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Public savings in Africa: do sovereign wealth funds serve development?

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Abstract: Do sovereign wealth funds (SWFs) contribute to Africa’s development? This paper assesses the objectives of SWFs (fiscal stabilization, productive investment, intergenerational saving) and discusses alternatives. We argue that fiscal stabilization funds are often necessary, but entail considerable opportunity costs. In the absence of a strong framework of multilateral financial assistance that would reduce ‘self-insurance’ needs, paying down sovereign debt during times of revenue windfalls may constitute a better option as the cost of debt servicing usually exceeds the rate of return on financial investments. Investing in human capital and infrastructure has higher developmental returns than the returns on financial assets in intergenerational SWFs. Capitalizing development funds or national development banks to fund productive investments for long term structural transformation, provided they have clear mandates and strong governance, may also be preferable to intergenerational SWFs.

Key words: public savings, sovereign wealth funds, national development banks, fiscal stabilization, Africa

JEL classification: O10, O20, O55, Q32

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1 Introduction

There are now more than 100 sovereign wealth funds (SWFs) worldwide, including 19 in Africa. Collectively they hold US\$8 trillion in assets making them truly global financial players. However, Africa's 19 SWFs, with a capitalization of US\$72.9 billion, represent less than 1 per cent of the total. This has fallen by 58 per cent compared to 2013 (US\$174 billion), the result of the end of the 2000–14 commodity super-cycle and subsequent shocks, notably the COVID-19 pandemic, which led to public *dis*-saving as governments sought, for good reasons, to maintain their spending.

Much of the capital base of SWFs consists of public savings derived from taxes, royalties, dividends, and licences from oil and gas (O&G) and, to a lesser extent, mining.¹ Of the world's twenty biggest SWFs (by value), twelve originate in savings from O&G revenues, including the Libyan Investment Authority (LIA), Africa's largest SWF and the only African SWF in the global top 20. Africa's next largest (and oldest) SWF is Botswana's Pula fund, originating in diamond revenues. O&G economies—Algeria, Angola, Equatorial Guinea, Ghana, Nigeria, and Uganda—constitute most of the region's remaining SWFs.

The revenue outlook for Africa's O&G producers, and their SWFs, is uncertain. We are in the midst of a hesitant global recovery from COVID-19, and turmoil in global commodity markets—accentuated by the Ukraine–Russia war. Longer term, renewables will eventually come to dominate global energy generation and electric vehicles (EVs) will dominate transport if the world is to contain emissions. In the meantime, gas is in strong demand to replace coal in power plants, benefiting Algeria, Nigeria and eventually Mozambique (which is considering an SWF). The revenue forecasts for the metals used in EVs and the infrastructure of renewable energy are strong and so SWFs may also come onto the policy agendas of countries mining the metals vital to 'net zero', notably the Democratic Republic of the Congo (DRC) which has over 60 per cent of the world's cobalt reserves, and those capable of producing green hydrogen from solar or hydro power (Namibia and Mozambique).² In addition, some countries with small extractive sectors have created an SWF, notably Rwanda.

The assessment of the role sovereign wealth funds in Africa has already been the core objective of previous studies during the 2000-2014 commodity cycle which saw increased policy interest in their creation.³ But given recent events and trends, now is a good time to reassess the current role and future potential of SWFs in Africa, and this is the purpose of our paper. Its structure is as follows. Section 2 provides a brief overview of public savings, SWFs and the three objectives that are most relevant to African policy, namely: *stabilization* (to smooth public spending in the face of shocks), *intergenerational savings* (to transfer wealth across generations), and *domestic development* (to fund infrastructure and domestic companies with growth-potential).⁴

¹ See Sovereign Wealth Fund Institute www.swfinstitute.org. Cumming et al. (2017) provide an overview of SWFs.

² This is additional to the demand for metals used in manufacturing computers, servers and the other infrastructure of the global digital economy plus the demand for metals in constructing buildings as the developing world continues to urbanize. See Addison (2018).

³ See Truman 2008; Belaïcha et al. 2009; Triki and Faye 2011; Cieslik 2014, Diallo et al. 2016; for instance.

⁴ Sovereign wealth funds are sometimes referred to simply as 'sovereign funds' in the policy debate. We add the description *intergenerational* to savings funds as all three main types of SWFs are constituted out of public savings, but their asset portfolios differ depending on the fund's objective. Note also that before public savings takes place, public money is spent via the budget on infrastructure, as well as education and health etc, which build human capital—all of these constitute investments. For this reason we avoid describing public spending as 'consumption'

Section 3 summarizes what we know about Africa’s SWFs with the proviso that for many countries the statistical picture is opaque (sometimes deliberately so). Building on this, section 4 assesses whether SWFs are fulfilling national development objectives and how they could be improved. We first consider a stabilization SWF in the context of adverse shocks and compare it to paying down the national debt instead. Next, we analyse the use of public savings to capitalize a sovereign development fund (SDF) or a national development bank (NDB) which can then draw upon private savings via the domestic and foreign capital markets. Finally, section 4 discusses a SWF whose main purpose is intergenerational savings, and we compare this to the alternatives, notably human capital investment as a means for intergenerational wealth transfer.

The paper concludes, in section 5, that with the exception of middle-income countries (MICs) with very large revenues (notably Botswana) the case for intergenerational SWFs in Africa is weak. The average returns on investment in human capital and critical infrastructure far exceed those on financial investments, and so offer superior intergenerational wealth transfer in addition to benefiting the current generation (many of whom live in dire poverty). There is a stronger case for an SDF and/or an NDB, provided that they have clear mandates and are protected from disruptive elite interference by strong governance and legislative oversight. However, Africa’s low- and lower-middle-income countries (LICs and LMICs) have limited managerial and regulatory capacity; it is therefore better to have one truly effective institution, rather than two weaker ones, and an NDB offers the greater potential. Stabilization funds are necessary, but they entail considerable opportunity costs, and a generous framework of multilateral financial assistance would reduce the need for such ‘self-insurance’. Unfortunately, that framework remains weak.

2 Public savings and sovereign wealth funds

2.1 Fund types and asset allocations

The term ‘public savings’ refers to saving by the public sector which occurs when current public revenues exceed current public expenditures.⁵ If this surplus is not used to reduce public debt, then it can be saved in a fund or funds which accumulate over time as additional principal is added and as the returns are reinvested.⁶

Policy discussions of SWFs typically identify five potential objectives. This paper will focus on the *three* that are most relevant for Africa, namely: (i) fiscal stabilization; (ii) intergenerational wealth transfer, and; (iii) development via investment financing infrastructure investment and companies with a potential for strong growth (see Table 1).⁷

(the policy debate sometimes frames the choice as one of ‘consuming’ versus ‘saving’ the government’s revenue from a resource windfall, but this is somewhat misleading). An SWF focused on infrastructure and enterprise investments, which we label a ‘development SWF’ is sometimes called a ‘strategic SWF’ (see <https://globalswf.com>) and sometimes a ‘strategic investment fund’ (OECD 2020). There is ambiguity in the terminology around SWFs, in part due to the evolution of the funds themselves as well as in their objectives (see Megginson and Fotak 2015).

⁵ The difference between current public spending and current revenue constitutes the current fiscal balance, which may be either positive or negative. The ‘public sector’ covers central government, local government, and publicly owned entities such as national airlines.

⁶ Al-Hassan et al. (2013).

⁷ The other two objectives are: (iv) pension reserve funds, aiming to meet future public pension liabilities (these are used in some advanced economies, e.g., Australia) and (v) reserve investment corporations which seek to earn a

A fiscal stabilization fund aims to smooth public spending in the event of shocks, especially the price volatility characterizing commodity markets. A portion of annual revenue is saved, sometimes according to a fiscal rule set in law. The fund can then be drawn upon to smooth public spending in the event of adverse shocks or, when the fund becomes especially large, an annual amount may be withdrawn (with a rule governing the size of any withdrawal, as in Chile, Botswana or Norway). Without a stabilization fund, expenditures, non-resource taxation, and/or debt will take the burden of any fiscal adjustment. An additional rule may allow larger withdrawals during extreme events such as natural disasters or even falls in commodity prices/revenues. An *intergenerational SWF* shares resource wealth with future generations by retaining a portion of revenue for investment in financial assets. Once the fund has reached a target size, the government of the future generation can make regular withdrawals of income to fund spending. A *Sovereign Development Fund* provides finance for infrastructure investment and companies with strong growth potential that private capital markets find unappealing. In effect public savings take on the role of private savings when the domestic financial system fails to efficiently intermediate the latter (e.g., lending to promising small- and medium-sized enterprises). It therefore offers the potential to correct for market failures which are especially pervasive in LICs.

In addition to these specific fund goals, there is often an over-arching aim: to prevent the ‘resource curse’ and, more specifically its adverse macroeconomic dimensions—‘Dutch Disease’. Thus, the Bank of Mozambique’s report on the SWF now under consideration states upfront that: ‘In addition to helping to minimize the undesirable macroeconomic impacts of an excessive inflow of revenue into the economy, the creation of an SWF helps to discipline the use of revenue and create conditions for its sustainable management’ (Bank of Mozambique 2020: 1). We return to the resource curse shortly, but for the moment we must continue our discussion of fund types, including the choice of assets.

Governments can establish more than one fund, each with its own objective and an asset portfolio to match. For example, the Ghana Stabilization Fund is intended to cushion public spending during periods of unanticipated petroleum revenue shortfall, the Ghana Heritage Fund is an intergenerational investment fund, and the Ghana Infrastructure Investment Fund is an SDF.⁸ Nigeria’s Sovereign Investment Authority (NSIA) likewise has three funds: stabilization, infrastructure, and a ‘future generations’ fund. However, SWFs with more than one objective for a single fund are also quite common: Botswana’s Pula Fund and Mozambique’s prospective SWF have both stabilization and intergenerational savings objectives.⁹ Running several funds entails additional administration, but has the merit of only one objective against which to match assets. If a single fund has several objectives then its portfolio should reflect the relative *weight* of each objective to policy-makers. When the purpose of the fund is unclear, its governance becomes harder.

higher return on foreign exchange reserves than just holding them in ‘cash’ (these are used in countries with very large reserves, notably China and Singapore).

⁸ <https://ftp.nsia.com.ng/investments/stabilisation-fund>. In anticipation of its oil revenues, Ghana’s policy-makers consulted intensively with their Nigerian colleagues on how to best manage the windfall and avoid Nigeria’s mistakes; see Bawumia and Halland (2018: 220–42).

⁹ Bank of Mozambique (2020: 2).

Table 1: Summary of the different objectives of SWFs, with African examples

Type of SWF	Stabilization funds	Intergenerational savings funds	Development funds
Objectives	Provide a fiscal ‘buffer’ in the event of negative shocks, enabling the government to sustain spending (if the fund is large enough and the shock is temporary) without increasing debt or, if the fund is small relative to the size of the fiscal shock, at least cushion the impact and allow a more gradual and less painful adjustment to spending (with less urgency to borrow as well). The fund will also indirectly dampen the exchange rate volatility associated with shocks as the presence or not of a buffer will affect the expectations of agents regarding the future trajectory of government finances and therefore the real economy.	Transfer current resource wealth to future generations. The purpose of the fund may be to meet specific future liabilities, for example pensions, but in the case of LICs and LMICs the future use of the funds is often left undefined. Once the fund and its returns have reached their target size, the government can make regular withdrawals to help pay for its then current liabilities (e.g., public pensions) or current spending. Such future withdrawals may be subject to a set of rules, and require approval by the legislature, including exceptionally large withdrawals to meet an unexpected shock (in which case, <i>de facto</i> , the intergenerational fund also takes on a stabilization role).	Encourage national development by investing a portion of their portfolio in the equity and debt of local companies with a potential for growth. They may also invest in infrastructure, most commonly in entities that are expected to provide a steady and secure income such as power plants. Governments may transfer state assets for eventual privatization to SDFs as well, the SDF retaining an equity stake after privatization (as in Egypt or Malaysia). Their foreign investment portfolio will include the equity of companies that can partner with domestic companies to build joint ventures and transfer technologies and skills.
Types of assets	Mostly liquid (and therefore low-yielding), such as sovereign bonds with an investment grade rating (typically US Treasuries).	Mostly illiquid assets such as investment-grade bonds of long duration, corporate debt, private equity, and commercial property overseas.	Relatively illiquid domestic assets, such as equity positions in unlisted ‘start-ups’ and newly privatized companies.
Examples	Algeria’s <i>Fond de Regulation des Recettes</i> Botswana’s Pula Fund Ghana’s Stabilization Fund Sao Tome and Principe’s National Oil Account	Ghana’s Heritage Fund Nigeria’s Future Generations Fund Equatorial Guinea’s <i>Fonds de Réserve pour Générations Futures</i>	Gabon’s Strategic Investment Fund Ghana Infrastructure Investment Fund Senegal’s FONSIS

Source: authors’ construction using information provided by national sources on the funds.

The assets selected by the different types of SWF should match the fund’s objectives:

- The assets of a stabilization fund are mostly liquid (and therefore low-yielding) as they will need to be sold at short notice to support the budget if a negative shock strikes. Stabilization funds favour sovereign bonds with an investment grade rating and of the shortest duration (US Treasury bonds most often).¹⁰
- To maximize its returns, an intergenerational SWF holds a high proportion of relatively illiquid assets such as investment-grade bonds of long duration, corporate debt, together with the stocks of listed companies, equity in unlisted companies (usually via private equity funds or direct ownership) and commercial property in major cities such as London and New York.

¹⁰ The central bank will also hold the foreign exchange reserves in liquid foreign currency assets in order to manage the exchange rate.

- An SDF holds a much higher proportion of its assets in domestic investments, often relatively illiquid such as equity positions in unlisted ‘start-up’ companies or shares in newly privatized companies, whereas stabilization and intergenerational funds hold mostly foreign assets.

These distinctions between funds are not watertight and a fund set up for one purpose may over time take on another. This may be a strategic decision as successive governments take a different view to their predecessors over the role of public savings. The investment portfolio then needs to shift towards assets aligned with the new objective, although whether this happens in all cases is moot point.

Fiscal crises often turn intergenerational SWFs into *de facto* stabilization funds as assets are sold to shore up the budget. As the oil price slumped in 2020, many of the oil economies either sold assets from SWFs whose original purpose was intergenerational savings, or stopped replenishing them. They found ready buyers as most global asset markets were buoyant (the result of an unprecedented expansion in liquidity by the US Fed and other central banks to offset the shock of the pandemic). But this is not the case for every crisis: in particular sellers of illiquid assets such as commercial property risk a low price if the market is weak. If the shock originates in major financial markets—as it did in the global financial crisis (GFC) of 2008–09—then sellers can face a shortage of buyers, as the markets turn illiquid.

SWFs that started with an entirely foreign asset portfolio may eventually invest domestically as well, like an SDF, as the risk-adjusted returns of domestic assets start to match foreign assets. More troubling, governments may use them to prop up failing enterprises or to benefit the businesses of politically-connected elites.

The timing of the start of the SWF is an important consideration. Policy-makers wishing to head off inflated spending plans may make an early announcement, including the underlying fiscal rule as well. This can help manage the expectations of over-eager politicians. Once the revenues flow, they can then be held in a treasury account before they reach a size sufficient to begin capitalizing the fund, with then some additional years before the fund can make its first investments.¹¹

2.2 Preventing the ‘resource curse’

A new resource discovery gives rise to expectations about future revenues. These are inevitably subject to a large amount of uncertainty, resulting from: (i) the process of negotiating and agreeing the fiscal terms that govern the apportionment of revenues between the producing companies and the state; (ii) the construction of the O&G or mining infrastructure which can take up to decade (and sometimes more) for large-scale operations; and, not least, (iii) the evolution of the markets and the trajectory of prices.¹² Much can change between discovery and receipt of the first annual revenues. And those initial revenues can be limited if, as is usually the case, the investment agreement with the multinational operator includes tax allowances that allow the company to recoup its investment expenditures (likewise the national oil company may make limited initial transfers to the treasury).

¹¹ The Norway Wealth Fund was created in 1990 and received its first transfer of capital in 1996. The large oil finds that underpin Norway’s oil wealth were made in 1969, some two decades before the SWF began operation.

¹² Uganda provides one example of the lengthy time lags: oil from the Albertine basin is expected to start delivery in 2024 or 2025, nearly 20 years after its discovery was announced in 2006 (Kayizzi-Mugerwa 2020).

Governments therefore need to avoid inflated expectations about the scale of the revenue windfall, its timing, and its duration. Nevertheless, grandiose spending plans are all too common after the announcement of resource discoveries and are often implemented many years before the revenues actually arrive in the treasury. The government may also begin to borrow against the expected windfall. This can be rational if there are especially good projects sitting waiting for funding, but it can spin out of control. This has been called the ‘pre-resource curse’ (see Bauer and Mihalyi 2018; Mihalyi and Scurfield 2020; Roe 2018). The resource curse itself has many dimensions, including ‘Dutch Disease’ whereby a large injection of demand—if the windfall is large and the revenues are fully spent—distorts the real economy to the detriment of growth in the non-extractive sectors (agriculture especially).¹³ Demand growth runs up against limited domestic supply, causing inflation to rise and a loss in competitiveness (the real exchange rate appreciates).¹⁴ The nominal exchange rate may appreciate as well, cheapening the domestic currency cost of debt-service and encouraging debt accumulation.¹⁵ The current account deficit (excluding oil, gas or metals exports) tends to widen as agriculture contracts under competition from cheaper food imports and as domestic manufacturing becomes uncompetitive. Angola, Equatorial Guinea, and Nigeria in their oil boom years provide typical examples of Dutch Disease.¹⁶

Public savings reduce the risk of such macroeconomic instability. How much to save depends on assessing the scale of the demand impulse resulting from the resource boom in relation to the economy’s ability to ramp-up supply. The scale of saving will be a function of the size of the demand impulse (relative to GDP) and the degree of supply-elasticity in domestic production. Hence, a small LIC economy with multiple supply-constraints and a large resource windfall should in principle save more than a MIC with greater supply-elasticity. Using a portion of the savings to capitalize a SDF or a NDB can help reduce supply constraints—alongside investments from the capital budget—provided that prospective projects are carefully evaluated and well-executed (the wasteful funding of ill-conceived ‘white elephants’ is an unfortunate feature of resource economies). This includes human capital investments, as skills are often a key supply-constraint.¹⁷ We return to this issue later in the paper.

Our discussion now turns to what is known about the size of Africa’s SWFs and their modus operandi, before proceeding to an appraisal of each type of SWF in section 4.

3 Sovereign wealth funds in Africa

This section considers the investment profiles and objectives of SWFs, makes comparisons within Africa, between Africa and other regions, and sets SWFs in the context of the development financing needs of the continent.

¹³ On the Resource Curse, see Collier et al. (2010); Henstridge and Roe (2018: 161–78); Lahn and Stevens (2018: 93–113); Van der Ploeg and Venables (2018).

¹⁴ The small-scale and often limited experience and skills of the domestic construction industry is an important constraint (Page and Tarp 2020).

¹⁵ Unless the authorities are pursuing a fixed exchange-rate policy. To dampen inflation, the central bank may sterilize some of the associated increase in the monetary base (consequent on the capital inflow) by selling treasury bills. However, the scope of sterilization is limited by the thinness of financial markets in LICs and LMICs.

¹⁶ See Aguilar (2003: 125–40) on Angola, and Pinto (1987) on Nigeria.

¹⁷ The capabilities of the domestic construction sector is another major constraint on the supply-side of LIC economies: see Page and Tarp (2020) and Cruz et al. (2020: 183–208) on Mozambique.

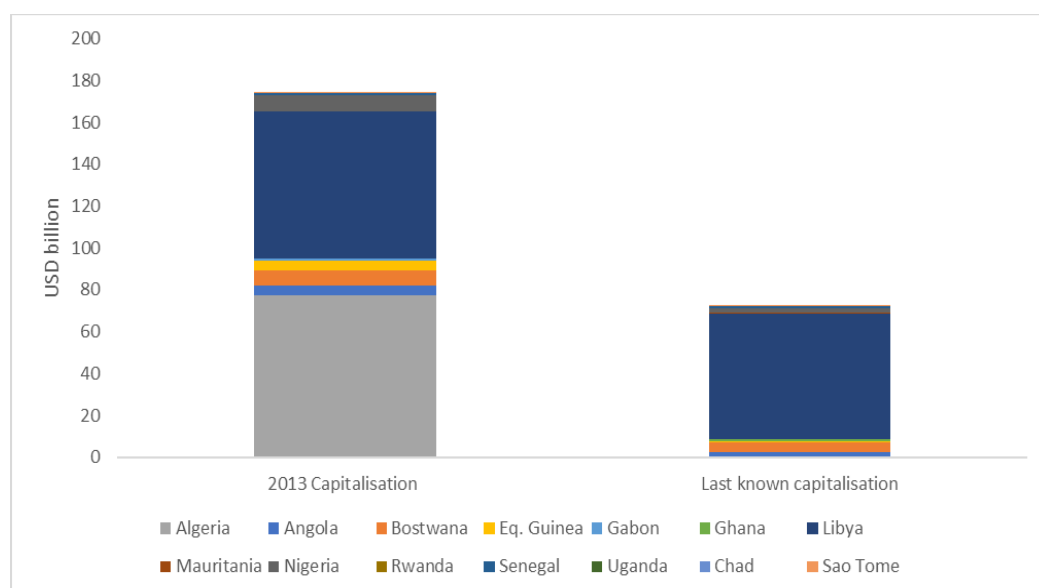
3.1 A profile of Africa's sovereign wealth funds

Appendix Table A1 summarizes information about SWFs in Africa. The data is very fragmentary, and indeed some SWFs appear to be organized in such a way as to conceal rather than make transparent their holdings and modus operandi.

There are currently 19 SWFs in Africa with a total estimated capitalization of US\$72.9 billion in 2020. There has been a staggering 58 per cent decline in capitalization compared to 2013 (US\$174 billion) (see Figure 1). The end of the commodities super-cycle, especially in oil, which began in 2000 and ended in 2014 is the main driver of the substantial fall (and the COVID-19 pandemic is likely to have seen a further decline).

The majority of Africa's SWFs were mostly funded by commodity revenues generated during this boom. About half of all African SWFs were created within the past decade (see Figure 2). There may be some recovery in Africa's SWFs over the next few years if, as some observers argue, we have now entered another super-cycle for metals—consequent on the material needs of the Net zero transition—while oil and gas prices are now well-above their 2020 pandemic lows. However, commodity markets are currently highly unstable, consequent upon the Ukraine–Russia war, and the prospects of a global recession are pushing prices down once again, renewing budgetary pressures and reducing public savings.

Figure 1: Evolution of the total capitalization of SWFs across Africa

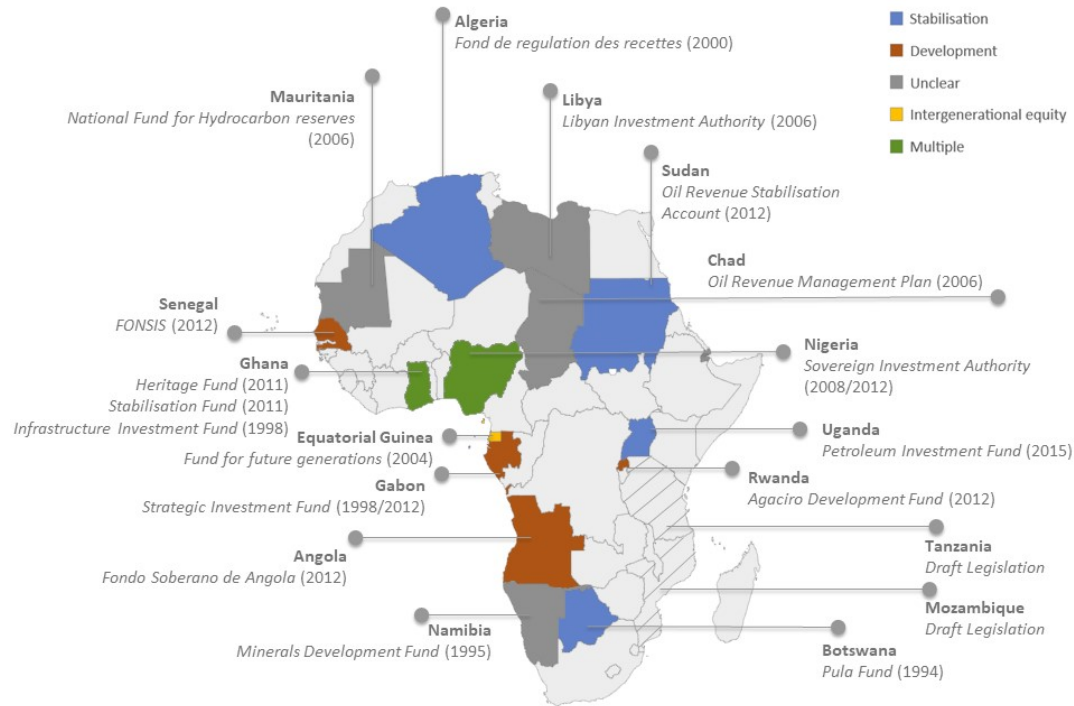


Source: authors' illustration based on compiled data from the SWFI database and financial reports.

Fiscal stabilization and intergenerational wealth transfer are the main objectives of Africa's SWFs, and domestic investment is low down in their list of priorities (exceptions are Ghana and Nigeria and, perhaps, Angola and Senegal) as shown in Figure 2. This is in contrast to, for example, Malaysia. As already shown in Triki and Faye (2011), most African SWFs are small and are stabilization funds (see Table 1), such as in Algeria, Botswana, Sudan, and Sao Tome and Principe. Some also aim to save for future generations, such as that of Equatorial Guinea. In 2013, Africa's largest SWFs were those in Algeria and Libya (both over US\$50 billion in assets). Based on available information, the only large fund that remains today is that of Libya (US\$60 billion), followed—at some considerable distance behind—by Botswana's Pula fund (around US\$5 billion). Algeria's *Fond de Regulation des recettes* (Revenue Regulation Fund) was one of Africa's largest sovereign wealth funds following its creation in 2000, but was gradually emptied out to maintain

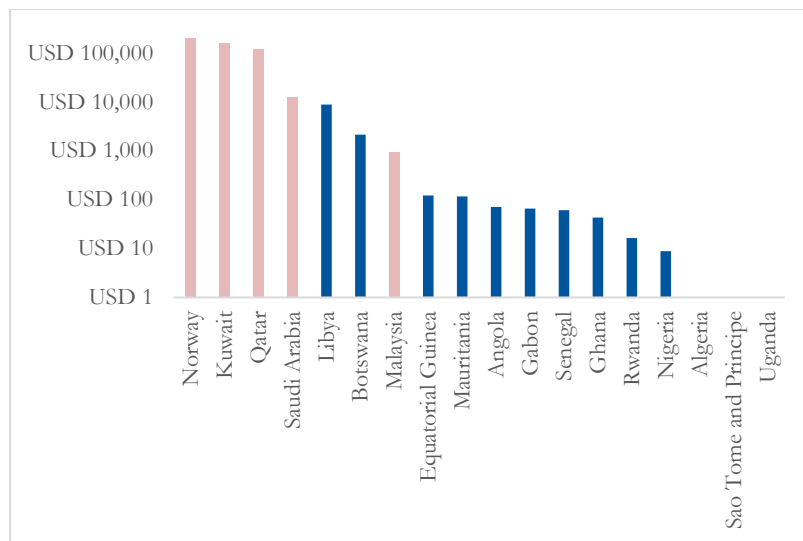
spending as public revenues fell alongside commodity prices from 2014 on. From a capitalization of about US\$77.2 billion in 2013, the fund held about US\$32.5 billion in 2015 and was completely emptied out by 2017, as per recent accounts (see Hadj Moussa 2021). Meanwhile, Angola’s fund was looted by the dos Santos family (see later discussion).

Figure 2: Mapping the objectives of SWFs in Africa



Source: authors' construction based on national sources.

Figure 3: Capitalization of SWFs on a per capita basis by country (log scale)

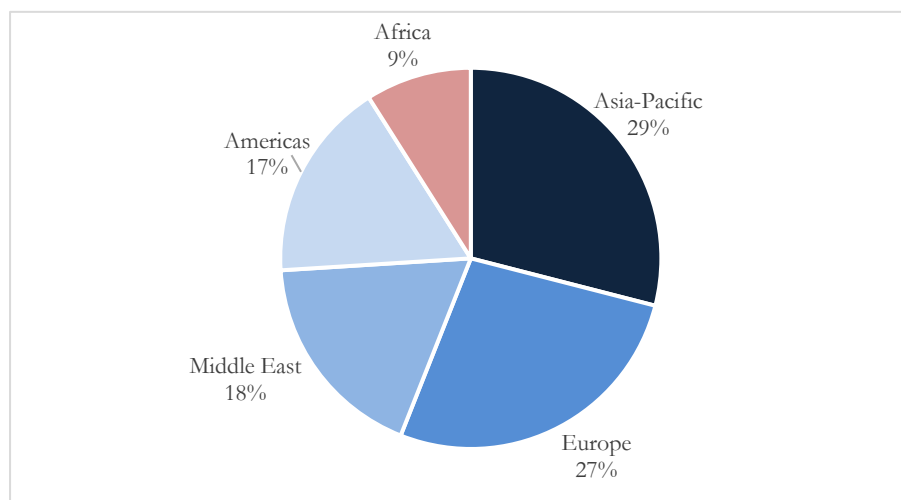


Source: authors' construction.

Africa's SWFs only represent an estimated 2–4 per cent of the world's total SWF capitalization as per our own calculations. Figure 3 shows the capitalization of SWFs on a per capita basis by country (and are compared with three others: Norway's oil fund, Malaysia's Khazanah, Saudi Arabia's PIF). From this it is evident that if Africa's SWFs were to aim to save for future generations then they would need much more capital than they currently possess—and therefore a much higher rate of public saving—in order to accumulate a fund yielding an income sufficient to provide for reasonably large transfers to their citizens.

It should be noted at this point, that the very largest SWFs are big global investors. However, Africa only received around 9 per cent of SWF investments globally; see Figure 4. Attracting such capital, which often funds long-term investments, should be a goal for the future.¹⁸

Figure 4: World sovereign wealth fund investments by target regions



Source: elaboration based on Diallo et al. (2016) and Monitor-FEEM SWF data.

3.2 Governance of sovereign funds

The governance of SWFs is a critical issue. Many SWFs are institutionally weak and the difficulty of obtaining basic financial information on them certainly highlights their non-transparency which may well, sometimes deliberately, hide their true purpose: the accumulation of private wealth for the elite rather than public wealth for the citizenry (see Box 1). This problem is unfortunately not confined to Africa, but the continent's poverty makes it more acute. Two challenges stand out.

First, newly-established SWFs can lack the necessary financial expertise to create an investment portfolio which matches the funds' goals (and which conforms to the government's tolerance for risk). Small SWFs outsource their fund management to external fund managers, typically based in London and New York. Such international fund managers compete for business, and their incentive is to inflate expected returns in their pitch to prospective SWF clients—who may then unwittingly take on high levels of risk. SWFs must hire a cadre of national expertise capable of selecting and monitoring international fund managers. Such expertise is limited especially in LICs and expensive. The sad saga of Libya's SWF illustrates the potential losses when local expertise is lacking (see Box 1).

¹⁸ UN (2020).

Box 1: Mismanaging Africa's SWFs: examples

Angola's FSDEA, valued at around US\$5 billion, was restructured after José Filomeno dos Santos, the eldest son of the former president, José Eduardo dos Santos, was sacked as chairman by President João Lourenço.¹⁹ This was after FSDEA paid some US\$90 million in fees to a business associate of the FSDEA head via an offshore company (as revealed by the 'Paradise Papers' leak) and questionable investments in local tourism and infrastructure projects linked to the family and close associates of the former president. In August 2020, José Filomeno dos Santos was jailed along with the former central bank governor, Valter Filipe da Silva, and others for embezzling up to US\$1.5 billion from the FSDEA. He was charged with stealing US\$500 million from the fund and transferring it to Swiss and UK bank accounts. The subsequent clean-up of FSDEA has enabled Angola to reach second position among African countries on the latest (2019) PIIIE scorecard for SWFs (Table 1; Maire et al. (2021: 6). However, the reform, while welcome, does not make up for past losses.

Equatorial Guinea's *Fonds de Réserves pour Générations Futures*, valued at somewhere between US\$165 million and US\$413 million (there are no public accounts) sits at the bottom of PIIIE's SWF scorecard (11/100: see Table 2) where it has languished since the scoreboard's first year (2007). In principle, the government follows a fiscal rule, depositing 0.5 per cent of annual oil revenues into the fund, although we cannot verify this. There is no publicly available information on the structure of the fund's assets. Despite being an upper middle-income country—although the economy has shrunk every year since oil prices slumped in 2014—some three-quarters of the population are in poverty.²⁰ As a condition of its 2019 IMF programme, the Fund insisted that Equatorial Guinea join the Extractive Industries Transparency Initiative (EITI), but its application has been rejected as it does not yet meet the criteria (its first attempt was well over a decade ago). Transparency International ranks Equatorial Guinea at 174th out of 179 in its 2020 Corruptions Perceptions Index.²¹ Politics is very much a family affair in Equatorial Guinea; President Teodoro Obiang's son, Gabriel Mbega Obiang, is Minister of Mines and Hydrocarbons and his second son, Nguema Obiang, is vice president. In July 2021, France's highest court upheld the conviction of Nguema Obiang for embezzlement and laundering of public funds, after a decade of litigation. France, the US, and Switzerland currently hold US\$237 million in recovered assets—comparable in scale to the country's SWF (US\$165-413 million)—or roughly US\$200,000 for every citizen (and there are almost certainly yet more assets to be recovered).²² In sum, the country's Future Generations fund is very much a fund for the president, his family, and their associates.

The Libyan Investment Authority (LIA), created by the Qaddafi regime, is second from bottom on the PIIIE scorecard for SWFs (with a score of 23/100). The fund is currently frozen, pending resolution of the country's ongoing conflict. The LIA's lack of capacity to understand the risk involved in the investments sold to it by its international fund managers was exposed when it lost US\$1.2 billion on complex derivatives products.²³ In court, the LIA alleged that Goldman Sachs made US\$200 million in fees on the deal. The LIA lost its case, the judge ruling that it should have taken the necessary steps to understand the nature of the investments and the degree of risk.²⁴ The LIA illustrates the dangers of inexperience in new SWFs, together with the potential for fund managers to influence its decisions through questionable means.²⁵

This challenge has been compounded by the financial globalization of the last 30 years, resulting in a myriad of complex financial instrument (derivatives especially). In addition, the returns on the lowest-risk assets (the sovereign debt of the advanced economies) have fallen over two decades, notably after central bank responses to the global financial crisis of 2007–08 and the COVID-19

¹⁹ 'FSDEA Head Dismissed'. Economist Intelligence Unit <http://country.eiu.com/article.aspx?articleid=1706303754> (12 January 2018). Isabel dos Santos, the former president's eldest daughter, was also sacked from her role as head of the management board of the national oil company, Sonangol.

²⁰ <https://data.worldbank.org/country/GQ>. See also Goldman (2011).

²¹ <https://www.transparency.org/en/cpi/2020/index>

²² Human Rights Watch 'France: Equatorial Guinea Vice President's Conviction Upheld'. (28 July 2021) <https://www.hrw.org/news/2021/07/28/france-equatorial-guinea-vice-presidents-conviction-upheld>.

²³ See: Matthew Campbell and Kit Chellel 'Hot Mess: How Goldman Sachs Lost US\$1.2 billion of Libya's Money'. *Bloomberg Businessweek* (29 September 2016).

²⁴ The LIA also sued other banks.

²⁵ See Gillies (2019).

pandemic. As a result, investors have had to ‘reach for yield’ by increasing their allocations towards riskier, potentially higher return, assets (equities, private equity etc.). This is an issue for all investors, but pension funds and the largest SWFs—those from the Gulf states—have more experience and understanding of risk/reward than smaller and newer SWFs.

Second, SWFs are vulnerable to mismanagement and corruption. Fund managers are often appointed behind closed doors, and lobbying by prospective fund managers can step over the line into bribery. Transparency in the composition of the fund’s investments, its management structure, and disclosure of any investments or decisions linked to politically connected persons (PEPs) are vital. A scorecard of transparency across SWFs has been available since 2007, developed by Edwin Truman of the Petersen Institute for International Economics (Truman 2008). The first scorecard influenced the creation of the 2008 Santiago Principles for the governance, accountability, and transparency of SWFs by an international working group of SWFs and the creation of the International Forum of Sovereign Wealth Funds (IFSWF) (Das et al. 2010: 137-50; IGW 2018).²⁶ The latest scorecard (with data for 2019) covers 64 SWFs across the globe (Maire et al. 2021). Norway is top with a value set at 100, while the highest-ranking African country is Nigeria (a score of 83, and the only African country above the SWF scoreboard average), followed by Angola (77: but only after extensive losses leading to its reform), and Botswana (62) (see Table 2).

Table 2: Results of the 2019 SWF scoreboard (African countries)

Country	Fund name	World Ranking	Score
Nigeria	Nigeria Sovereign Investment Authority*	15	83
Angola	Fundo Soberano de Angola*	20	77
Botswana	Pula Fund*	42	62
Rwanda	Agaciro Development Fund*	44	58
Senegal	Fonds Souverain d’Investissements Stratégiques*	48	53
Ghana	Ghana Petroleum Funds	53	47
Morocco	Ithmar Capital*	54	47
Algeria	Revenue Regulation Fund	61	26
Libya	Libyan Investment Authority *	63	23
Equatorial Guinea	Fund for Future Generations	64	11
Global Average (64 funds)			66

Note: *Member of IFSWF.

Source: Maire et al. (2021).

In sum, SWFs can be another example of what Pritchett (2013) terms ‘isomorphic mimicry’. That is, entities that look like functioning institutions operating in the public interest but in reality serving private purposes. Three examples—from Angola, Equatorial Guinea, and Libya—illustrate the three governance challenges (see Box 1).

4 An assessment: are SWFs a good way to use public savings in African countries?

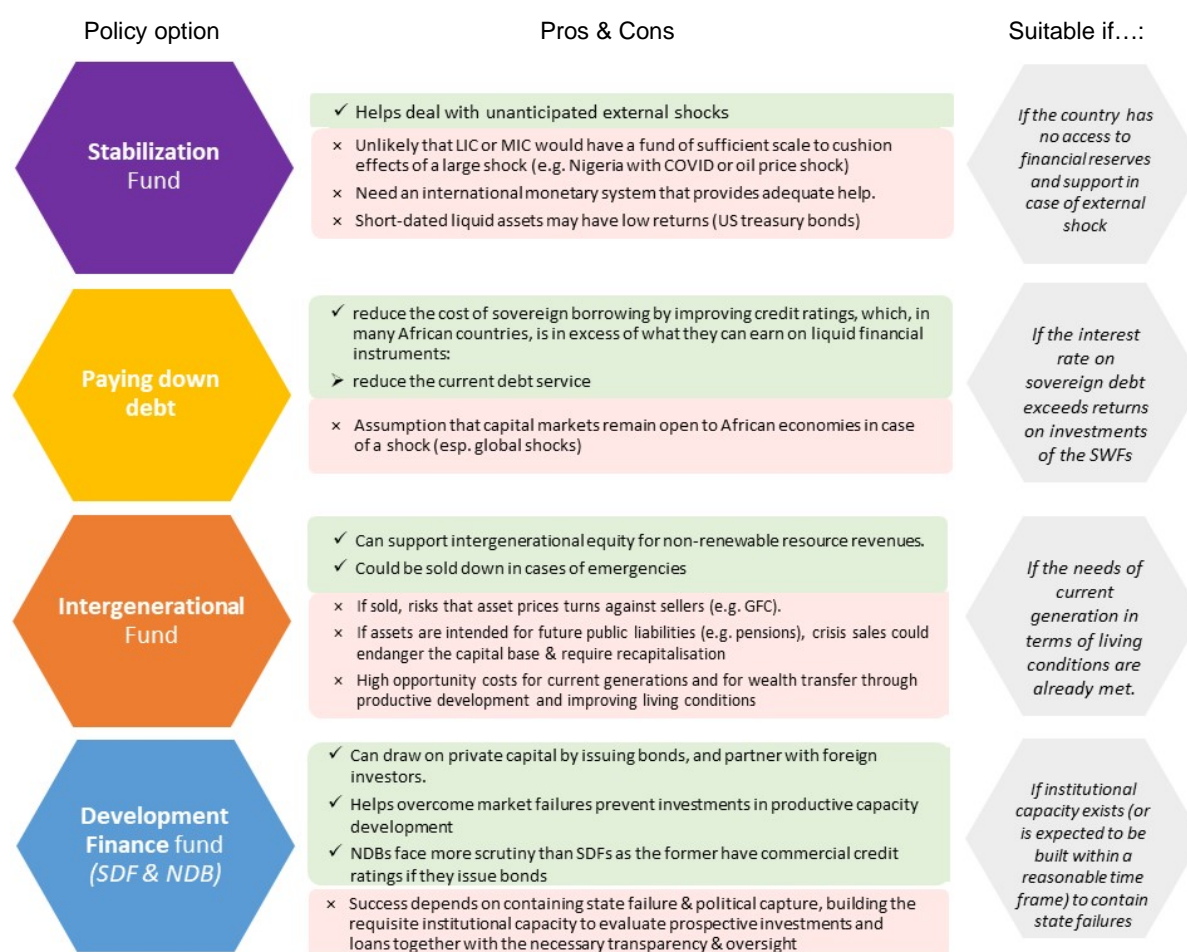
The picture that emerges in section 3 is that SWFs have stalled in Africa, and their capital base has been in decline. Nevertheless, intergenerational SWFs are still on the policy agenda of O&G

²⁶ See: Stone and Truman (2016).

economies (notably in Mozambique where an SWF is under consideration) and the minerals boom, consequent on the material needs of the Net zero transition, may yet also see them on the policy agenda of mining economies.

In this section we evaluate whether it is in fact desirable for African countries to build SWFs. We first discuss stabilization funds and, relatedly, paying off public debt.²⁷ We then discuss intergenerational SWFs, before finally turning to development finance institutions, such as SDFs, and relatedly NDBs, for which there is a much stronger case. Pros and cons exist for each resource revenue investment option, and whether a type of fund is more suitable than another hinges on specific contextual factors (see Figure 5).

Figure 5: Pros and cons of different resource revenue management options



Source: authors' construction.

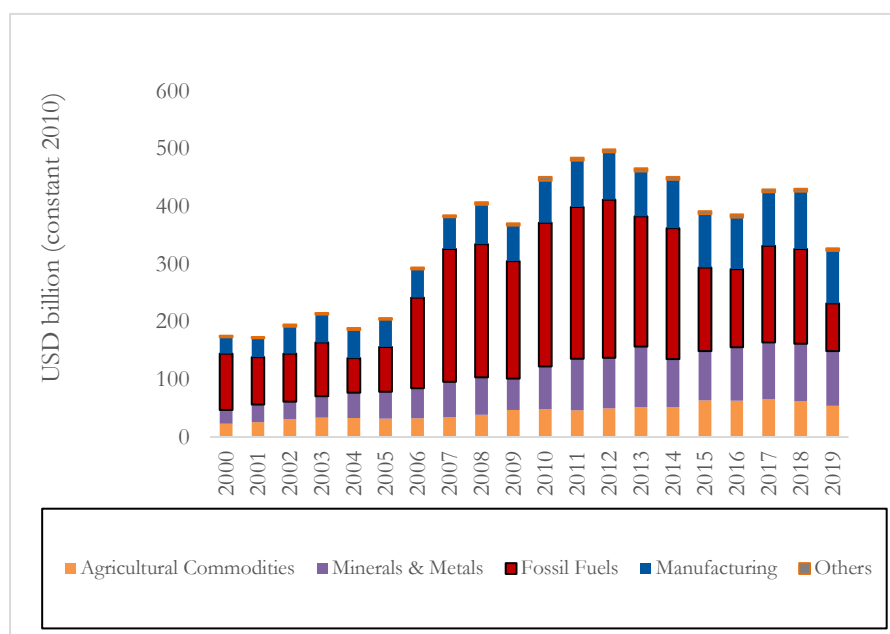
We also assess how the climate crisis affects the best use of public savings on the continent. Africa's high commodity-dependence (whether agriculture, fossil fuels or mining) makes the region exceptionally vulnerable to adverse effects of climate stress as well as global decarbonization (ACPC 2013; Anzolin and Lebdioui 2021; UNECA 2017). Agriculture-dependent economies in Africa are expected to be highly vulnerable to climate change, given the impact of temperature

²⁷ We return to the question of what size it should be in our conclusion by discussing self-insurance versus collective insurance in the context of a reformed international monetary system.

fluctuations and extreme weather conditions on agricultural productivity (ACPC 2013; UNECA 2017).

Meanwhile, fossil fuels represent around 40 per cent of African exports (see Figure 6), with countries such as Algeria, Angola, Chad, Nigeria and Sudan being highly dependent on them as a revenue source (Addison and Roe 2018; IRENA and AfDB 2022). In the context of a low-carbon future, fossil-fuel-dependent countries will eventually face the risk of stranded assets, in addition to the already serious effects of price volatility for internationally traded commodities (Addison 2018: 460–82). Together, these could lead to considerable losses in income and government revenue. In addition to ending energy poverty, these countries will also need to undergo an energy transition to build sustainable, productive economies as demand for fossil fuels falls (IRENA and AfDB 2022). Against this backdrop, it is crucial to improve our understanding of the relative benefits of capitalizing an SWF, SDF or a NDB to promote a climate-resilient transformation of Africa’s economies.

Figure 6: Evolution of exports by sector across Africa



Source: authors’ elaboration using UN Comtrade data.

4.1 Fiscal stabilization funds

It is often said that stabilization funds are intended to deal with *unanticipated* fiscal shocks, but this raises the question of what can be reasonably anticipated—and built into the programming of public expenditures—and what cannot. The COVID-19 pandemic illustrates the point. In 2020, the oil economies were hit hard by a collapse in oil demand (and to a lesser degree by a fall in gas demand) that was unprecedented in its scale and suddenness. In April 2020, Brent crude oil (an international oil price benchmark) fell to just US\$9.12 a barrel, its lowest price in decades; it then recovered somewhat and its average in 2020 was around US\$42 as compared to US\$64 in 2019.²⁸ In sum, in 2020 Brent was around two-thirds of its 2019 level with, moreover, an unprecedented amount of price volatility. It is safe to say that none of this was anticipated as the year 2019 ended.

²⁸ Source: <https://www.macrotrends.net/2480/brent-crude-oil-prices-10-year-daily-chart>. Another price benchmark, West Texas Intermediate (WTI), went *negative* on 20 April 2020.

The reason, of course, was a global pandemic on a scale not seen since the 1918 influenza outbreak.²⁹ The lesson from the pandemic is that it is very desirable to have an SWF orientated to stabilization, but it is highly unlikely that any LIC or LMIC will have a fund of sufficient scale to protect completely against a shock of such magnitude. While such exceptionally large shocks are historically relatively infrequent ('100-year events'), their future frequency and severity could well increase, notably as the climate warms.

Developing countries need an international monetary system that provides comprehensive and fast help. This has been a recurrent theme for decades and was highlighted by discussions at the start of the COVID-19 pandemic around the provision of special drawing rights (SDRs)—an international reserve asset issued by the IMF—and whether the increase, desirable as it was, really matched the scale of the emergency (see Hope 2021). Reforming the current international monetary system will reduce the necessity for self-insurance to cope with the fiscal impact of shocks, and free up resources to finance education, health and infrastructure. However, in the absence of a more equitable and responsive multilateral system—and progress on reform has been glacial—developing countries must increase the size of their stabilization funds and contain their borrowing.³⁰

Nigeria shows what happens when there is limited scope for fiscal stabilization. Before the pandemic, the Federal Government of Nigeria (FGN) constructed its budget for 2020 assuming an oil price of US\$57 per barrel.³¹ In the July 2021 budget, the budget oil price was reduced to US\$28. With oil providing up to 70 per cent of FGN's total revenues on average, and insufficient progress in building a broader tax base, the FGN was very constrained in its ability to respond to the pandemic through a package of public health measures together with economic and social support.³² In the event, to meet its expenditures, the FGN reduced fuel subsidies, increased its foreign and domestic borrowing, utilized IMF support, and drew on the NSIA stabilization fund. The Central Bank also monetized part of the deficit (contributing to a jump in inflation in 2020). Even so, the FGN's fiscal support package amounted to only 0.3 per cent of GDP well below the sub-Saharan Africa (SSA) average of 1.5–2 per cent over 2020 (IMF 2021a: 7). Given NSIA's small size, its contribution to funding the support package was tiny: it provided only US\$150 million—to try and help sustain essential services by sub-national governments—out of a total fiscal stimulus of US\$1.3 billion, itself well below the SSA average and indeed well below the LIC average (IMF 2021a).

In sum, the size of Nigeria's fiscal buffer is too small to contribute much to mitigating the impact of oil and gas price volatility and the government would be well-advised to increase it. Yet it is doubtful whether Nigeria could ever accumulate a fund of a size to really offset shocks on the scale of the COVID-19 pandemic. Only the countries with the very largest revenues relative to their population can come close to self-insurance.³³

Angola was also in a highly vulnerable position when the oil price collapsed in 2020. Angola's FSDEA has an intergenerational and development remit, and no stabilization function—although assets appear to have been sold, or will be sold, amounting to some US\$0.9 billion (out of a fund

²⁹ Addison and Ghoshray (2020).

³⁰ Zalk (2021).

³¹ This section draws upon IMF (2021a).

³² On the macroeconomics of public health and economic and social support (H-ESS) in the context of the COVID-19 pandemic; see Addison et al. (2020).

³³ Nigeria's resource rents per capita are about 40 times lower than Norway's (Lebdioui 2021).

of around US\$5 billion).³⁴ The government undertook a fiscal adjustment over 2020-21, and expects to achieve a primary surplus of 2.2 per cent of GDP in 2021 compared to a fiscal deficit of 1.9 per cent of GDP in 2020, and to save the higher oil revenues, resulting from the partial recovery in the oil price from late 2020 onward, with much of the saving going towards reducing debt (IMF 2021b: 4, 6). While this fiscal adjustment has kept Angola on track with its IMF programme, prevented a further deterioration in its credit rating, and allowed some growth in health spending, Angola's scope for spending more on public health as well as economic and social support during the pandemic is limited as the oil boom years did not see considerable saving into a fiscal stabilization fund. Indeed, significant oil revenue was misappropriated before it ever entered the government's accounts due to mismanagement and corruption in the national oil company, Sonangol. The governance of FSDEA has been problematic since its creation in 2012 (see Box 1).

4.2 Reducing sovereign debt

If public savings are large—consequent upon a resource boom for instance—then one option is, at some margin, to reduce outstanding sovereign debt rather than build sovereign funds. This section briefly considers the merits of this option.

Although a fiscal stabilization fund is desirable, the fund, as we argued above must keep the bulk of its assets in short-dated liquid financial instruments which have low returns. US Treasuries are by far the most popular. The long-term average yield on two-year US treasury bills was around 3 per cent in mid-2021, but during the pandemic it was less than 0.2 per cent (the result of the unprecedented quantitative easing by the US Federal Reserve).³⁵

Countries are borrowing at rates well in excess of what they can earn on the liquid financial instruments that make up much of a stabilization fund. Africa's debt picture is cloudy. Many countries are behind on their debt reporting. Some 40 per cent of LICs have not published any sovereign debt data for more than two years, according to the World Bank (Estevão 2022). At present the yield for buyers of Africa's sovereign Eurobonds is in the 6–10 per cent range. Many loans are contracted outside of the Eurobond market, including resource-backed loans which are mostly off-budget and not reported in country debt statistics. Such loans provide repayment out of commodity earnings, mostly oil, with the revenues directly paid into an escrow account from which the loan is serviced. Much of this debt is owed to China, while large commodity trading companies also provide resource-backed loans. Such loans can work well for borrowers in boom times, but when prices slump earnings may be insufficient to service the debt and savings funds are then used to repay the creditors instead of maintaining essential spending.³⁶

What of an intergenerational fund, which invests in assets with longer duration, and higher expected returns? We have no information on the average return on an African intergenerational SWF, but Norway's sovereign fund—which is the best in class—generated 8.41 per cent gross annually over 1998–2021.³⁷ An African SWF would need yields much higher than Norway's to start closing the gap with the cost of the region's sovereign borrowing.³⁸ And this would require

³⁴ IMF (2021b: Table 7).

³⁵ https://ycharts.com/indicators/2_year_treasury_rate

³⁶ Moreover, national oil companies are often highly indebted, and the state is often the implicit (rather than explicit) loan guarantor as the national oil company, being responsible for a major export earner, is 'too big to fail'.

³⁷ <https://www.nbim.no/en/the-fund/returns/>

³⁸ For comparison, Norway can borrow for around 1.5% (a 10-year bond).

an African SWF to take on considerably more investment risk on a much smaller capital base than Norway's US\$1.3 trillion fund, which enjoys a well-diversified portfolio. Moreover, the management of Africa's SWFs is outsourced to international investment managers, whose costs must be set against the gross return. Norway's central bank manages the country's SWF 'in house', and the funds costs are about a quarter of its SWF peers. In sum, it is unlikely that most African intergenerational funds will have yields greater than the cost of sovereign borrowing.

An intergenerational fund can, as a last resort, be sold down but runs the risk that asset prices will have in the meantime turned against sellers. This was not the case in the COVID-19 pandemic—with the exception of commercial property (which has now partially recovered). Indeed, equities in major markets were at all-time highs by the start of 2022, consequent upon quantitative easing. It was, however, the case for equities during the GFC when major stock market indices fell by 30–50 per cent in its worst phase. If the assets of the intergenerational fund are intended to fund future public liabilities (e.g., pensions) then crisis sales could endanger the capital base, and require the funds eventual recapitalization to ensure that the liabilities are fully funded.

In short, given the large gap between borrowing and savings rates, together with the risks associated with resource-backed borrowing, one can ask: why not use any public savings to reduce the stock of sovereign debt instead of saving into an SWF?³⁹ This will: (i) reduce the claim of current debt service on the budget, releasing funds for spending; (ii) improve the country's credit rating, allowing it to borrow in future on more favourable terms; and (iii) provide more scope to borrow in the event of a shock, given a lower pre-shock stock of debt. It also signals policy credibility to private investors and helps strengthen the currency by reducing the prospect of capital flight.

This line of argument, however, does assume that capital markets remain open to LIC and MIC borrowers if a shock strikes. If the shock is country-specific (e.g., an oilwell accident that temporarily reduces export earnings) then this will be the case. If, however, the shock is global or regional, there is the danger of financial contagion and a sudden 'stop' in lending, irrespective of the borrower's fundamentals. This was a real danger as the scale of the COVID-19 pandemic became apparent in early 2020 (but was avoided as the Fed and other central banks undertook quantitative easing). It occurred also in the GFC of 2008–09 with the shock originating in capital markets themselves (leading eventually to central bank responses), and it featured in the Asian Financial Crisis of 1997–98 (when financial contagion spread across much of the region and then onward to Latin America).

Risk-averse policy-makers will therefore still want to save, even if the country's borrowing costs exceeds the yields on its SWFs. And countries with very large resource booms will still want to use their SWFs to avoid the Dutch Disease effects of absorbing all of the earnings immediately into the economy.⁴⁰

If policy-makers do decide to pay down debt, by how much should they do so? One rule-of-thumb is that if a fiscal rule is in place, then debt should be repaid after the requirements of the fiscal rule are fulfilled. This was the Chilean strategy in the lead up to the GFC; earnings from copper (Chile's

³⁹ This question has been regularly posed and discussed in the literature on SWFs. See for instance Bauer and Mihalyi (2018); Collier et al. (2010); and Van der Ploeg and Venables (2018: 179–99).

⁴⁰ When market conditions favour borrowers, a government could *increase* its borrowing to add to its stabilization fund; this lowers the cost of any subsequent macro-stabilization during times when market conditions are less favourable to borrowers—including, in extremis, sudden stops (see Kunzel et al. 2010: 148).

main export) were accumulated in its SWFs and public debt was substantially reduced, leaving Chile well placed to withstand the dip in copper prices as the GFC took hold.⁴¹

4.3 Intergenerational wealth transfer

Two questions arise regarding intergenerational SWFs. First, why would the present generation want to transfer wealth to the future? And secondly, if this is the aim, what is the best means?

Regarding the first question, citizens may want to transfer wealth to their future selves to fund a comfortable old age or to future generations to ensure their financial security. Altruism towards the not-yet-born may reflect an expectation that they will face worse economic circumstances and be poorer than today's generation (if it is hard to diversify the economy from depleting non-renewable resources or if climate change threatens future prosperity). SWFs are then a vehicle to build assets to cover pension liabilities or intergenerational wealth transfer (e.g., Australia's Future Fund, or Ghana's Heritage Fund).

When it comes to pensions, and the needs of the elderly, in SSA only 11.6 per cent of those aged 60 and above are in a contributory pension scheme, mostly in the MICs (the figure is less than 5 per cent in Africa's LICs).⁴² Most young Africans enter informal employment—accounting for 80 per cent of SSA's total employment—with negligible pension prospects, and therefore face poverty in old age.⁴³ That said, non-contributory pensions do mitigate old-age poverty, and the benefit is shared within extended families.⁴⁴ An intergenerational SWF to top-up the funding of a general public pension, or more targeted assistance to the elderly poor, could be popular among citizens.

Nevertheless, there is a case against an intergenerational SWF. We highlight three issues.

First, citizens with unmet basic needs may well prefer more spending on child nutrition, basic healthcare, education, and conditional cash-transfers (or a basic income entitlement) of benefit to everyone. A large cohort of Africans never reach adulthood, let alone old age. The infant mortality rate (IMR) for Africa is shocking: one out of every 13 children in SSA dies before their fifth birthday, and Africa accounts for 19 of the world's 20 countries with the highest IMR (including Angola, Chad and Equatorial Guinea with oil-funded SWFs and others, such as the DRC, Guinea and Sierra Leone, rich in metals and gemstones).⁴⁵ Figure 7 shows a selection of countries with SWFs and their IMRs: Nigeria stands out as a nation rich in resource revenues and poor in child survival. Children who survive their early years and go on to a well-nourished and well-educated childhood followed by a productive adulthood constitute society's most important intergenerational transfer of wealth.

While investing a portion of non-renewable resource wealth in *financial assets* acts as a mechanism for transferring wealth across the generations, future generations can indeed also be made richer by today's investments in *real assets*: human capital together with physical capital and infrastructure. Both financial and real assets add to future wealth at a compounding rate. However, real assets also benefit today's citizens through education and healthcare that builds human capital and enables better livelihoods. Maternal healthcare during pregnancy, childbirth and postnatal care,

⁴¹ On Chile, see: Parrado (2010) and Solimano and Calderón Guajardo (2018: 200–19).

⁴² Guven (2019: 1).

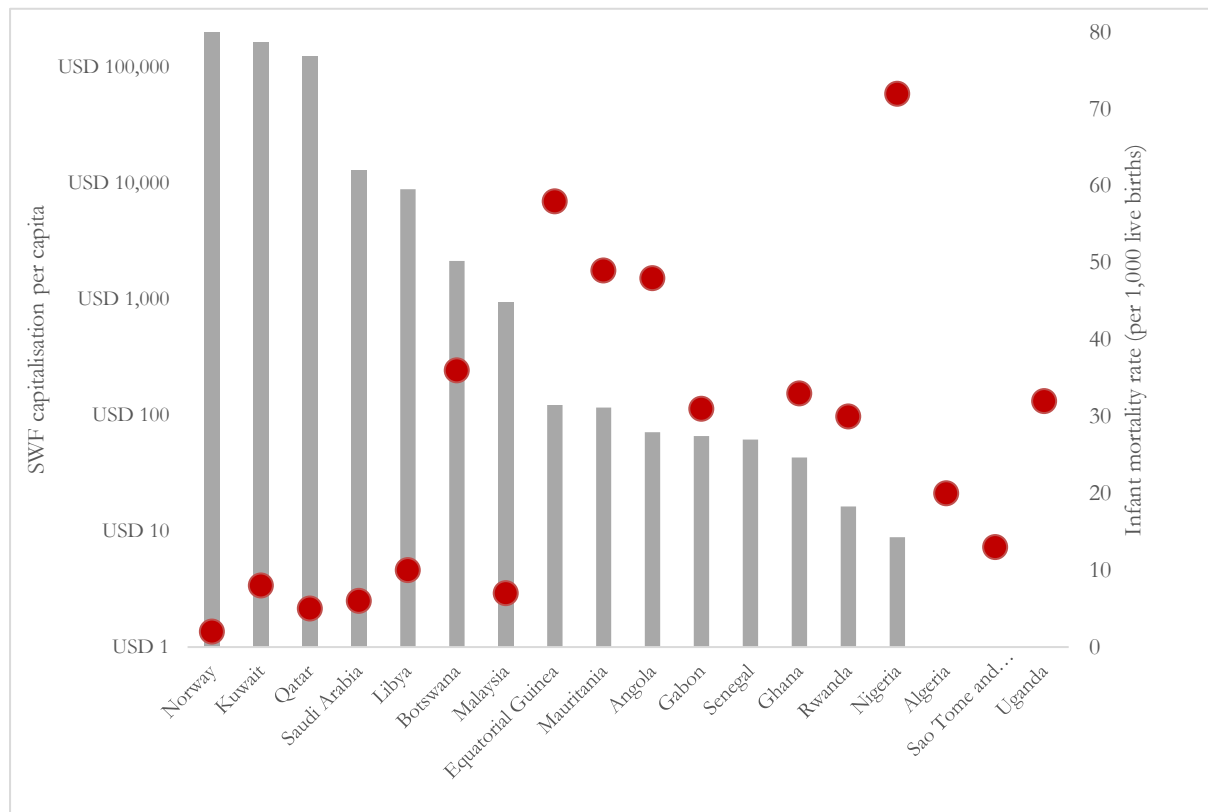
⁴³ On informality in Africa see: Danquah et al. (2019) and <https://www.wider.unu.edu/project/transforming-informal-work-and-livelihoods>

⁴⁴ Barrientos (2004).

⁴⁵ <https://data.unicef.org/topic/child-survival/under-five-mortality>

together with under-five healthcare and nutrition all increase child survival as well as overall life-expectancy (and quality of life). These benefits compound as healthy, well-educated and better-off parents invest more in their children, thereby reducing the intergenerational transmission of poverty.⁴⁶

Figure 7: Infant mortality rate in relation to SWFs capitalization per capita



Source: authors' construction using their own calculations and data from the World Development Indicators.

Returns are highest when asset stocks are low, the case for human capital in poorer counties. The social return to secondary and higher education is, for instance, above 10 per cent in developing countries (Psacharopoulos and Patrinos 2018: 13). And education's private and social returns are higher for women than men. Africa has the highest returns as it has the world's lowest average rates of schooling (Africa's labour force averages half the years of schooling of labour in advanced economies).⁴⁷ For Africa, the returns to basic education range from 7–10 per cent, and 25–30 per cent for upper-secondary and tertiary education (per year of education) (Barouni and Broecke 2014: 1593). The returns to education are greatest in economies undergoing structural transformation as rates of unemployment are lower, skills are in demand, and job creation occurs in more productive and better-paid sectors.

The financial return on African SWFs is far less than the returns on investing in good-quality education. Recall, that Norway's sovereign fund—which arguably offers an institutional model for Africa—returns 4.6 per cent (after costs). Even if an African SWF did match that—which is

⁴⁶ <https://www.chronicpoverty.org/>

⁴⁷ Psacharopoulos and Patrinos (2018: 13); Barouni and Broecke (2014).

unlikely given the sheer size of Norway’s fund together with its low management costs—education’s returns would still be far greater.

Second, it is also far easier for citizens, civil society, the media, and legislatures to monitor investments in human capital than in complex financial instruments. Many tools are now available to track expenditures through the education and health systems and to monitor local service-delivery and its quality. Citizens can more easily assess whether their children are getting a good education than whether their country’s SWF is yielding the best risk-adjusted returns.

Third, the prospects for all intergenerational SWFs must be evaluated in the context of climate change which, if it runs out of control, will reduce future global prosperity. All financial assets are at risk if global temperatures go beyond 1.5°C above pre-industrial levels, with accelerating damage at 2.0°C+ scenarios. Estimates are inevitably speculative, but using the concept of expected climate VaR (value at risk), Dietz et al. (2016: 3) calculate the loss at US\$2.5 trillion (of a global value of non-bank financial assets of US\$143.3 trillion in 2013).⁴⁸ As the polar ice sheets melt away, financial assets will sink along with the world economy. If the 1.5°C Paris climate agreement goal is met, then financial markets can remain functional. Yet it is a paradox that oil-economies might save more in order to mitigate the damage to their agriculture and natural capital from a world which continues to burn fossil-fuels.

4.4 Sovereign development funds and national development banks

The rationale: fixing market failures and promote structural transformation

While an intergenerational SWF may find some opportunities in domestic assets, many will not have high enough risk-adjusted returns to meet the fund’s mandate. And there is a danger that politicians might push the SWF to invest in poorly prepared projects, thereby undermining its accumulation of capital. It is better to create or strengthen development finance institutions (DFIs) with a mandate to invest in private sector projects with good prospects.⁴⁹ They are potentially useful policy instruments for fixing market failures, incubating markets, and promoting structural transformation, as illustrated in the successful industrialization experiences of Germany, Italy, South Korea, Japan, and Malaysia.⁵⁰

Market failures in credit markets are pervasive, occurring on both the supply and demand sides, and the literature is comprehensive.⁵¹ Small and poor countries often have little in the way of *formal* provision of equity and debt finance, despite the existence of investment opportunities with potentially large expected returns. Instead, narrow commercial banking and informal lending dominates the financial landscapes of LICs. Despite their larger financial systems, MICs also exhibit market failures in funding private investments, especially in long-term funding and for SMEs. Equity finance is generally very thin in LICs: stock markets are illiquid and institutional investors (e.g., domestic private pension funds) are small. International investors are wary of currency risk, and find it costly to gather information on investment prospects in the smaller LICs.

⁴⁸ For the emissions path at the time of the estimates undertaken by Dietz et al. (2016). Note that this is an *expected* loss, and the loss in the 99th tail of the distribution is US\$24.2 trillion (17% of the global stock of financial assets in 2013).

⁴⁹ Marbuah et al. (2022).

⁵⁰ See Cohen (1967); Chang (1994); Wade (1990); Lebdioui (2020); Naqvi et al. (2018).

⁵¹ See especially Stiglitz (1989, 1994: 19–34).

They favour the much larger and better regulated markets of the MICs (which also have more attractive macro-fundamentals given their more diversified economies).

Additionally, some investments have *social* returns well in excess of their private returns.⁵² Social returns include positive externalities for enterprise development as whole (e.g., the production of a vital input such as improved seeds), the provision of social goods (e.g., affordable housing) and the provision of health inputs (e.g., vaccines). Positive environmental externalities include carbon offsetting, carbon capture, usage and storage (CCUS), emissions reduction technologies, and clean energy and storage. Left to their own devices, private financial markets will under-supply finance to such enterprises, not least because they often have large upfront capital costs (e.g., in research and development as well as production facilities) before any income is generated. Infrastructure finance is especially deficient, with a financing gap of around 50–60 per cent of Africa’s annual investment needs.⁵³ Such investments are critical to raising Africa’s low private-sector investment rates and to overcoming the region’s lack of economic diversification. Indeed, Africa is home to eight of the world’s fifteen least economically diversified countries (Usman and Landry 2021). Undiversified economies are especially vulnerable to sudden external shocks, as the pandemic-induced disruption of tourism and oil-dependent economies has illustrated; this weakens their long-term economic progress.⁵⁴

In sum, market failures leave many potential projects on the shelf. The policy challenge is to identify the very best of them, by rigorous project and financial analysis. This requires significant institutional capacity development.

To address some of these various market failures, different types of DFIs exist, such as SDFs and NDBs. SDFs and NDBs have broadly similar objectives, namely to invest in domestic enterprises with growth potential as well as those building and running domestic infrastructure. Both can be capitalized using public savings, and then leveraged through borrowing in domestic and international capital markets. In principle, an SDF makes *equity* investments in companies, while NDBs provide *loans*. In practice, some SDFs also make loans and some NDBs take equity positions, and the borderline between the two types of institution can be grey one.⁵⁵ Both SDFs and NDBs can be established if there is enough managerial and regulatory capacity, but for a small LIC this will be a stretch. It is better to start with one really effective and well-regulated institution rather than two weak ones.

In addition to public savings, NDBs and SDFs can draw on private capitals by issuing bonds (thereby helping to deepen domestic financial markets) and partnering with foreign investors (Quist 2022). Attracting foreign capital is the primary motive for creating an SDF when a country runs persistent current account deficits (rather than the surpluses that characterize the wealthiest oil economies).⁵⁶ Rwanda and Senegal are examples. SDFs are then a way of using public savings to attract foreign savings and investment expertise, including capital from the largest global SWFs; those of the Gulf nations but also China’s Investment Corporation (CIC) and Singapore’s Temasek

⁵² We distinguish between private and social rates of return, as from the perspective of the public funds the calculation of costs and benefits must include environmental and social impacts, both positive and negative.

⁵³ Africa’s infrastructure investment needs are estimated to be US\$130–170 billion per year, with an annual financing gap of US\$67–107 billion (AfDB 2018: 82). This is based on 2016 commitments.

⁵⁴ See: Collier et al. (2010); Chang and Lebdioui (2020).

⁵⁵ For this reason, some discussions classify NDBs as a form of sovereign fund. The Bangladesh Infrastructure Development Fund (BIDF) is labelled an SWF in policy discussions but makes only loans.

⁵⁶ Examples include India’s National Investment and Infrastructure Fund (NIIF) and the Turkey Wealth Fund (TWF).

which are especially active international investors. SDFs also facilitate privatization when the government's shares in state companies are placed into the fund, with the aim of attracting private investment. They are then in effect state holding companies. Egypt's SDF is used in this way.⁵⁷

NDBs and SDFs can potentially act as counter-cyclical instruments. NDBs can expand lending to enterprises during downturns and ease back during upswings (if policy-makers fear over-heating). Latin America's NDBs have been used successfully in this way (Brei and Schclarek 2018).⁵⁸ NDBs can also introduce special and innovative credit lines to speed up loan decisions and disbursements during recessions. This is especially useful during a financial crisis when distressed private banks cut their lending. Notably, NDBs lent far more than private lenders in the 2008–09 GFC. A World Bank survey of NDBs found that globally the increase in lending by the NDBs during the GFC was more than three times that of private lenders (de Luna-Martínez and Vicente 2012: 8). An SDF can also take an equity stake in distressed enterprises to facilitate their restructuring and recovery.

NDBs have historically played a key role in the provision of long-term financing for industrialization, agricultural upgrading, and structural transformation more broadly in the context of late development (Gerschenkron 1962; Amsden 2001; Di John 2020). Given their role in mobilizing public and private investment for structural transformation and export diversification, there is therefore a strong case for using public savings to add capital to Africa's NDBs (and to its regional multilateral development bank, the African Development Bank (AfDB)).⁵⁹ There are 80 members of the Association of African Development Finance Institutions and upwards of 100 DFIs on the continent, depending on the definition used, varying from the biggest—the AfDB and African Export and Import Bank (Afreximbank) which have regional mandates and report to many governments—to national banks (mostly focused on infrastructure) in Algeria Morocco, Nigeria, South Africa and Egypt, and sector-focused banks such as the Agricultural Development Bank of Ghana.⁶⁰ A handful dominate the region's capital assets and Africa's NDBs collectively account for only one percent of development bank assets worldwide (Fitch Ratings 2022). They are much smaller in relation to national economies than their peers elsewhere (Fitch Ratings 2022: 4).

Much of the available evidence on NDBs comes from Latin America and Asia. The evidence base for Africa is quite small. For a sample of African NDBs, Ndikumana et al. (2021) find that on average African NDBs do undertake more medium- and long-term financing than private banks in line with their mandates, and that they also have lower non-performing loan ratios and a higher return on assets. However, there is a long tail of underperformers, especially among the small and undercapitalized ones. Attridge et al. (2021) find that while two-thirds of development banks in their sample are profitable—and compare favourably to European development finance institutions—one-third are not, and half the sample have high non-performing loan ratios. Ethiopia, Rwanda and Uganda are undertaking reform of their development banks, and injecting capital and expertise, but others remain stagnant.

In sum, NDBs have had something of renaissance since 2010, driven by the mandates of the SDGs and the Paris climate agreement. Yet their potential has not been fully exploited.

⁵⁷ <https://www.ifswf.org/members/sovereign-fund-egypt>

⁵⁸ NDBs have grown to be the principal long-term lenders and loan guarantors and the principal source of financial services in housing, infrastructure and agriculture in MICs (de Luna-Martínez and Vicente 2012). Latin America has been especially successful in its use of NDBs (Griffith-Jones and Ocampo 2018; Griffith-Jones et al. 2018).

⁵⁹ Santiso (2008); Gelb et al. (2014); Zalk (2021).

⁶⁰ <https://adfi-ci.org/>. Attridge et al. (2021) count 107. See also Bradlow and Humphrey (2016).

Containing state failure and building institutional capacity

The case for government to provide direct development finance—whether through a SDF, an NDB, or a specialized lender to agriculture or infrastructure—rests on the presence of *market failures* in the financial markets of developing countries. But whether they will succeed depends on containing *state failure*—i.e., building the requisite institutional capacity to evaluate prospective investments and loans together with the necessary transparency and oversight to achieve effective governance of development finance institutions and, not least, within governments.⁶¹

Although real assets have superior expected returns over financial assets for developing countries, investments in the former require much more intensive institution-building. This involves multiple interventions across the sectors, requiring close cooperation between many layers of government, both national and local, acting to implement the strategy set out in the country's national plan or its industrial policy. Co-ordination is essential with ministries of planning and sector ministries such as industry, together with the private sector itself and its representative organizations (e.g., industrial associations) but can it be achieved? The devil is in the detail.

Cautious technocrats will favour saving when faced with politicians prone to wild spending commitments and when they doubt the institutional capacities of sector ministries to deliver real impact from additional funds. Pessimists can cite many examples of resource booms squandered through unproductive spending and NDBs and SDFs are vulnerable to political capture, resulting in unsound investments or simply theft. The scandal of Malaysia's 1MDB, an SDF which prime minister Najib Razak and others used to steal at least US\$4.5 billion of public money, offers a salutatory warning for Africa.

Legislatures must exercise strong oversight of both NDBs and SDFs given the fiscal risks arising from insolvency, and full transparency facilitates monitoring by civil society and independent media. NDBs face more scrutiny than SDFs as the former have commercial credit ratings if they issue bonds (Quist 2022). Fundamentally, transparency and oversight improves the ability of NDBs and SDFs to leverage additional funds from capital markets and to encourage multilateral lenders to co-finance projects.

Notwithstanding the difficulties of institution-building, it is easy to be over-pessimistic. Using a portion of the resource-boom to build better capacities in project identification and management and in the structures of oversight and transparency should be money well spent. Valuable efforts to improve project evaluation capacity exists at the national and regional level, such as the African Association of Development Finance Institutions (AADFI) standards.

5 Conclusions

SWFs are often seen by politicians as a symbol of national success and a signal to the world that the country will manage its resource revenues responsibly. But do SWFs actually contribute to national development goals? What has been Africa's experience to date? These are the questions addressed in our paper, and we conclude with five observations.

The first is the need for a stabilization fund. This is well illustrated by the COVID-19 pandemic when the oil economies were badly caught out as prices slumped in 2020. Algeria, Angola, Ghana,

⁶¹ Bell (2017).

Nigeria came under intense fiscal pressure. Many (perhaps all) governments in Africa ceased public saving and drew down their funds to finance the unprecedented demands of the pandemic. Whether they rebuild their stabilization funds, and resume saving into their intergenerational funds, depends on the trajectory of commodity export-earnings—and the associated public revenue from oil, gas and mining—together with the demands of debt-service (an increasing fiscal burden as the US Federal Reserve unwinds its unprecedented quantitative easing).

Second, for the longer term, the revenues and therefore the public savings of fossil fuel exporters face the headwinds of the global-energy transition and the eventual stranding of their resources. Their non-resource revenue bases need to widen and reform. Africa's tax administration has improved over the last decade and is now in some respects better on average than those in South Asia or Latin America.⁶² Yet many of Africa's oil-rich countries are lagging behind—their tax-GDP ratios are below the average—and they need to widen their non-resource tax base: it would be better to spend a good portion of their revenues on improving tax institutions rather than putting it into an SWF. Countries with the metals now in growing demand for a net zero world may eventually establish SWFs if ample resource revenues threaten macroeconomic stability. Yet many, notably Zambia, also carry large debt burdens that need urgent resolution and pre-empt public saving. Moreover, many have serious governance issues: the DRC 2018 Mining Code discusses capitalizing a futures fund using the country's mineral wealth but the politics of the DRC could too easily lead to a repetition of the corruption that has bedevilled funds in Angola and Equatorial Guinea.

Third, our view is that intergenerational SWFs should only be considered after a stabilization fund has been replenished and debt reduced (when too high). And these decisions must be integrated with public spending decisions on education, healthcare, social protection, and development infrastructure in the annual budget and five-year plan. It is hard to prioritise intergenerational saving if the government is not budgeting enough for vital sector ministries. Service delivery in education and health has improved after intensive effort, with donor support, over the past three decades, and many now have the institutional capacities to absorb more funding and channel it effectively into front-line services with high social returns.

Fourth, there is merit in starting (or recapitalizing existing) development funds—either SDFs or NDBs—but these cannot substitute for public investment through the capital budget. And SDFs and NDBs need full transparency, strong governance, and the necessary analytical capacity to ensure that their investments do actually contribute to structural transformation. At its heart, successful economic and social development is a process of *relaxing constraints*. In project evaluation, a constraint is the availability and skill of economists, sector planners, and engineers in the public and private sectors. Above all, there is the need to build an institutional framework of planning not only for development finance institutions but also to local and central government administration whose task is to bring the private and public sector together to deliver on priority objectives.

Fifth, it is hard for governments to pursue a consistent strategy with regard to public savings. Political expediency can too often win out, especially around election time, when the temptations of spending beckon most acutely. But there is also the vulnerability of African economies to economic shocks—the result of undiversified commodity-dependent economies—to be considered. Fiscal rules are invariably introduced with the best of intentions, but they have a very high rate of failure when revenues take a sharp down-turn. SWFs that began as intergenerational funds turn into de facto stabilization funds when hard-pressed governments need to maintain

⁶² Moore (2020).

spending, but the asset composition of the former is not suitable for the task of the latter. And it is hard to build a stabilization fund of sufficient size when the opportunity cost in terms of development spending foregone is so high. Developing countries need much greater concessional and grant funding to deal with economic shocks—as demonstrated yet again by the COVID-19 pandemic and now the global economic fall-out from the Ukraine–Russia war.

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Annex: information on sovereign wealth funds in Africa

Table A1: Mapping out sovereign wealth funds in Africa

SWF name	Country	Year of creation	Last known capitalization (US\$ billion)	Capitalization as of 2013 (US\$ billion)	Objectives	Commodity
Revenue Regulation Fund	Algeria	2000	0	77.2 (32.5 in 2015)	Stabilization	Petroleum
Fundo Soberano de Angola	Angola	2012	2.27	56.7	TBC	Petroleum
Pula Fund	Botswana	1994	4.928	6.9	Stabilization	Diamonds
Sovereign Wealth Fund of Djibouti	Djibouti					Non-commodity
Equatorial Guinea fund for future generations	Equat. Guinea	2004	0.166	5	Intergenerational equity	Petroleum
Strategic Investment Fund of Gabon - FGIS (former Fund for future Generations)	Gabon	1998 /2012	0.143	0.998 or 1.81	Intergenerational equity > strategic investments	Petroleum
Ghana Heritage fund	Ghana	2011	0.521	0.014 (0.381 in 2018)	Intergenerational equity	Petroleum, gold and other minerals
Ghana Stabilization Fund	Ghana	2011	0.456	0.055	Stabilization	Petroleum, gold and other minerals
Ghana Infrastructure Investment Fund	Ghana	1998/2012			Investment (domestic)	
Libyan Investment Authority	Libya	2006	60	70	TBC	Petroleum
National Fund for Hydrocarbon reserves	Mauritania	2006	0.526	0.003		Petroleum
Namibia Minerals Development Fund	Namibia	1995	n/a (disappeared)	0		Minerals
Nigeria Sovereign Investment Authority	Nigeria	2008/2012	1.782	8		Petroleum
Agaciro Development fund	Rwanda	2012	0.206			
Senegal FONSIS	Senegal	2012	1	1		
Petroleum Investment Fund Uganda	Uganda	2015	0 (0.121 in 2019)	0.046 (in 2016)		Petroleum
Oil Revenue Management Plan	Chad	2006		0.034		Petroleum

Oil Revenue Stabilization account	Sudan	2012			Stabilization	Petroleum
National Oil Account	Sao Tome & Principe	2004	0.001 (late 2015)	0.009	Stabilization	Petroleum

Source: authors' compilation based on multiple sources, including the SWF Institute, Truman (2008); Cieřlik (2014), and national government documents