but rather to support various kinds of economic activities. In this way, more quality infrastructures are needed to increase employment and provide low-cost access to essential services, such as electricity and water. As noted above, the Infrastructure Fund has a clear mandate to create employment opportunities and reduce poverty over the next ten years. A key concern is whether de-risked investments in infrastructure will lead to these outcomes.

Proponents of de-risked investments argue that the private sector has the requisite capacity and skills to efficiently provide public services. However, experience has shown that de-risked invest-

ments come with different challenges in delivering sustainable development outcomes.

First, private investors tend to invest in high-return infrastructure investments that usually have a better business case. This has implications for the prioritization of projects, as profitable investments tend to be prioritized over less commercially-attractive projects that may have greater development impacts. In addition, commercially-viable investments usually serve areas and communities that are more likely to be able to pay for those services. The Gautrain Rapid Rail Link system, for example, was predominantly financed with public funds and is accessible to mostly affluent people that are able to afford its high ticket prices in order to meet liabilities made to private partners. User affordability is essential in the assessment of development impacts. However, getting the price right for users, particularly for the poor, is not an incentive for the private participant. This means that mostly customers capable of paying have better access to PPP infrastructure projects.

Second, de-risking private participation in infrastructure has long-term implications for infrastructure spending that crowds out non-infrastructure-related investments. To de-risk infrastructure, the government will engage in long-term contractual rights to income streams for the private investor. This government is therefore legally constrained from reducing payments to these projects. In the context of budget cuts, reductions in spending are concentrated on non-PPP areas. This has important, and detrimental, developmental outcomes.

Finally, the impacts of de-risked infrastructure on the environment require more research and systematic consideration for institutions and project promoters. In the case of PPPs, the International Institute for Sustainable Development finds that "environmental and social safeguards are yet to be built into the PPP landscape" (Colverson and Perera, 2011, p. 3). According to their research, "the focus needs to move away from conducting environmental impact assessments as purely a part of the licensing and construction permit requirements, and towards integrating sustainability across the PPP life cycle" (p.6). Some projects within the Infrastructure Fund portfolio are already mired in environmental issues. The Mokolo-Crocodile Water Augmentation Project, projected to cost R12.4 billion, has ceased construction because of appeals made by civil society organizations Earthlife Africa and groundWork, citing potential detrimental environmental impacts on local communities and the surrounding environment (Creamer, 2019; Kemboi, 2021).

All information, including social, environmental, and governance standards, as well as contracts, subcontracts, investment, and partnership agreements, should be available to the public and, in particular, affected communities. The next section will outline the potential governance issues that arise from de-risked infrastructure.

3.2.4 Governance

Governance of de-risked instruments will be more complex because of the extensive, complex due diligence of various stakeholders required to be undertaken with private partners compared with that in traditional public procurement projects (Romero, 2015). This due diligence extends to putting in place measures that regulate the activities of private sector partners. Experience of corruption in South Africa necessitates a regulatory framework that sets clear guidelines and structures to safeguard the interest of citizens and the limited public funds. A high level of transparency and citizen engagement is needed throughout the whole project's processes to avoid project mismanagement and corruption.

For de-risked infrastructure investments, the public sector will often be responsible for the preparation, negotiation, and administration of the contracts and for monitoring and evaluating contract performance during the construction and operation phases of the project (OECD, 2015b). Evaluations of de-risked instruments, including those from the World Bank and the OECD, stress the importance of capacity at the country level to negotiate and manage contracts for the success of these projects (OECD, 2015b). However, this capacity is not strong in South Africa. The 2018 Medium-Term Budget Policy Statement (MTBPS) acknowledges that weak project preparation, planning, and execution has resulted in lengthy delays, over- and underspending, and problems with the quality of the infrastructure. This has often been ascribed to the lack of proper planning and design before construction commences. In the MTBPS, the government attributed the planning problems to the lack of technical expertise and institutional capacity (National Treasury, 2018).

In addition, the major contributors to disappointing infrastructure project outcomes are inappropriate procurement practices and the absence of delivery management. A background paper commissioned by the South African National Planning Commission on public infrastructure delivery identifies the lack of governance and poor procurement and delivery management practices as among the key causes of project failure and poor project outcomes. It is essential that processes are put in place to ensure these governance issues are resolved; however, there is a lack of publicly-available information to assess this.

In addition, a key principle for the good governance of infrastructure is that the government publicly consults a broad range of stakeholders in the processes. Infrastructure development has substantial implications for citizens, and they should have equal access to information as financial investors. To date, however, the implementation of the Infrastructure Fund has not pro-actively engaged trade unions, local communities, and civil society organizations in its decision-making processes.

The next section will provide recommendations to potentially reverse the concerns highlighted. It argues for a governance framework that entrenches transparency and accountability at all levels of project development.

4. Conclusion and recommendations

The above analysis highlights a series of very serious risks that are faced when governments attempt to increase the role of private financing in infrastructure provision. South Africa has and will continue to face all of these.

Fundamentally, a government and its partners must maintain developmental goals as the primary purpose of infrastructure investment, and not set out to primarily establish a business-friendly environment. The current narrative surrounding the Infrastructure Fund overlooks key historical failures in "mega projects" that can, and have been, socially and environmentally damaging. Infrastructure development must seek to close critical gaps in both social and economic infrastructure provisions. With regards to economic infrastructure, the need for structural transformation of the economy must not be overlooked. This would entail a shift away from the economy's reliance on fossil fuels and industries such as mining and commodities towards greater diversification, especially in industries that are not carbon-heavy and are employment-creating. This may not correspond with the interests

of private capital. Nevertheless, infrastructure development must drive sustainable development and the government must take a leadership role in this regard. To ensure that infrastructure-led development serves these objectives, we recommend to relevant stakeholders and policymakers the following:

- **State responsibilities should not be transferred to private parties:** The government's responsibility for meeting obligations on human rights, poverty reduction, and gender-transformative services, as stipulated in the Constitution and key policy documents, such as the NDP, must not be transferred to private corporations, who are concerned primarily with making profits.
- **Private sector involvement must be justified:** A publicly available assessment indicating clear benefits of having private involvement for all projects in the Infrastructure Fund must be undertaken where relevant.
- **The financing mechanisms chosen to deliver social services and infrastructure should be assessed for their ability to ensure cost-effectiveness, accessibility, and quality gender-transformative services:** The government must build an evidence base that considers the impact on both the expansion of coverage (quantity) and on affordability, accessibility, and appropriateness (quality) at all stages: design, implementation, monitoring, and assessment in all projects.
- **Policymakers must seriously consider and implement maximized domestic resource mobilization:** To ensure that the government has a genuine choice in finding the best financing mechanism for infrastructure investments, policymakers promoting infrastructure funding should support the prioritization of progressive taxation at the national and international level, curb illicit international financial flows, and provide long-term concessional finance and loans from key DFIs.
- **Enforce strict governance framework:** The government and international financial institutions must enforce a strong regulatory framework requiring periodic evaluations in relation to environmental, social, human rights, and gender equality standards for de-risked investments, particularly when working with the private sector. Compliance with local and international human rights standards should be built into contracts. These governance frameworks must also be developed with the public.
- **Enforce strong accountability mechanisms:** The government and international financial institutions must ensure that rigorous transparency standards are applied to ensure transparency and accountability in all de-risked projects. This includes accessible accounting of public funds and disclosure of contracts and performance reports. Broad civil society participation, before and during project implementation, must be encouraged. The government and DFIs must ensure that all claims about private finance mobilization are verifiable and not over-estimated.
- **Ensure that all relevant public and private actors involved in infrastructure carry out human rights due diligence to inform and improve decision making (United Nations, 2020):** For example, a comprehensive, publicly available appraisal of prospective private partners needs to be conducted, especially showing that potential partnerships are not harmful

to the economy. This is to ensure that projects safeguard against detrimental social and environmental outcomes.

- **Target domestic companies as a preferred option:** To ensure greater development impact, priority must be given to local private enterprises and to local content requirements within the contracts. There is a danger that international DFIs, fund managers, and other institutions may use de-risking mechanisms to entrench tied aid, the practice of favoring a funder country's own businesses, consultants, and service providers to execute DFI-funded projects.
- **Ensure no undue risk transfers to the public (Müller, 2015):** With the on-take of greater de-risked mechanisms, all fiscal risks must be fully accounted and provisioned for and must not exceed the reasonable amount (for example, the amount commonly put at risk by publicly-owned development and investment banks).

In this paper, we have outlined the potential risks of the financing mechanisms proposed in the newly established Infrastructure Fund, and the economic policy more broadly. While infrastructure development in South Africa is much needed, the emphasis on de-risking for private sector buy-in overshadows the key role the state must play in leading to structurally transform the economy. However, current fiscal consolidation measures undermine the governments' ability to do this, and instead have opened the economy to fiscal risks associated with greater private sector participation. The current narrative around the Infrastructure Fund also overplays the benefits of private capital and underplays the potential risks that come with public-private arrangements. It underestimates the complexities of governing these relationships appropriately and thereby fails to establish the necessary frameworks for maximizing the developmental impact of infrastructure investment and limiting the risks to the public sector. This must be urgently rectified.

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Appendixes

Appendix A. Examples of risks involved in project implementation

Appendix A. Examples of risks involved in project implementation

Type of risk	Description
Political and regulatory risks	
Procurement of permits (land, construction, environmental)	Obtaining the necessary land, construction, or environmental permits might prove costlier or take longer than expected, thus increasing costs.
Contract renegotiation	The risk of a public authority forcing renegotiation of contracts, thereby changing the financial arrangements of the original project.
Asset transfer	The feasibility and cost of transfer of the asset at the end of the contract agreement; the risk that an asset could become "stranded" due to changing government regulation or policy.
Enforceability of contracts, collateral, and security	This risk is closely related to the legal environment that is associated with infrastructure finance, such as PPP frameworks and the enforceability of leases, concessions, and other contracted payment schemes.
Macroeconomic and business risks	
Default of counterparty	Default of any party involved in the project agreement, including government, suppliers, lenders and insurers.
Liquidity risk	The risk that assets will not generate enough cash flow to service debt payments and any other obligation. Also, the risk associated with pricing assets where market prices are not observable.
Inflation risk	The risk that aggregate prices increase in an economy and the asset is exposed to rising prices in a detrimental manner; the risk that the replacement cost of the asset increases over time. Interest rates tend to be correlated with inflation; thus inflation risk can be thought of as interest rate risk.
Real interest rate risk	A component of nominal interest rates, an increase in real interest rates translates to an increase in the real cost of finance, which can strongly affect profitability.
Volatility of demand/revenue risk	The risk that the project company might fail to generate sufficient demand (usage of facilities or service) at the projected price of usage, ultimately leading to a lower level of revenue than projected. Profitability can also be affected by an unforeseen increase in costs.
Technical risks	
Archaeological	Additional costs might arise if archaeological discoveries (e.g., historical sites, fossils, etc.) are discovered on the land intended for construction.

Appendix A. (Continued).

Type of risk	Description
Governance and management of project	Failure to deliver and operate the project to the standards agreed due to poor management or poor risk control procedures.
Force majeure	Risk of forces outside the control of any project participant and affecting the proper delivery, operation, and termination of the project. This includes direct (physical damage) and economic (loss of revenue) consequences from natural disasters, as well as economic and political developments, such as strikes and armed conflicts. *Force majeure* events might be defined in insurance or risk-transfer agreements.
Termination value	Since infrastructure assets are long-lived, any issues with forecasting, particularly related to salvage values and depreciation of assets over time, can affect the expected termination value of an investment. For PPP contracts where the terminal value is zero, this is less of an issue. This risk can be greater for owners of direct equity, such as corporations or direct equity sponsors.
Qualitative deficit of physical structure/service	The risk that the project might not deliver the agreed output at agreed conditions.

Source: Makovšek (2018)

Appendix B. PPPs in South Africa and case study

The most common PPP arrangements in South Africa entail the private sector performing a range of functions, including:

- Design, finance, build, operate, and transfer (DFBOT): 25 projects of this kind have been completed in South Africa. Projects completed include water concessions, hospitals, and those in the transport sector.
- Design, finance, and operate (DFO): 4 projects have been completed, with a total project value of R176 million. The projects are all in the transport sector.
- Design, build, operate, and transfer (DBOT): 2 projects completed, with a total project value of R150 million. The projects are hospital and tourism infrastructures.
- Equity partnerships: 1 project, which transferred R75 million of equity for the State Vaccine Institute.

Some of the notable infrastructure projects concluded through PPPs are the Gautrain railway, the Mbombela water and sanitation concession, and the Albert Luthuli Central Hospital in Kwa-Zulu Natal. PPPs have received unequivocal support from the South African government and are regularly promoted in annual policy and in budget and presidential speeches. They are considered an integral component of the state's strategy for economic development and job creation.

The National Treasury regulates PPPs through a specialized unit established in 2000. It is a dedicated PPP unit for national, provincial, and local levels of government. It evaluates and approves PPPs and provides active support throughout the process to ensure affordability, value for money, and the appropriate risk transfer in the PPP cycle, from its inception to eventual implementation. PPPs are also governed by the Public Finance Management Act of 1999 (PFMA), Treasury Regulation 16 of 2004, the Municipal Systems Act of 2000 (MSA), and the Municipal Finance Management Act of 2003 (MFMA). These are legislative frameworks developed to effect transparency and accountability in procurement PPP projects.

Despite gaining widespread support for PPPs from both the private and the public sectors, the uptake in South Africa has been lower than expected. As of 2019, 34 PPP projects have been completed since the awarding of the first project in 1998. This represents a total value of R89.6 billion, only 2% of the total public sector infrastructure budget estimate.

It is expected that the number of PPP projects will substantially increase over the next few years, as infrastructure reforms, which are fiercely in favor of PPPs, are implemented. Processes are also currently underway to review the regulatory framework governing PPPs to make them more streamlined and less complicated (Venter, 2020). PPP financing will also be made into asset classes for additional revenue streams made through trading on the financial market, as discussed in Section 3.

Case study: Ilembe water and sanitation concession

Type of PPP: Design, Finance, Build, Ownership, and Transfer (DFBOT)

The Ilembe water and water services PPP is the first water and sanitation services (WSS) concessional arrangement involving the SA municipal government and a major private provider of water, Siza Water. It was chosen because it involves the provision of a social infrastructure project (water).

It highlights the difficulties of private participation in water and sanitation access in the context of a low-income community characterized by high poverty and unemployment levels.

Background

The Ilembe water concession is a partnership between the Ilembe District municipality and a private partner, Siza Water. The PPP project was entered into in 1999, the same year that Siza Water was founded. At the time the agreement was signed, Ilembe District was characterized by high unemployment (about 39%) and about 75% of the population did not have adequate access to water and sanitation. The concession area covered several communities between 34,000–40,000 people at the time of incorporation, and water users were from rural areas (majority), urban, residential areas, and industrial businesses.

Direct investment by the Department of Water Affairs was valued at R130 million as of 2019 (National Treasury, 2019).

Structure of transaction

The PPP arrangement was a 30-year agreement, in which Siza Water invests and maintains the water and sanitation infrastructure. However, they do not own the water supply, as it is bought in bulk from the state-owned water board, Umgeni Water. Because of this, Siza Water buys water from Umgeni Water and the base tariffs are determined by Umgeni Water.

The contract also specifies that Siza can choose to charge its customers directly for water services; however, tariffs must be determined by the water council, which comprises local government officials and community members (Bayliss, 2016).

Key outcomes of project

Uneven access to water: By its 6th year in operation (2005), the PPP met all its targets in wealthier areas but failed to provide adequate access to poorer communities (Robbins, 2004). Poorer households recorded high non-payment rates (about 60% non-payment rate in 2005), triggering cut-offs by Siza Water. In the first year after Siza Water took over, there were 140 cases of cholera in the area, as a result of people drawing unhygienic water from streams rather than paying for treated water.

Uneven local profits: In the first five years of operation, Siza Water was not making a profit from the concession (the project was not making a profit); however, the Saur Group, its international partner, received a 21% return on its investment from the first year of the concession, which means that the Saur Group was able to secure better terms for itself compared with those for its local partners in Siza Water.

Tariff hikes: Siza Water found itself unable to pay its concession fees in 2001, partly because of a 20% increase in the cost of water charged by the bulk supplier, Umgeni Water. This led to a substantial adjustment to the contract by the municipality, including halving the annual concession fee to be paid to the municipality until 2006, which reduced the investment commitments from the concessionaire and increased prices for consumers. Prices for low-income customers increased by 119% from pre-concession levels and the volumetric water charge for Level 2 users rose by 80% as a result.