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The fiscal implications of strategic investment funds

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Abstract/Résumé

Strategic investment funds (SIFs) are instruments of economic and financial policy, and the operations of these funds have important fiscal implications. These implications span the full cycle of the SIFs' operations, from funding, through capital allocation, to operations and maintenance of the invested assets. SIFs with a capacity to deploy capital efficiently have the potential to increase the effectiveness of the public expenditure programmes in the SIFs' respective home countries. However, the establishment and operations of SIFs also carry important fiscal risks, which need to be recognised and addressed. This paper considers the flows of capital into and out of SIFs, as well as the relationship of these flows to the fiscal framework and macrofiscal context of the SIFs' home countries. It also looks at the fiscal liabilities that can result from SIFs' activities, and from their possible insolvency and bankruptcy, offering suggestions for how these risks can be mitigated.

Les fonds d'investissement stratégique (SIF pour leur acronyme en anglais) sont des instruments de politique économique et financière, et leurs opérations ont des implications fiscales importantes. Ces implications couvrent un cycle complet, allant du financement à l'allocation de capital, et des opérations à la maintenance des actifs investis. Les SIF capables de déployer efficacement leurs capitaux peuvent accroître l'efficacité des programmes de dépenses publiques dans les pays d'origine des SIF. Cependant, la création et le fonctionnement des SIF comportent également des risques fiscaux importants, qui doivent être reconnus et pris en compte. Ce document examine les flux de capitaux entrant et sortant des SIF, ainsi que la relation de ces flux avec le cadre budgétaire et le contexte macrobudgétaire des pays d'origine des SIF. Il examine également les responsabilités fiscales qui peuvent résulter des activités des SIF et de leur éventuelle insolvabilité et faillite, offrant des recommandations sur la manière dont ces risques peuvent être atténués.

Foreword

A growing number of countries are establishing strategic investment funds (SIFs). The establishment and operations of these funds generate a set of fiscal risks, challenges, and potential liabilities. This paper is the first to provide guidance on how governments can mitigate the fiscal risks arising from the establishment and operations of SIFs, and minimise the potential liabilities. It is intended for officials in Ministries of Finance, and other government agencies that oversee or regulate SIFs' establishment and operations. It will also be useful for members of parliament, members of SIF boards, SIF management, and SIF staff.

This work contributes to the OECD Development Centre's work on cross-cutting development issues based on lessons learned from Multi-dimensional Country Reviews. It supports the OECD's broader efforts to advance understanding of financing options for domestically driven economic development and the low-carbon energy transition, and the activities of public financial institutions.

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Abbreviations and acronyms

ADIA Abu Dhabi Investment Authority

EMDEs emerging markets and developing economies

FONSIS Fonds Sénégalais d'Investissements Stratégiques

GLC government-linked companies

ISIF Ireland Strategic Investment Fund

NIIF National Investment and Infrastructure Fund (India)

NPRF National Pensions Reserve Fund (Ireland)

NSIA Nigeria Sovereign Investment Authority

NTMA National Treasury Management Agency (Ireland)
PINAI Philippine Investment Alliance for Infrastructure

PPP public private partnership
SIF strategic investment fund
SPV special purpose vehicle

Executive summary

The establishment and operations of strategic investment funds (SIFs) generate a specific set of fiscal risks, challenges, and potential liabilities. The fiscal and macroeconomic implications associated with fully state-owned *public capital SIFs* are frequently different from those associated with *mixed capital SIFs*, where the state is one of several investors into the fund.

The paper provides recommendations on the types of investments that SIFs should undertake; on funding, withdrawals and dividends; on macro-fiscal aspects; and on the management of the six main fiscal risks.

Recommendations on types of investments

As commercial or near-commercial investors, SIFs can only invest in assets expected to deliver a commercial return. Investing through a SIF, as opposed to channelling investments through the government budget, can be preferable for the following four reasons: i) efficiency of investment; ii) ability to mobilise private capital; iii) return on investment; and iv) better asset maintenance. If none of these conditions hold, then investment through the government budget is *a priori* preferable to investment through the SIF.

Recommendations on funding, withdrawal and dividends

Public capital SIFs are capitalised from a variety of sources, including budget transfers, publicly owned financial assets, publicly owned real assets, revenue streams from natural resource exports, and capital injections from national, regional, or multilateral development banks. Mixed capital SIFs are capitalised by equity investments from the private sector and institutional investors, in addition to equity investment by a government, development bank, or other public entity. Some SIFs are permitted to borrow in capital markets.

SIFs can be established as permanent structures, or are closed-end with a defined lifespan – akin to private equity funds. Most SIFs that are established as permanent structures have strict limits or prohibitions on capital withdrawals.

Procedures to determine dividends should as far as possible be a technical decision, isolated from political influence and electoral cycles. The determination of dividends should be based on pre-defined criteria specified in the SIF's law or bylaws. Public capital SIFs frequently have initial moratoriums and upper bounds on the payment of dividends. Sometimes payment of dividends is made explicitly conditional on the SIF demonstrating profitability over a period of time.

Dividend policy depends on the objectives established for the SIF. If the fund's objective is primarily of a strategic kind, it is logical to fully re-invest profits to grow the potential of the fund to finance infrastructure and other strategic objectives. If, on the other hand, an important part of the SIF's objective is to generate revenue for the government, then it makes sense for profits to be fully or partly paid out as dividends.

Recommendations on macro-fiscal aspects

SIFs are not designed to be instruments of macroeconomic policy. Therefore, the legal and statutory checks and balances that typically limit government interference in SIF operations include checks on interference motivated by macroeconomic considerations.

In resource-rich contexts, where there may be a risk of Dutch disease, the overall spending envelope of the SIF should be co-ordinated with macroeconomic and monetary authorities – while retaining SIF independence on individual investment decisions.

The government's ability to intervene in a SIF's operations for macroeconomic reasons is different for public capital SIFs as compared to mixed capital SIFs, and depends on the legislation that establishes the SIF:

- In mixed capital SIFs established as limited liability structures, the government invests as a limited partner, with the rights assigned by legislation to limited partners.
- Where a public capital SIF is established under company legislation, the scope of government action is defined by this legislation and by the SIF's corporate governance framework.
- For public capital SIFs that are managed by a public agency, and established by separate
 legislation or act of parliament, the scope for government interference on macroeconomic grounds
 is defined by this legislation or act. The conditions under which the government is permitted to
 intervene, if at all, should here be set out in the legislation that establishes the SIF, or as a minimum
 in its bylaws.

Recommendations on managing fiscal risks

The SIF's role, mandate, and legislation need to be considered within the country's wider fiscal framework. Of particular relevance is the SIF's ability to assume risk or liabilities on behalf of the state. There are at least six relevant types of risk:

- 1. Risk to budget transfers: Payments to the SIF could in some circumstances be used as a means to channel government expenditure away from the parliamentary scrutiny given to the government budget. Budget transfers to the SIF require transparency, and accountability to parliament at two levels: i) transfers from the budget to the SIF; and ii) SIF accountability for the investment of these transfers. For SIFs that receive budget transfers, these transfers should go through the normal government budget process, thereby being subject to parliamentary scrutiny. If the government is an equity investor in a mixed capital SIF, this investment should also be recorded in budget documentation. Once the funding has been transferred to the SIF, the SIF's management needs to have the functional and operational independence required to take commercially based investment decisions free from political interference.
- 2. Risk to government lending: If a SIF borrows excessively from the government, this could result in government debt needing to be written off. In accordance with the principle of competitive neutrality, credit terms offered by the government to the SIF should be in line with the credit terms offered to private companies. In case of SIF insolvency, government debt would then be treated on par with private sector debt, consistent with relevant insolvency and bankruptcy provisions.
- 3. Risk of SIF private sector debt causing fiscal liability: For SIFs that issue private sector debt, there is risk of becoming insolvent. Fiscal losses would arise if the government has guaranteed the SIF's debt and/or its operations. Reflecting principles applied to state-owned enterprises, the state should as a general rule not provide automatic guarantees to back up SIF liabilities, which should instead be subject to general insolvency law. If a government nevertheless chooses to issue

- guarantees to a SIF, then it could first establish guiding principles on the issuance of guarantees, as outlined in this paper.
- 4. Risk of liabilities of SIF portfolio companies causing fiscal liability: A SIF may assume liabilities on behalf of the companies which it owns or where it holds shares with third parties. To support fiscal transparency, the terms on which a public capital SIF may lend or provide guarantees to its portfolio companies, and the procedures for pricing of these products, can be defined in the SIF's bylaws and should seek to be consistent with the country's overall fiscal guidance for financial sector SOEs. Furthermore, all such liabilities should be accounted for in the SIF's reporting to its board and to the government, in accordance with the accounting standard adopted by the SIF, usually IFRS.
- 5. Risk of SIF liabilities resulting from the transfer of state-owned assets to the SIF:
 - For state-owned assets that are at the time of transfer generating profits, it could be appropriate
 for the government to define a dividend policy, to make up for the loss of budget contributions
 previously provided by the transferred assets.
 - For state-owned assets that at the time of transfer are loss-making and in need of restructuring,
 the SIF may require budget resources to finance the restructuring.
 - To be able to act as a commercial investment organisation, the SIF needs to be mandated to undertake its own independent due diligence on all assets that it takes onto its balance sheet, including state-owned assets, and to make independent decisions on whether to take ownership of these assets.
- 6. Risk of SIF insolvency or bankruptcy: SIFs that are permitted to borrow carry risk of insolvency and bankruptcy. If the government is de jure or de facto expected to backstop the SIF in case of insolvency, then the SIF's liabilities need to be accounted for in the government general fiscal policy analysis on par with the risk arising from state-owned enterprises. The IMF's Fiscal Transparency Code (IMF, 2014_[1]) recommends that government budget documentation contain a statement of fiscal risk that includes liabilities resulting from SOE debt. This applies also to SIFs.

1. Why SIFs matter to fiscal management

Over the last two decades, more than 30 countries have established strategic investment funds (SIFs). Several other countries are in the process of establishing such funds. SIFs are government-sponsored investment funds that, in addition to generating returns for their investors, are tasked with catalysing capital flows to priority sectors of national and regional economies (Halland, Noel and Tordo, 2016[2]). Well managed SIFs can deepen domestic capital markets, and they bring specialised and sector-specific expertise to the structuring and financing of investment projects. By establishing SIFs, governments seek to strengthen their capacity to act as professional long-term investors.

SIFs can be defined as special purpose investment funds that exhibit all of the following six characteristics (Halland, Noel and Tordo, 2016_[2]):

- Are sponsored and/or fully or partly capitalised by a government, by several governments, or by government-owned global or regional finance institutions;
- Invest to achieve financial as well as economic returns, in accordance with a double bottom line;
- Aim to crowd in private capital by co-investing at the fund and/or project level;
- Operate as expert investors on behalf of their sponsors;
- Provide long-term patient capital, primarily as equity, and may also invest in quasi-equity or debt;
 and
- Are established as investment funds or investment corporations.

In advanced economies, SIFs support infrastructure development, invest strategically in sectors of national priority, and foment industrial innovation. Increasingly, SIFs focus on the mobilisation of private capital for clean-energy infrastructure, and for the development and deployment of novel low-carbon technology. SIFs share this role with green banks and with national development banks, but SIFs generally focus far more on equity investment than these banks do. SIFs, as equity investors, frequently take an active role in project development, are often active owners of their portfolio companies, and in many ways function as government-owned private equity firms. Some SIFs exercise their government's ownership of state-owned enterprises, have a role in strengthening the management of these enterprises, and sometimes in privatising and listing them on stock exchanges.

In developing countries, SIFs have evolved to address challenges typical to these countries: a shortage of domestic and international investment, a widespread lack of trust in institutions, huge economic development needs, and sensitivity to exchange rate risk. SIFs seek to attract capital from international and domestic investors to foment economic growth, develop modern industries, and create jobs in sectors that will increase the resilience of their countries' economies: typically food and water security; health care; education; energy security; and digitalisation (International Forum of Sovereign Wealth Funds, 2021_[3]).

Due to adverse risk perceptions, very few international investors and asset managers have a substantial presence in developing countries. These countries' governments need to consider ways to secure international investment without increasing their debt – and SIFs are one of the most credible options (Daouda, Orji and Mbaye, 2021_[4]). Developing countries' SIFs seek to mitigate risk, and to be legitimate, commercial, and professional partners for foreign and domestic investors. In this way, SIFs go beyond what governments have previously sought to achieve by providing tax incentives or other passive incitements for investors. In addition to their role as primarily equity investors, SIFs are also active market makers by creating financing providers such as insurers, mortgage lenders, and import-export financing (International Forum of Sovereign Wealth Funds, 2021_[3]).

This paper addresses specifically the fiscal implications of SIFs. For a general overview and broader treatment of SIFs, readers are advised to consult (Clark and Monk, 2015[5]), (Halland, Noel and Tordo, 2016[2]) and (Divakaran et al., forthcoming[6]). There is little guidance available to governments on the fiscal implications of SIFs' establishment and operations. A well-defined relationship between a SIF's investment policy and its government's fiscal framework is crucial to addressing risks that may arise from the operations of the fund, and also to maximise the contribution of the fund as an instrument of economic policy.

This paper seeks to identify the fiscal risks associated with the operations of SIFs, and suggests ways to mitigate these risks. It is based on the limited empirical evidence that is publicly available, and the suggestions provided draw on generally accepted principles of public financial management. The paper considers the flows of capital into and out of the SIF, the relationship of these flows to the government's fiscal framework and to the country's macroeconomic context, as well as fiscal liabilities that can result from a SIF's activities.

Frequently, the fiscal and macroeconomic implications associated with fully state-owned *public capital SIFs* are different from those associated with *mixed capital SIFs*, where the state is one of several investors into the fund. This paper discusses those differences and their implications. Examples of SIFs that have both public and private investors are India's National Investment and Infrastructure Fund, the second fund of the European Union's Marguerite Funds, Marguerite II, and the Emerging Africa Infrastructure Fund. Other SIFs, such as for example the Bpifrance, Italy's CDP Equity, the Nigeria Sovereign Investment Authority, the Ireland Strategic Investment Fund, and the *Fonds Sénégalais d'Investissements Stratégiques* have the state as its sole investor. See (Divakaran et al., forthcoming_[6]) for a broader discussion of different types of SIFs.

Section 2 (page 13) considers the circumstances under which SIFs can be the preferred channel for government investment, as compared to investment through the government budget. Section 3 (page 15) discusses how SIFs are funded, as well as rules for withdrawal of capital and payment of dividends. Section 4 (page 18) addresses some essential macroeconomic aspects of SIFs operations, whereas Section 5 (page 20) deals with core fiscal management aspects, including payments to the SIF from the government budget, fiscal risks arising from SIF operations, SIF debt and liabilities, and transfer of government assets to the SIF, as well as fiscal implications of a SIF insolvency and bankruptcy. Section 6 (page 25) concludes and provides suggestions for further research.

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¹ (Ossowski and Halland, 2016_[18]) provide a discussion on the fiscal aspects of sovereign wealth funds, some of which is applicable to SIFs.

When is a SIF the preferred channel for government investment?

Investing through a SIF, as opposed to channelling investments through the government budget, can be preferable for the following reasons:²

- Efficiency of investment. Well-managed SIFs rely on professional investment teams to undertake
 their investment operations. Investing through a SIF can be justified if the SIF's operations are
 more efficient than investment through the government budget, and deliver more value for the
 capital invested.³
- Ability to mobilise private capital. SIFs are specifically designed, by their structure, governance, and modus operandi, to mobilise private capital. Projects with private capital participation can also be implemented through public-private partnerships (PPPs), contracts between public and private parties, where the latter provide a public service and assume substantial financial, technical and operational risk (Gelb, Tordo and Halland, 2014_[7]). However, PPPs are frequently faced with significant management and governance challenges, particularly in emerging markets and developing economies (EMDEs). This includes low public sector capacity, weak governance and regulatory frameworks, and lack of co-ordination among public entities (Dabla-Norris et al., 2011_[8]). Whereas regulation is outside SIFs' remit, some of these challenges can be addressed by a professionalised public investment organisation a SIF.
- Return on investment. Whereas government budget expenditure is not commonly expected to earn a financial return, a fundamental objective of a SIF is to earn a commercial financial return on its investments. Furthermore, many countries are challenged when planning and executing investment projects through traditional public expenditure channels. Challenges include a lack of government capacity for project selection, appraisal, design and implementation; lack of coordination among government entities; and political economy issues. These challenges affect countries' ability to attract capital from the private sector, as well as the likelihood that projects will earn a commercial return (Gelb, Tordo and Halland, 2014[9]).
- Asset maintenance. In government budgets, infrastructure investment is part of the capital budget, whereas expenses associated with maintaining the infrastructure are classified as operating expenditure. It is not uncommon for governments to underestimate and under-plan maintenance expenditure, leading to a shortening of assets' useful lives (Schwartz et al., 2020[10]). This is less likely to be the case for asset held by SIFs. As a commercial investor, a SIF has an interest in maintaining the value of its assets over time.

^{2.} See (Ossowski and Halland, 2016_[18]) for a discussion of the distinction between sovereign-sponsored investment funds that undertake investment for public policy purposes, and funds that invest with commercial objectives. This paper refers only to the latter category.

^{3.} In many emerging markets and developing economies (EMDEs), the efficiency of investment through government budgets is low (Dabla-Norris et al., 2011[8]).

If none of the above conditions hold, then investment through the government budget is *a priori* preferable to investment through the SIF. As commercial or near-commercial investors, SIFs can only invest in assets expected to deliver a commercial return (Gelb, Tordo and Halland, 2014[9]), (Halland, Noel and Tordo, 2016[2]). In general, only a limited share of public infrastructure projects can be expected to be investable on commercial or near-near commercial terms. Sectors that generate a predictable, reliable, and stable revenue stream, such as energy generation, are more viable than sectors where revenues are less predictable or reliable. Assets that do not generate significant revenues, such as rural roads and schools, will not be candidates for SIF investment. Nevertheless, with private finance for infrastructure being much less prevalent in developing than in developed economies, the former could have significant room for expanding private finance – if risk can be properly mitigated. According to (McKinsey, 2018[11]), developing economies get 20% of infrastructure funding from the private sector, whereas in developed economies the private sector share is 55%.

Developing countries' SIFs frequently see it as their main policy purpose to overcome investor perceptions of high risk and thereby attract private capital. A key element is to ensure that partners have aligned interests: a long-term investment horizon and a willingness to develop into strategic co-investors. Such shared goals increase the likelihood that the government will honour its agreements with investors and become a trusted partner over time (International Forum of Sovereign Wealth Funds, 2021_[3]).

3 Funding, withdrawals and dividends

A SIF's sources of funding are an important determinant of its institutional and operational character. In national, *public capital* SIFs, the government has a great deal of leverage vis-à-vis the SIF, and strong checks and balances are needed to guard against political interference in the SIF's commercial investment decisions. Furthermore, public capital SIFs are likely to be more closely identified with the government than *mixed capital* SIFs, and the government may be expected by the electorate to pick up the pieces if something goes wrong.

In mixed capital SIFs, especially if the government has a limited minority stake, its role is more akin to that of a private investor. Here, the checks and balances that pertain to private investment organisations fully apply, and will reflect requirements specified in standard commercial or financial sector legislation. If the government has a majority stake, or a large minority stake, the SIF could be subject to some of the pressures and dynamics of public capital SIFs.

Public capital SIFs are capitalised from a variety of sources, including budget transfers, publicly owned financial assets, and publicly owned real assets.

- Budget transfers is a common way of providing initial capitalisation, or equity, for SIFs. This
 includes both public capital SIFs such as the Ireland Strategic Investment Fund (ISIF), and mixed
 capital SIFs such as India's National Investment and Infrastructure Fund (NIIF).
- Publicly owned financial assets are another source of capitalisation. For example, ISIF was capitalised by financial assets previously held by the National Pensions Reserve Fund (NPRF).
- Real assets transferred to SIFs may include state-owned enterprises, or infrastructure, which in turn can be a source respectively of dividends and user fees. Malaysia's Khazanah Nasional Berhad, for example, was capitalised by the transfer of state-owned enterprises, so called government-linked enterprises (GLCs), to its portfolio. The capitalisation of the Turkey Wealth Fund included a number of state-owned infrastructure assets.

In resource-rich countries, public capital SIFs can have the right to a share of annual revenue streams from natural resource exports. This is the case of the Nigeria Sovereign Investment Authority (NSIA), and its subsidiary, the Nigeria Infrastructure Fund (NIF). NSIA is funded with hydrocarbon revenues in excess of Nigeria's budgetary requirements.⁴ In accordance with Nigeria's federal structure, these revenues are allocated to federal, state, and local governments, and then partially channelled to the NSIA. A share of the revenues allocated to the NSIA are then channelled to the NIF.

National, regional, or multilateral development banks can be a source of funding for public capital SIFs, as well as for mixed capital SIFs. These investments permit development banks to convert some of their capital to long-term equity managed by the SIF, thereby allowing them to support equity investment in their target geographies and sectors. Development banks can mitigate risk by co-investing in the SIF with other development banks, or with private investors. The European Union's Marguerite Funds, backed by the European Investment Bank and several European state-owned banks, are an example of this.

^{4.} See (IMF, 2013_[22]) for a discussion on how, in Nigeria, the oil price has been set in the budget.

Mixed capital SIFs are capitalised by equity investments from the private sector or institutional investors, in addition to equity investment by a government, development bank, or other public entity. For SIFs managed by a private general partner, this may include general partner equity, and limited partner equity. Foreign as well as domestic commercial investors provide equity for mixed capital SIFs, and institutional investors sometimes constitute an important part of their capital base. For example, the Abu Dhabi Investment Authority (ADIA) has invested in the NIIF (Debusmann, 2017[12]). Similarly, in 2019, the Canadian Pension Plan Investment Board, and the Ontario Teachers' Pension Plan, as well as AustralianSuper, an Australian pension fund, invested a total of USD 650 million in the NIIF Master Fund, thereby bringing the Master Fund to its targeted size of USD 2.1 billion. Additionally, these three pension funds will have co-investment rights with the NIIF of a total of USD 1.95 billion. The Philippine Investment Alliance for Infrastructure (PINAI) is another example of a SIF that has both domestic and foreign pension funds as its main investors (Halland, Noel and Tordo, 2016[2]).

Some SIFs are permitted to borrow in capital markets. This may have some advantages: A SIF that issues bonds, such as Malaysia's Khazanah Nasional Berhad, will be scrutinised by the market and by credit rating agencies. Also, borrowing from the private sector could reduce a SIF's need to borrow from its government. However, if the government either explicitly or implicitly guarantees the SIF's debt, then the resulting contingent liability would be part of the government balance sheet anyway – in some cases possibly as "hidden debt" not accounted for in the documentation of government liabilities.

SIFs can be established as permanent structures, or are closed-end with a defined lifespan – akin to private equity funds. Commonly, SIFs that have private investors are closed-end funds, whereas SIFs that are entirely funded with public capital are set up as permanent structures, reflecting their role in driving long-term investment. Most SIFs that are established as permanent structures have strict limits or prohibitions on capital withdrawals. Reflecting their role as long-term investors, their working capital is frequently protected by legislation. For example, the legislation that established Senegal's FONSIS specifies that "capital withdrawals from FONSIS are not allowed, unless approved by the President of the Republic, on advice from the Ministry of Finance, and ratified by an absolute majority of parliament" (Government of Senegal, 2012_[13]). Closed-end SIFs, on the other hand, exit their investments upon maturity like any other closed-end investment fund, with the capital returned to investors.

The authority to determine dividends differs among SIFs, reflecting the structure of each fund. For public capital SIFs, the payment of dividends is frequently determined jointly by the fund's board and the ministry of finance, which represents the government's ownership interest. For mixed capital SIFs, the board or the body that represents the limited partners generally decides on the dividends. Procedures to determine dividends should as far as possible be a technical decision, isolated from political influence and electoral cycles. The determination of dividends should be based on pre-defined criteria specified in the SIF's law or bylaws, and should reflect the SIF's strategic objective.

Public capital SIFs frequently have initial moratoriums and upper bounds on the payment of dividends. An initial moratorium on dividends allows the SIF to build up its capital and establish itself as a professional investment organisation, before being subjected to requirements to pay dividends. Sometimes payment of dividends is made explicitly conditional on the SIF demonstrating profitability over a period of time. For example, ISIF has a 10-year moratorium on the payment of dividends, until 2025. After that date, the Minister for Finance may, after consultation with the NTMA, determine payments from ISIF to the Exchequer of up to 4% per annum of the ISIF's value (National Treasury Management Agency, 2014[14]).

A central question for SIFs is how much of its after-tax profits should be retained to finance investment, and how much should be paid as dividends to the government to finance general public spending. Dividend policy depends on the objectives established for the SIF. If the fund's objective is primarily of a strategic

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^{5.} Exceptions to this policy are specified in paragraph 47 of the (National Treasury Management Agency, 2014_[14]).

kind, it is logical to fully re-invest profits to grow the potential of the fund to finance infrastructure and other strategic objectives. If, on the other hand, an important part of the SIF's objective is to generate revenue for the government, then it makes sense for profits to be fully or partly paid out as dividends. In Singapore, Temasek generally retains its returns for reinvestment. Nevertheless, payments to the Ministry of Finance have averaged 7% of the market value of Temasek's shareholdings over the past 30 years (World Bank, 2014_[15]).

4 Macro-fiscal aspects

A SIF's home government may wish to intervene in a SIF's operations for a variety of macroeconomic reasons, but its ability to do so depends on the SIF's legal status and governance structure. For example, a government may wish the SIF's investments to support the financial sector during a financial crisis – although this role is not normally within a SIF's mandate, and could be questionable. SIFs' operations need to be consistent with macroeconomic policy, as specified in the Santiago Principles (International Working Group on Sovereign Wealth Funds, 2008[16]) (Principle 3).⁶ However, SIFs are not designed to be instruments of macroeconomic policy. Therefore, the legal and statutory checks and balances that typically limit government interference in SIF operations include checks on interference motivated by macroeconomic considerations.

Co-ordination with macroeconomic policy is above all relevant for SIFs that are capitalised with foreign currency proceeds from natural resource exports, and where the size of the SIF is large relative to the overall national economy. In resource-rich contexts, the overall spending envelope of the SIF should be co-ordinated with macroeconomic and monetary authorities – while retaining SIF independence on individual investment decisions (Gelb, Tordo and Halland, 2014_[7]). This is because the investments of SIFs that are capitalised by foreign currency proceeds may potentially contribute to "Dutch disease" (Corden and Peter Neary, 1982_[17]) – exchange rate appreciation and subsequent decline in non-resource exports. This would happen if the SIF were to rapidly scale up investments when resource prices and revenues are high, thereby undermining government efforts at counter-cyclical fiscal policy. Conversely, a contraction of SIF investments in periods of low oil or mineral prices would exacerbate the downturn, thereby aggravating the severity of the business cycle. If the SIF is large relative to the overall economy, the effect of procyclical SIF investments will be more severe (Ossowski and Halland, 2016_[18]; Corden and Peter Neary, 1982_[17]).

For SIFs capitalised with revenues from natural resource exports, the volatility of these revenues could also affect the ability of the SIF to implement its investment agenda. SIFs funded by natural resource exports usually receive their funding from the government budget, as a one-time endowment or as discretionary transfers or earmarking of specific sources of revenue. In periods of low commodity prices, the government could reduce public sector expenditure, thereby curtailing or halting transfers to the SIF. Therefore, the SIF's investment programme needs to be carefully crafted to limit the risk of sudden and costly financing shortages (Gelb, Tordo and Halland, 2014_[7]).

The government's ability to intervene in a SIF's operations for macroeconomic reasons is different for public capital SIFs as compared to mixed capital SIFs, and depends on the legislation that establishes the SIF.⁸ In mixed capital SIFs established as limited liability structures, the government invests as a limited partner, with the rights assigned by legislation to limited partners. In general terms, limited partner's

^{6.} The (International Working Group on Sovereign Wealth Funds, 2008_[16]) specifies that "Where the SWF's activities have significant direct domestic macroeconomic implications, those activities should be closely co-ordinated with the domestic fiscal and monetary authorities, so as to ensure consistency with the overall macroeconomic policies".

^{7.} See (Corden and Peter Neary, 1982[17]) for a description of Dutch disease.

^{8. (}International Working Group on Sovereign Wealth Funds, 2008[16]).

responsibilities are confined to the strategic level, including aspects such as the fund's scope and mandate, approval of its investment policy, and the appointment of the fund manager. Limited partners are not involved in individual investment decisions, which are the domain of the general partner and fund manager. Therefore, a government has little opportunity to use this type of SIFs for macro-economic policy objectives. The government's ability to intervene is further curtailed if it is a minority investor.

Where a public capital SIF is established under company legislation, as is the case for example of Malaysia's Khazanah Nasional Berhad, the scope of government action is defined by this legislation and by the SIF's corporate governance framework. A decision by the Ministry of Finance to provide direction to the SIF, based on macroeconomic considerations, would therefore be significantly curtailed by legal checks and balances. These commonly include corporate governance legislation that sustains the operational independence of this SIF's management from the board, and the board's decision-making independence from the agency or ministry that represents the government's ownership interest. In practice, the level of board independence is likely to depend significantly on the extent of government representation on the board.

For public capital SIFs that are managed by a public agency, and established by separate legislation or act of parliament, the scope for government interference on macroeconomic grounds is defined by this legislation or act. The conditions under which the government is permitted to intervene, if at all, should here be set out in the legislation that establishes the SIF, or as a minimum in its bylaws. Ireland provides an example. Paragraph 42 of the NTMA Amendment Act (National Treasury Management Agency, 2014[14]), which establishes ISIF, specifies that the Minister's scope for intervention is limited to cases where there is a need "to remedy a serious disturbance in the economy of the State", and "to prevent potential serious damage to the financial system in the State and ensure the continued stability of that system". In both cases, the Minister is required to consult with the Central Bank before providing directions to the fund. The Minister may only under these specific circumstances give directions "to invest assets of the Fund in specified securities of a credit institution," or "to underwrite or otherwise support the issue of any kind of securities of a credit institution".

^{9.} Further details are provided in paragraphs 42 and 43 of the (National Treasury Management Agency, 2014_[14]).

5 Managing fiscal risks

Public capital SIFs and mixed capital SIFs have different fiscal implications. In mixed capital SIFs, the government is an investor on par with other investors. If the SIF is set up according to a limited liability structure, with the government as one of the limited partners, then the government's liabilities will be confined to the capital invested. Public capital SIFs, on the other hand, have fiscal implications throughout their lifetime.

Many of the principles and frameworks that apply to state-owned enterprises apply also to SIFs, and are helpful in managing fiscal risks arising from SIFs' operations. This includes the OECD's Guidelines on Corporate Governance of State-Owned Enterprises (OECD, 2015_[19]), which provide a useful framework to help manage fiscal risk resulting from SIF operations. Similarly, the IMF's Fiscal Transparency Code (IMF, 2014_[1]), and the accompanying Fiscal Transparency Handbook (IMF, 2018_[20]), provide useful guidance on the relationship between the SIF, the government budget, and the overall fiscal framework.

Principles that are of particular relevance to SIFs include the transparency of SIF funding from the government budget, and clear separation of commercial and non-commercial activities (IMF, 2014_[1]); (OECD, 2015_[19]). SIFs should transparently report any non-commercial activity, and the terms of this activity. For those SIFs that have non-commercial activities, these may include below market rate equity investments in projects with a high projected social, environmental, or economic return; below market rate loans to portfolio firms; below market rate credit guarantees to project special purpose vehicles (SPVs); or other subsidised tranches in a project's capital structure.

According to the principle of competitive neutrality, which many governments apply to their SOEs, SIFs should be treated by the government on par with other commercial actors. This approach provides the government with a framework for strengthening the financial and fiscal discipline of the SIF, for reducing the SIF' preferential access to finance, and for managing the fiscal burden and potential fiscal risks associated with SIFs (World Bank, 2014[15]).¹⁰

The SIF's role, mandate, and legislation need to be considered within the country's wider fiscal framework. Of particular relevance is the SIF's ability to assume risk or liabilities on behalf of the state.¹¹ There are at least six relevant types of risk:

- *Risk to budget transfers:* Risk of payments to the SIF being used as a means to channel government expenditure away from the parliamentary scrutiny given to the government budget.
- Risk to government lending: Risk of the SIF borrowing excessively from the government, resulting
 in government debt needing to be written off.

^{10. (}World Bank, 2014[15]) refers to SOEs, but these principles apply equally to SIFs.

^{11.} This paper does not cover fiscal issues specific to resource funds, sovereign funds capitalised by oil or mineral revenues. These risks result from the high volatility and finite nature of oil and mineral revenues. For a discussion of resource funds, including deposit and withdrawal rules, and the relationship between resource funds and fiscal rules, see (Ossowski and Halland, 2016_[18]). See also (IMF, 2013_[22]) on fiscal transparency of natural resource revenues.

- Risk of SIF private sector debt causing fiscal liability. Risk of the SIF issuing unsustainable amounts
 of private sector debt, thereby becoming insolvent. Fiscal losses would arise if the government has
 guaranteed the SIF's debt and/or its operations.
- Risk of liabilities of SIF portfolio companies causing fiscal liability. Risk of actual or contingent liabilities being transferred to the SIF from portfolio companies. Transfer of liabilities could take place if the SIF lends to its portfolio companies, or provides these companies with guarantees.
- Risk of SIF liabilities resulting from the transfer of state-owned assets to the SIF. Liabilities could
 arise, for example, from loss-making state-owned enterprises or special purpose vehicles (SPVs),
 transferred to the SIF without due scrutiny.
- Risk of SIF insolvency or bankruptcy. SIFs that are permitted to borrow carry risk of insolvency and bankruptcy, which the government needs to take particular account of if it is expected to backstop the SIF.

The following paragraphs discuss how each of these six types of fiscal risks can be addressed from a fiscal perspective.

Risk to budget transfers: Budget transfers to the SIF require transparency, and accountability to parliament at two levels: i) transfers from the budget to the SIF; and ii) SIF accountability for the investment of these transfers.

For SIFs that receive budget transfers, these transfers should go through the normal government budget process, thereby being subject to parliamentary scrutiny. If the government is an equity investor in a mixed capital SIF, this investment should also be recorded in budget documentation. This principle, specified in the IMF's Fiscal Transparency Code (IMF, 2014_[1]), addresses the risk of a SIF being used to avoid parliamentary scrutiny of transfers to the SIF, and preserves the integrity of the government budget. In Ireland, the legislation that establishes ISIF sets out that "Where the Minister proposes to make a payment into the Fund [...], the Minister shall move a draft resolution in both Houses of the Oireachtas [the Irish Parliament] specifying the amount of the proposed payment and the Minister shall not make the payment until the resolution approving of the payment and the amount of it has been passed by each such House." 12

Once the funding has been transferred to the SIF, the SIF's management needs to have the functional and operational independence required to take commercially based investment decisions free from political interference (Gelb, Tordo and Halland, 2014_[7]); (Halland, Noel and Tordo, 2016_[2]). A transparent system of budget transfers to the SIF does not guarantee the transparency and accountability of the SIF's own investments and expenditures. As specified in the Santiago Principles (International Working Group on Sovereign Wealth Funds, 2008_[16]), the transparency of the SIF's activities needs to be ensured through its bylaws and operational procedures.¹³

Risk to government lending: In accordance with the principle of competitive neutrality (Capobianco and Christiansen, 2011_[21]), credit terms offered by the government to the SIF should as for other SOEs and public financial institutions be in line with the credit terms offered to private companies (OECD, 2015_[19]). In case of SIF insolvency, government debt would then be treated on par with private sector debt, consistent with relevant insolvency and bankruptcy provisions, as discussed further below.

Risk of SIF private sector debt causing fiscal liability: In a limited number of cases, SIFs are permitted to issue debt in financial markets, which exposes them to potential insolvency. Khazanah, for example, issues Sukuk bonds. From a fiscal perspective, the most critical question regarding SIF debt and

^{12. (}National Treasury Management Agency, 2014[14]), Paragraph 46.

^{13.} The transparency and reporting of the SIF's activities is addressed in Santiago Principles 4, 5, 16 and 17 (International Working Group on Sovereign Wealth Funds, 2008_[16]). See also (Ossowski and Halland, 2016_[18]), pp. 88-89.

insolvency is whether the SIF benefits from an explicit or implicit government guarantee of its liabilities and operations. In other words, whether the government will be legally or politically obliged to act as a lender of last resort in the case of SIF insolvency. Reflecting principles applied to SOEs, the state should as a general rule not provide automatic guarantees to back up SIF liabilities. The International Standard on Insolvency, embodied in the World Bank Principles for Effective Insolvency and Creditor/Debtor Regimes recommends that SOEs be subject to general insolvency law (World Bank, 2014[15]). By extension of the principle of comparative neutrality, this applies to SIFs, and to their relationship with their portfolio companies.

When a SIF is established, government may at the outset make it clear that the SIF will be responsible for its own liabilities, and will under no circumstance benefit from a government backstop. This approach, which could be made explicit in the legislation or regulation establishing the SIF, has several implications. First, the SIF will be able to borrow backed only by its own assets and creditworthiness. Given time, some well-managed SIFs may be able to establish a credit rating independent from that of their home countries, enabling them to leverage their operations independently of the government. The second implication is that insolvency procedures should be put in place at the outset to prepare for the possibility of insolvency. If such procedures are not in place, this increases the risk that the government will be forced to backstop the SIF in spite of previous commitment to the contrary.

If a government nevertheless chooses to issue guarantees to a SIF, then it could first establish some guiding principles on the issuance of guarantees. These could include:

- Formal policy guidelines: The government can issue policy guidelines that spell out the criteria to be applied for the assessment, valuation, and approval of guarantees for SIF debts.
- Central control: The granting of guarantees can be subject to central control. Guarantees can be approved by the Ministry of Finance and the legislature. Legislative approval makes it clear that guarantees are risk expenditures that can burden future budgets, and therefore need parliamentary authorisation. Many countries require legislative approval of various explicit contingent liabilities. In Latin America, for example, these include Brazil, Chile, Colombia, Costa Rica, El Salvador, Mexico and Peru.
- Quantitative limits on guarantees: If the SIF benefits from government guaranteed debt, the government can specifically instruct the SIFs as to how much guaranteed debt it is allowed to take on, and on which terms. In Ireland for example (National Treasury Management Agency, 2014_[14]), the ISIF's activities must "not have a negative impact on the net borrowing of the general Government of the State for any year". Governments can set aggregate quantitative limits on the guarantees that it issues, and require legislative approval for those limits. Limits can be established for the face values of guarantees that can be issued during the fiscal year (or their expected values), or on the total stock of guarantees. An advantage of setting aggregate limits is that competition for approval of guarantees under the limits will strengthen analysis and prioritisation of guarantee requests.
- Fee-based guarantees: In cases where a state guarantee is provided to the SIF, the principle of competitive neutrality would indicate that guarantee fees should correspond to the terms available to the private sector, and any difference of terms estimated and disclosed (Capobianco and Christiansen, 2011_[21]). Fee-based guarantees can improve efficiency in the allocation of scarce public resources.

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^{14. (}National Treasury Management Agency, 2014[14]), paragraph 40.2.b.

Risk of liabilities of SIF portfolio companies causing fiscal liability: A SIF may assume liabilities on behalf of the companies which it owns or where it holds shares with third parties. For example, if the SIF – due to its size, credibility, or credit rating – is able to obtain lower market rates on loans than its portfolio companies, a SIF that is permitted to borrow can pass through these less costly loans to its portfolio companies. In this case, if the portfolio company becomes insolvent, the liability is transferred to the SIF. A similar dynamic applies if the SIF provides guarantees for the portfolio company's debt.

If the bankruptcy of a portfolio company has significant negative social consequences, such as service interruptions to electricity or water supply, or layoffs, this may expose the SIF to political pressures to rescue the company. In principle, SIF losses arising from the insolvency and subsequent bankruptcy of a portfolio company are limited to the SIF's investment in the company, and any outstanding loans. This is not different from any other investor. However, as a state-backed investor, a SIF is in principle more exposed to political pressures than private investors, and public capital SIFs are in principle more exposed than mixed capital SIFs.

To support fiscal transparency, the terms on which a public capital SIF may lend or provide guarantees to its portfolio companies, and the procedures for pricing of these products, can be defined in the SIF's bylaws and should seek to be consistent with the country's overall fiscal guidance for financial sector SOEs. Furthermore, all such liabilities should be accounted for in the SIF's reporting to its Board and to the government, in accordance with the accounting standard adopted by the SIF, usually IFRS.

Risk of SIF liabilities resulting from the transfer of state-owned assets to the SIF: The financial state of government assets transferred to the SIF matter for the relationship between the SIF and the government. A number of SIFs, for example Temasek and the Turkey Wealth Fund, have been fully or partly capitalised with ownership shares in state-owned enterprises, public infrastructure, and other state-owned real assets. Are these assets at the time of transfer generating profits, or are they loss-making and in need of restructuring? These two possibilities have very different financial implications, for the value of the fund as well as for the financial relationship between the fund and the government. In the first case, it could be appropriate for the government to define a dividend policy, to make up for the loss of budget contributions previously provided by the transferred assets. In the second case, the SIF could require budget resources to finance the restructuring.

The SIFs independence in investment decisions includes government assets. To be able to act as a commercial investment organisation, the SIF needs to be mandated to undertake its own independent due diligence on all assets that it takes onto its balance sheet, and to make independent decisions on whether to take ownership of these assets. If the government wishes the SIF to take over, for example, its share in a loss-making infrastructure company, this should be an independent commercial decision by the SIF, based on expectations of future profitability of the company. If viability gap funding or other budget resources are required to make the transaction palatable for the SIF, then such funding should go through the government budget. This is consistent with the OECD guidelines (OECD, 2015[19]) on clear separation of commercial and non-commercial SOE activities.

Risk of SIF insolvency or bankruptcy: SIFs that are permitted to borrow carry risk of insolvency and bankruptcy. SIFs established under general commercial legislation, or legislation for investment funds, are subject to insolvency and bankruptcy provisions as specified in this legislation, whereas SIFs established by separate law or act of parliament are subject to the provisions specified in the dedicated law.

Whether a SIFs is set up as company, an investment fund, or as a trust, prevailing legislation for each of these types of structures address situations where the SIF becomes insolvent. This covers mixed capital SIFs, as well as public capital SIFs established as companies, investment funds, or trusts. For public capital SIFs established by separate law or act of parliament, this legislation should, if the SIF is permitted to borrow, contain insolvency provisions.

If the government is *de jure* or *de facto* expected to backstop the SIF in case of insolvency, then the SIF's liabilities need to be accounted for in the government general fiscal policy analysis on par with the risk arising from state-owned enterprises. It is important to establish the SIF's financial relationship with the government budget, and to assess how that relationship could be affected by macroeconomic or sector-specific circumstances. The IMF's Fiscal Transparency Code (IMF, 2014_[1]) recommends that government budget documentation contain a statement of fiscal risk that includes liabilities resulting from SOE debt. This applies also to SIFs. The analysis of a SIF's debt sustainability, its debt with relation to its profitability, can be informed by the analytical tools or "stress tests" developed by the IMF to assess the financial soundness of state financial institutions. These can be implemented by the authority responsible for surveillance of the banking system (World Bank, 2014_[15]).

6 Conclusions

This paper has outlined fiscal challenges and risks associated with the operations of SIFs, and has provided suggestions for addressing and mitigating these risks. In principle, fiscal risks differ between public capital and mixed capital SIFs. In mixed capital SIFs, the government's liability is commonly limited to the capital invested (limited liability), and the government is generally less likely to face pressures to lend to the SIF, to provide guarantees, and to rescue the SIF or its portfolio companies from insolvency or bankruptcy. Furthermore, the participation of private investors in a mixed capital SIF is likely to enhance the independence of the SIF vis-à-vis the government, and provides some insulation from political pressures on commercial investment decisions.

The presence of private investors is also likely to strengthen due diligence of the SIF's investments, and reduce the risk of the SIF being pressured to take on state-owned assets on non-commercial terms. Therefore, mixed-capital SIFs have the potential to generate less fiscal risk than do fully state-owned public capital SIFs. On the other hand, the fiscal risks arising from wholly state-owned or state-controlled SIFs can be mitigated with proper safeguards. Key elements include transparency with regard to all financial flows between the government budget and the SIF; with regard to all government commitments to the SIF and vice-versa; and transparency of the SIF's operations. The principle of competitive neutrality provides a basis for managing the fiscal risks associated with public capital SIFs.

In any case, a SIF's ability to avoid undue fiscal liabilities and risks is determined by the SIF's *de facto* operational practice, as much as by the *de jure* framework that regulates it. This is the case for SIFs that are set up as mixed capital structures, as much as for those established as public capital investment vehicles. In this respect, key elements include the quality of the SIFs senior management team, its board or equivalent governing entity, and of the entity responsible for managing the government's ownership share.

Only limited information is publicly available on how SIFs and their governments identify and manage the fiscal risk arising from SIFs' operations. This paper therefore draws heavily on commonly accepted principles of public financial management – more than on empirical evidence. To establish an empirical basis for addressing the topics covered in this paper, further research will be necessary.

References

Enterprises: Challenges and Policy Options", <i>OECD Corporate Governance Working Papers</i> , No. 1, OECD Publishing, Paris, https://dx.doi.org/10.1787/5kg9xfgjdhg6-en .	[21]
Clark, P. and A. Monk (2015), Sovereign Development Funds: Designing High-Performance, Strategic Investment Institutions, https://dx.doi.org/10.2139/ssrn.2667974 .	[5]
Corden, W. and J. Peter Neary (1982), <i>Booming Sector and De-Industrialisation in a Small Open Economy</i> , The Economic Journal, December, Vol. 92 N°398 825-848, http://dx.doi.org/10.2307/2232670 .	[17]
Dabla-Norris, E. et al. (2011), Investing in Public Investment: An Index of Public Investment Effciency, IMF, pp. 17, 235-266, September, https://www.imf.org/external/pubs/ft/wp/2011/wp1137.pdf .	[8]
Daouda, M., U. Orji and M. Mbaye (2021), <i>Harnessing Africa's Sovereign Wealth. Project Syndicate</i> , <i>May 17</i> , https://www.project-syndicate.org/commentary/african-sovereign-wealth-funds-can-attract-foreign-investment-by-akim-daouda-et-al-2021-05 .	[4]
Debusmann, B. (2017), <i>ADIA signs \$1bn investment deal with India's NIIF. Arabian Business</i> , https://www.arabianbusiness.com/industries/banking-finance/381361-adia-signs-1bn-investment-deal-with-indias-niif .	[12]
Divakaran et al. (forthcoming), <i>Strategic Investment Funds: Establishment and Operations</i> , World Bank.	[6]
Gelb, A., S. Tordo and H. Halland (2014), Sovereign Wealth Funds and Domestic Investment in Resource-Rich Countries: Love Me, or Love Me Not?, World Bank Economic Premise, p. 133, http://documents1.worldbank.org/curated/en/591431468327388337/pdf/840160BRI0EP130Box0382124B00PUBLIC0.pdf .	[7]
Gelb, A., S. Tordo and H. Halland (2014), "Sovereign Wealth Funds and Long-Term Development Finance: Risks and Opportunities" World Bank Research Paper 6776, https://doi.org/10.1596/1813-9450-6776 .	[9]
Government of Senegal (2012), Loi autorisant la création d'un Fonds Souverain d'Investissements Stratégiques (FONSIS).	[13]
Halland, H., M. Noel and S. Tordo (2016), <i>Strategic Investment Funds: Opportunities and Challenges</i> , World Bank Policy Research Working Paper, No. 7851, Washington D.C., https://doi.org/10.1596/1813-9450-7851 .	[2]
IMF (2018), Fiscal Transparency Handbook, https://doi.org/10.5089/9781484331859.069 .	[20]