CHAPTER 4

Sovereign Wealth Fund Investment Performance, Strategic Asset Allocation, and Funding Withdrawal Rules

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4.1 Introduction

In the past decade, we have observed shifts in the strategic asset allocations (SAAs) of many sovereign wealth funds (SWFs), manifested by a rather significant reduction in the share of public-market assets (publicly traded equity and fixed income) at the expense of an expansion of riskier private-market assets (alternatives, infrastructure, private equity, real estate, and so on). This trend has mainly been the result of SWFs' search for higher returns. The investment value chain has further evolved from the traditional asset owner and manager relationships to a business model of closer partnerships. This business model has gradually been adopted by traditional, mostly conservative SWFs, which have preferred a passive-benchmark

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replication strategy over high-risk active asset management. In particular, newer SWFs' governance arrangements tend to be more receptive to higher risk and adopt in-house, active asset management approaches.

The change in many SWFs' risk appetite has primarily been triggered by a heightened observance of their fiduciary duty to build intergenerational equity—that is, a mandatory obligation to provide positive returns over a specified future period. Most SWF governance structures require careful consideration when adopting an enhanced role in the investment value chain in private markets by playing a more active general-partnership role rather than a limited-partnership role. Also, the search for higher returns leads to a more comprehensive governance map for SWFs, suggesting a more flexible operational framework than a traditional rule-based asset management framework. In turn, these developments imply that SWFs will likely become more active participants in the management of corporate businesses around the world by being directly involved rather than being silent or distant investors.

Although the number and size of established SWFs have increased dramatically over the past ten years, surpassing 90 in number at the end of 2015, with combined assets exceeding $7 trillion,[1] the adequacy of their operational independence is still in question. In particular, 14 SWFs have been set up in Africa, with a total of $114 billion in assets under management (ADB 2013); 11 in hydrocarbon (oil and gas)-exporting Arab countries; 12 in northern hemisphere countries, including Colombia and Panama; and 18 in Asian countries, including Thailand and Vietnam. This increase in the establishment of SWFs enhances the need for legitimacy (including the adoption of appropriate legal structures) and for assurances of sufficiently independent operational rules and relationships.

Our analysis suggests that many SWFs still lack coordinated, sustainable, and independent operational structures, as well as fiscal frameworks that support a comprehensive investment value chain that could enhance their return performance. Specifically, various perspectives have recently been offered for setting up "hybrid" SWFs, with multiple goals and a range of policy purposes, such as to attract strategic long-term investors for large-scale infrastructure or developmental projects, draw more foreign direct investment (FDI), enhance economic competitiveness, attain portfolio diversification, serve financial stability considerations, all while avoiding integrated budget implications. However, these designs often contradict some fundamental prerequisites and basic principles in establishing an SWF, including the establishment of clear objectives (such as stabilization, intergenerational savings, or explicit

liability coverage (pensions) and/or development purposes, adoption of a well-defined governance structure, and implementation of transparent investment and risk management frameworks). These shortcomings in design do not only open the door to misappropriations of initial policy purposes and management ineffectiveness in the respective SWFs but also often complicate the execution of fiscal rules.

In general, our findings indicate that SWFs with a comprehensive governance structure that is in line with the SWF owner country's macrofiscal policy framework are better able to determine their dynamic asset allocations and experience investment performances closer to their strategic policy/benchmark target compositions. Suitable SWF funding and withdrawal rules are found to be critical components of an effective SWF governance structure. Also, a strong institutional development and risk management framework is typically required to ensure an appropriate timing and frequency of SAA changes, especially in periods of high or intensifying market volatility.

The chapter is organized as follows: Sect. 4.2 presents some stylized facts relating to changes in SWF SAAs over the period from 2008 to 2015, Sect. 4.3 outlines some determinants of SWF investment performance, Sect. 4.4 discusses some broad implications of the investment value change on SWFs' strategic asset allocation and investment performance, and Sect. 4.5 provides some concluding remarks on current challenges in SWF governance structures and their effects on investment performance.

4.2 Shifts in SWF Strategic Asset Allocations During 2010–15

As long-horizon investors, many SWFs are positioned to invest in ways that many short- and medium-horizon investors cannot. As such, certain investments and risk premia that are efficiently priced from the perspective of other long-term investors may also present value opportunities for SWFs. In principle, active ownership should not undermine the selection of the investment universe and, thus, the performance of the respective SWFs. However, SWFs should be resilient and able to overcome international and local business cycle challenges, including broad macroeconomic volatilities.

Figure 4.1 illustrates the percentage changes in allocation to asset classes for select SWFs between end-2015 (or latest available data) and end-2010 (or June 2011). Figures 4.2 and 4.3, respectively, contain the

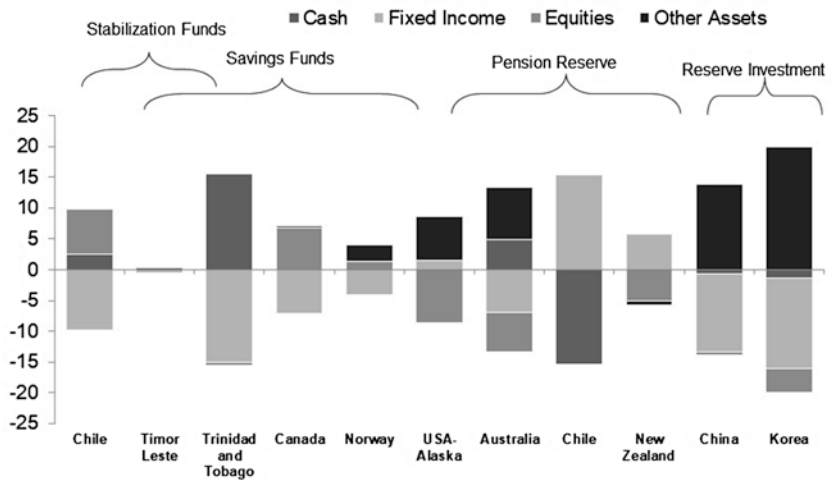

Fig. 4.1 Selected SWF SAA changes, 2015 versus 2010. The units of the Y-axis are %

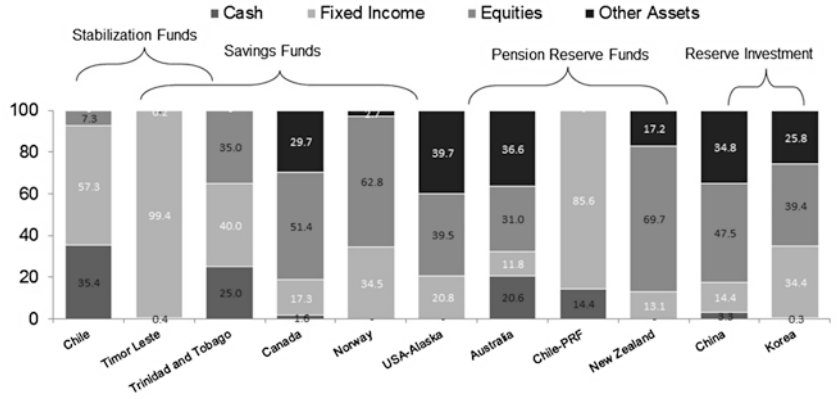

Fig. 4.2 Selected SWF SAAs, 2015. The units of the Y-axis are %

allocation by asset class at the end and beginning of the sample. Although the evidence is limited, the observed changes indicate, in general, that pension reserve and reserve investment funds have experienced more changes in their SAAs compared to stabilization funds.

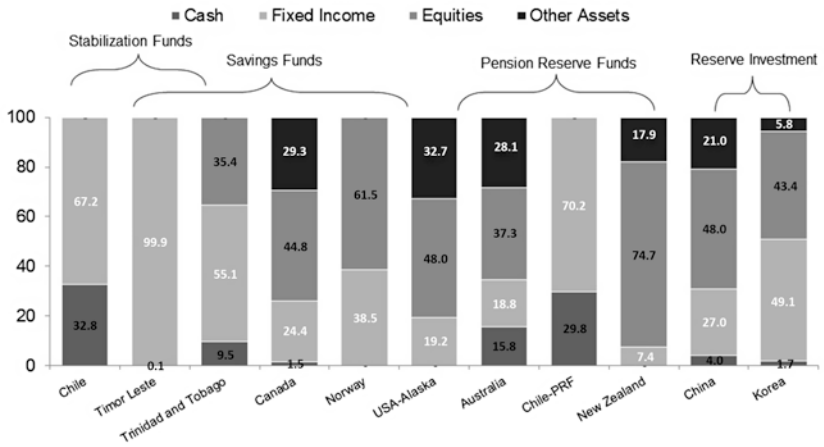

Fig. 4.3 Selected SWF SAAs, 2010. The units of the Y-axis are %

Although there is no uniform approach in selecting an SAA for an SWF, it is worth noting that multiple policy purposes or lack of clarity in objectives have been found to adversely affect the selection process of assets within the permissible investment universe. This usually leads to the choice of suboptimal and inconsistent instruments, which undermine investment performance. Also, the performance of SWFs tends to respond in accordance with the selection and implementation of SAAs (Hammer et al. 2008; Bodie and Briere 2013).

Further, an increasing number of newly established non-natural-resources-based strategic funds, mainly from indebted developing countries, now accounting for about half of all SWFs, are found to be vulnerable to respective country budget rules. This broad consideration of lack of independence or close macrofiscal integration should further be analyzed from the sovereign asset and liability management framework. Das et al. (2009) provide a comprehensive set of international good practices in setting up and managing SWFs, utilizing broad recommendations and guidelines outlined in the Santiago Principles.[2]

As indicated in Figs. 4.4 and 4.5, SWFs' asset allocations, and consequently their investment performance, depend mainly on their type. Also, their asset allocation trends indicate that they are largely leaning more toward private markets, which includes higher-yielding private equity and alternative investment vehicles, as part of their performance enhancement

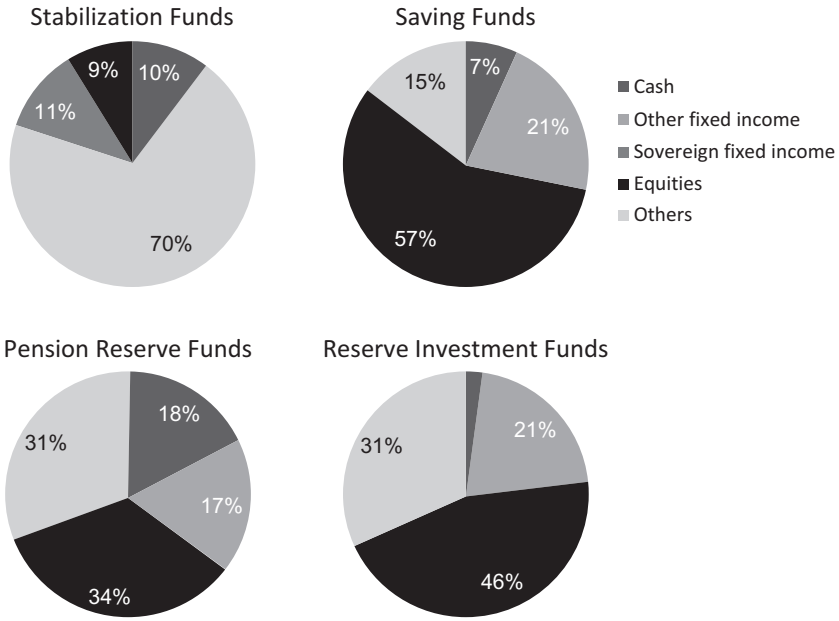

Fig. 4.4 SAAs by type of SWF, end-2015 (or latest available data)

strategies. However, a higher proportion invested in long-horizon assets entails bearing the risk of significant within-horizon drawdowns. It is thus critical for SWFs not only to measure and manage these risks, but also to communicate them clearly to stakeholders in advance. The increased need to better align with fellow institutional investors calls for closer partnerships in the changing investment-value-chain landscape.

Although SAAs depend on the SWF type, changes in SAAs have been observed across all types. SWFs, as long-horizon investors, have an advantage in that they require less liquidity than other investors. To the extent they invest in illiquid asset classes, SWFs should expect to earn a premium. Based on their unique liquidity profile, it is essential for SWFs to estimate the illiquidity premium they should demand to determine the appropriate exposure to illiquid investments. At any particular time, the risk premia of certain asset classes may represent better value opportunities than others for long-horizon investors.

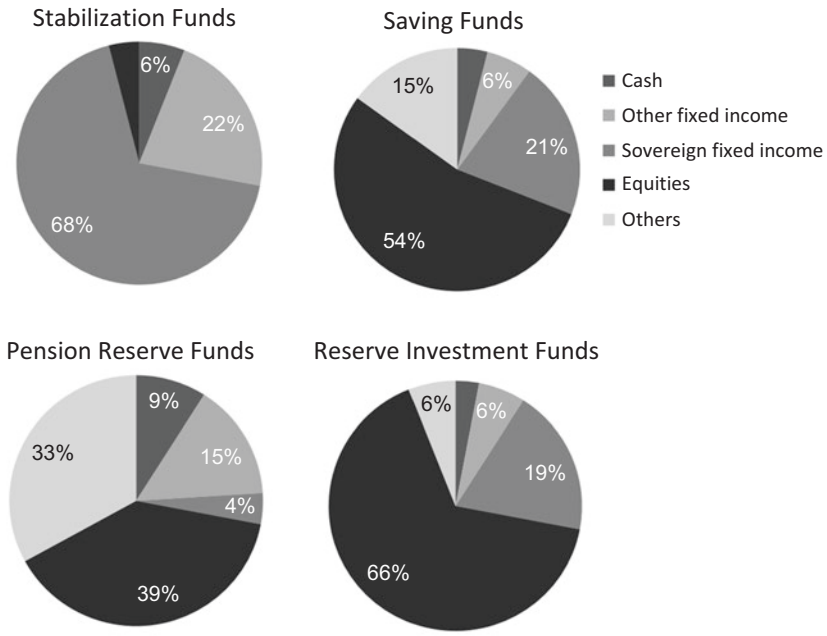

Fig. 4.5 SAAs by type of SWF, end-2010 (or June 2011)

4.3 SWF Investment Performance over the Last Decade

Arguably, the performance of an SWF should be compared against its objectives, often based on the persistent pursuit of its long-term investment beliefs. Although the overall trajectory is mostly determined by global financial market volatility, persistent long-term benchmarking along with an ability to operate independently of government fiscal fluctuations are also associated with high rates of investment returns. As indicated in Fig. 4.6 and Table 4.1, representative savings and pension reserve funds performed significantly better than other types of SWFs.

Well-defined SWF funding and withdrawal rules are critical for investment performance. In principle, these rules should depend on the individual SWF's objectives and the owner country's legal framework and general macroeconomic setting. While many established SWFs have fairly

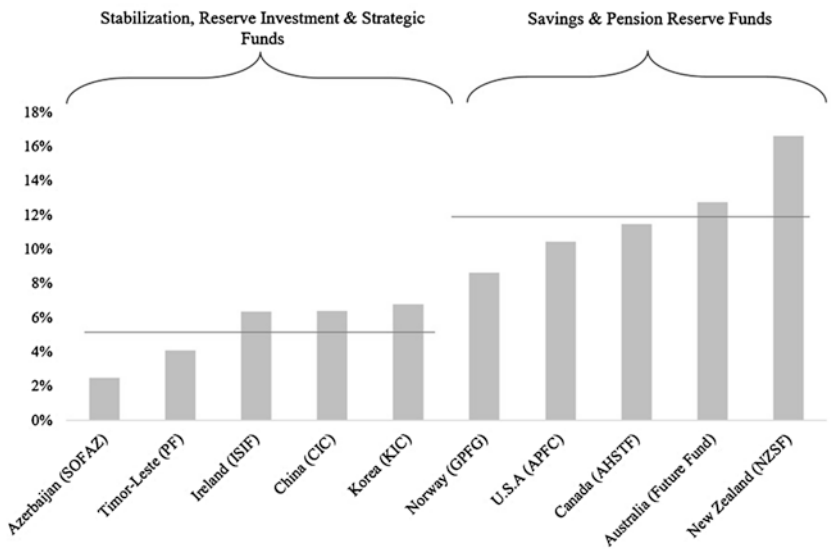

Fig. 4.6 Annualized (five-year) returns of selected SWF portfolios

transparent rules, our analysis shows that some newly-established SWFs need to strengthen their respective funding and withdrawal rules. Not implementing such rules may leave funds vulnerable to various macrofiscal shocks as well as common principal-agent problems between the government and the asset manager, where each would like to act in its own interests. Common examples include sudden fiscal shocks (i.e., to fulfill liquidity shortages), volatility in global commodity prices (i.e., sudden shortness in budget revenues—a gap-filler role), uneven financial market conditions (i.e., owing to government borrowing, cost increases, and/or currency short selling), and domestic macroeconomic pressures (i.e., exchange rate movements, Dutch-disease effects), which could adversely affect the realization of initial SWF objectives and policy mandates, as well as the intended accumulation of assets and investment performance) (Fig. 4.7).

Table 4.1 Historical returns of selected SWFs (percent)

Country (fund)	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*
Australia FF (Future Fund)		6.0	6.2	1.5	−4.2	10.6	12.8	2.1	15.4	14.3	8.4
Canada AHSTF (Alberta Heritage Savings Trust Fund)	15.2	12.4	−0.7	−18.1	17.8	10.4	10.4	8.2	16.0	12.5	4.7
Chile ESSF (Economic and Social Stabilization Fund)			8.9	7.6	2.3	1.8	3.5	1.0	−1.3	−1.7	−1.78
China CIC (China Investment Corporation)				−2.1	11.7	11.7	−4.3	10.6	9.3	5.5	−2.96
Ireland ISIF (Ireland Strategic Investment Fund)	19.6	12.4	3.3	−30.4	20.6	11.7	1.6	7.8	6.4	4.6	
Korea KIC (Korea Investment Corporation)			7.40	−17.5	17.6	8.2	−4.0	11.8	9.1	4.0	−3.0
Malaysia Khazannah				−35.7	43.9	33.4	−7.0	24.3	19.1	9.0	3.20
New Zealand SF (Superannuation Fund)	21.0	13.7	13.4	−12.9	−5.5	13.0	1.4	20.9	24.3	19.4	14.6
Norway GPFG (Government Pension Fund Global)	11.1	7.9	4.3	−23.3	25.6	9.6	−2.5	13.4	16.0	7.6	2.74
Singapore Temasek				7.0	−30.0	42.7	4.6	1.5	9.0	2.0	19
U.S.A. APFC (Alaska Permanent Fund Corporation)	10.16	10.82	17.06	−3.58	−18.0	11.8	20.6	0.02	10.9	15.5	4.91

Source: SWF annual reports, financial press information, and authors' calculations

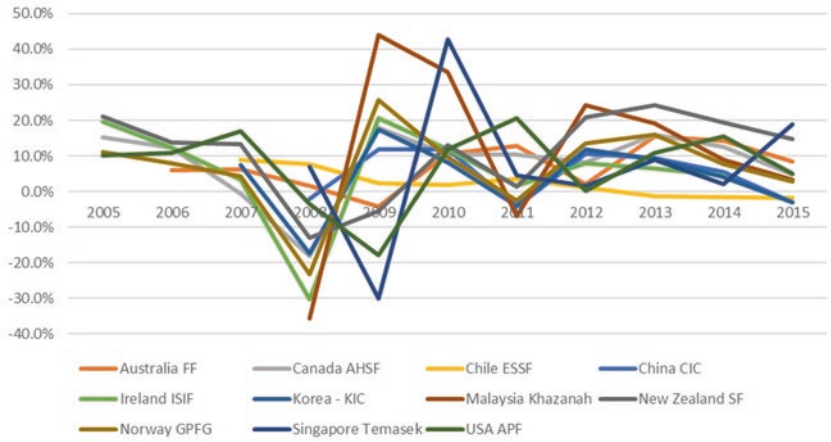

Fig. 4.7 Historical returns of selected SWFs

Especially for intergenerational savings SWFs, better prospects for investment performance can be established through well-defined governance, operational transparency, and independence in investment decisions. Our findings indicate that only a handful of sovereign funds have adopted comprehensive funding and withdrawal frameworks in line with their policy purposes, thus illustrating their high degree of vulnerability to potential government interference and consequent risks to their investment management sustainability (see Fig. 4.8).

An absence of these rules tends to hurt SWFs' long-term investment performance, which, along with maintaining their integrity and credibility within the country's fiscal regime, is typically their objective. Sustainable intergenerational wealth building requires primarily a commitment to a long-term investment horizon, which needs to take into consideration the country's macrofinancial conditions and the establishment of well-rounded funding and withdrawal frameworks that are well aligned with the country's fiscal management (Ang et al. 2009; Rozanov 2007).

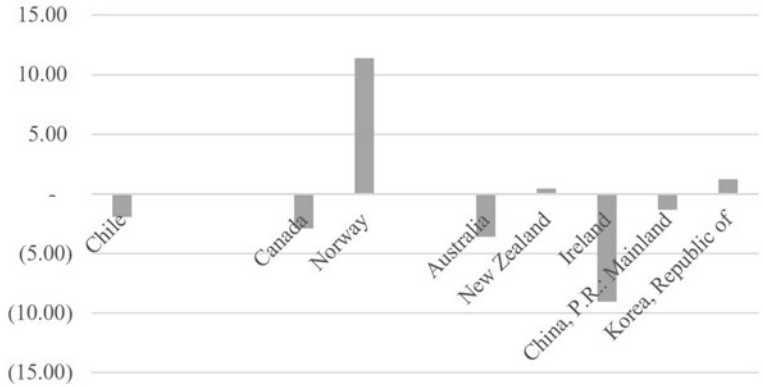

Fig. 4.8 Selected SWF owner countries' budget balances (annualized, five years)

4.4 SWF Investment Value Chain and Implications for SAAs and Investment Performance

4.4.1 Policy Objectives and Funding and Withdrawal Frameworks

The policy objectives of SWFs typically determine their funding and withdrawal frameworks and rules, which are often defined in their relevant legislations. Mixed policy objectives may undermine the clarity of incentives and, as a result, support inconsistent macroeconomic policies. In general, funding and withdrawal rules are connected to the main types of SWFs in the following ways:

- Stabilization funds usually have funding and withdrawal frameworks that are closely linked to the state of the fiscal policy through clearly predetermined rules.
- Reserve investment funds, often following the global diversification and high-return mandates of central bank reserves, have funding and withdrawal frameworks that are quite independent of the owner country's fiscal and/or other macroeconomic policies.
- Savings and pension funds have funding and withdrawal frameworks that reflect their respective objectives. In the case of pension funds with increasing uncertainty of future liabilities, the fund's manage-

ment becomes more complicated. In particular, a target obligation of higher returns in order to meet a predetermined pension fund value frequently leads to higher risk-taking than for stabilization funds.

- Development and strategic funds' funding and withdrawal frameworks tend to be simpler than those for other SWF types, as in many cases, they involve one-off state funding for specific strategic developmental purposes.

As can be seen in Table 4.2, hybrid-type funds have become increasingly popular. According to the IFSWF (2014), many SWFs have declared two or more mandates and policy purposes. Although this flexibility enhances the owner country's ability to maneuver in certain global and local economic conditions, it could also become a source of economic instability if funding and withdrawal rules are not strictly adhered to or are easily modified.

4.4.2 Enhancing the Investment Value Chain Through Appropriate Funding and Withdrawal Rules

A principal-agent problem may arise and the investment value chain may be undermined when SWFs do not have publicly disclosed mandates and operational independence of funding and withdrawal rules. Lack of well-defined and transparent rules could compromise SWFs' objectives by allowing governments' ad hoc policies to overrule SWFs' institutional mandate to act independently. Such institutional conflicts of interest may lead to moral-hazard issues. Sovereign funds may not act in the best interest of the country regarding value maximization of public assets, but may rather act in the service of other government aspirations, such as parking SWF assets for short periods of time and using them for the government's political and social agendas. To this end, the complexity of global financial markets and asymmetry of information may be used by different governments as excuses to make biased policy decisions on SWF SAAs so as to accommodate politically motivated SWF portfolio compositions. To avoid such challenges, governments need to institute operational independence of sovereign funds, with publicly disclosed fiscal, funding, and withdrawal rules. On this front, Chile (Fiscal Stability Law and Fiscal Rules) and Norway (Government Pension Fund Act) lead the way. Table 4.3 presents the fiscal rules of a selected group of countries with SWFs.

Table 4.2 Policy purpose and performance of SWFs

Sovereign wealth fund, inception year	*Stabilization*	*Reserve investment*	*Savings or pension*	*Development or strategic*	*Performance (average annual return since inception, percent)*
Angola FSDEA (Fondo Soberano de Angola), 2011		√		√	–
Australia FF (Future Fund), 2006			√		7.4
Azerbaijan SOFAZ (State Oil Fund of the Republic of Azerbaijan), 1999	√		√		2.42
Botswana PF (The Pula Fund), 1994		√			–
Canada AHSTF (Alberta Heritage Savings Trust Fund), 1976			√		7.0
Chile ESSF (Economic and Social Stabilization Fund), 2007	√				2.71
Chile PRF (Pension Reserve Fund), 2006			√		3.4
China CIC (China Investment Corporation), 2007		√			4.58
Iran NDFI (National Development Fund of Iran), 2001		√	√	√	–
Ireland ISIF (Ireland Strategic Investment Fund), 2014				√	10.8
Italy FSI (Fondo Strategico Italiano SpA), 2011				√	–
Kazakhstan S-K (Joint-Stock Company Samruk-Kazyna), 2008				√	–
Kazakhstan NIC (Joint-Stock Company National Investment Corporation of National Bank of Kazakhstan), 2012	√		√		–
Korea KIC (Korea Investment Corporation), 2005		√			3.23
Kuwait KIA (Kuwait Investment Authority), 1953		√			5
Libya LIA (Libyan Investment Authority), 2006		√			–
Malaysia Khazanah (Khazanah Nasional Berhad), 1993				√	14.1
Mexico FMPED (Fondo Mexicano del Petroleo para la Establizacion y el Desarrollo), 2008	√			√	–
Morocco FMDT (Fonds Marocain de Developpement Touristique), 2011				√	–

(*continued*)

Table 4.2 (continued)

Sovereign wealth fund, inception year	*Stabilization*	*Reserve investment*	*Savings or pension*	*Development or strategic*	*Performance (average annual return since inception, percent)*
New Zealand Superannuation Fund, 2001			√		10.1
Nigeria NSIA (Nigeria Sovereign Investment Authority), 2011		√		√	–
Norway GPFG (Government Pension Fund Global)[a], 1990			√		5.6
Oman SGRF (State General Reserve Fund), 1980		√			7.5
Palestine PIF (Palestine Investment Fund), 2003				√	–
Panama FAP (Fondo de Ahorro de Panama)[a], 2012	√		√		–
Qatar QIA (Qatar Investment Authority), 2005		√			–
Russia RDIF (Russian Direct Investment Fund), 2011				√	–
Rwanda AGACIRO (Agaciro Development Fund), 2012				√	–
Singapore GIC (Government of Singapore Investment Corporation Private Limited), 1981		√			4.9
Singapore Temasek (Temasek Holdings Private Limited)[a], 1974				√	–
Timor-Leste PF (Petroleum Fund), 2005	√	√			2.3
Trinidad and Tobago HSF (The Heritage and Stabilization Fund), 2007	√		√		1.7
UAE ADIA (Abu Dhabi Investment Authority), 1976			√		7.5
UAE Mubadala (Abu Dhabi Mubadala Development Company Private Joint-Stock Company)[a], 2002			√		–
USA APFC (Alaska Permanent Fund Corporation), 1976			√		10.6

Source: IFSWF, SWF Institute, and authors' calculations

Note: Policy purpose and performance is broadly referenced in the self-assessment of member SWFs of the IFSWF, Surveys of 2013 and 2015

[a]SWFs are not members of the IFSWF

Table 4.3 Fiscal rules in selected countries with SWFs

Country	*Expenditure rule*	*Revenue rule*	*Budget balance rule*	*Debt rule*	*Total rules in effect*
Australia	1	1	1	1	4
Botswana	1				1
Canada	1	–	1	1	3
Chile			1		1
Ireland	–	–	1	1	2
Italy	–	–	1	1	2
Mexico	1	–	1	–	2
Mongolia	1	–	1	–	2
New Zealand	–	–	1	1	2
Norway	–	–	1	–	1
Panama	–	–	1	1	2
Russia	1	–	–	–	1
Singapore	1	–	1	–	2

Source: Budina et al. (2012)

Lack of disciplined fiscal policy and budget management during natural resource booms often results in Dutch-disease effects due to the possible undertaking of procyclical and inefficient public investments, as such spending often distorts the economy by generating capital flow imbalances, exchange rate disparity, overheating of public investment, and consequent overcrowding of productive private sector. Although SWF funding and withdrawal rules vary across countries due to different macroeconomic objectives, fiscal systems, and legal frameworks, it is widely accepted that SWFs should embody the following macrofinancial characteristics:

- Avoidance of procyclical behavior and promotion of countercyclical policy actions through careful design and definition of the rules.[3]
- Consistency with the respective country's macroeconomic policy agenda through assessment of the long-term macroeconomic and stability implications of the funding and withdrawal rules (for instance, SWFs should not interfere with the country's macroeconomic policy agenda, including inflation targeting).
- Provisions for proper accounting of the budget surplus and sovereign fund transfers.
- Operation and implementation of these rules should be done within a well-established SWF framework, guarded by special laws and decrees to (1) ensure a clear definition of SWF objectives,

appropriate governance structure, prudent investment and risk management frameworks, and adequate reporting systems; (2) protect its operational independence (through an independent board and executive team); and (3) properly identify the implementation steps, including selection of investment managers, global financial markets, and asset classes that will be invested in.

For commodity-based SWFs, funding and withdrawal rules should be designed to fit the type and policy mandate of the specific SWF. Common types of arrangements typically include designs that allow predetermined transfers to budget from stabilization funds in the event of commodity declines and accumulation of assets for both stabilization and savings funds in case of commodity price increases. Table 4.4 provides an overview of the main types of funding and withdrawal arrangements for stabilization, savings, reserve investment, pension reserve, development, and strategic SWFs.

To establish long-term, sustainable macroeconomic growth and a budget framework that avoids principal-agent problems, countries need to ensure the development and institutionalization of strong budget governance and sound rules of intergenerational wealth creation—that is, by adopting proper SWF funding and withdrawal rules. In this context, it is critical that SWFs improve their investment value chain by adopting strong governance and an institutional framework that enhances the optimal strategy for natural resources, with the following general characteristics:

1. Set up a transparent, accountable budget governance (government) and institutional (SWFs) framework through the adoption of a specific budget law (fiscal responsibility law) or specific regulation (fiscal rules) to ensure open and fair funding and withdrawal relationships.
2. Publicly disclose government guidelines. The purpose and set priorities of SWFs can help to define a transparent investment strategy that meets explicit liabilities and other responsibilities as well as avoid procyclical bias in budget expenditures. Thus, they help better preserve natural resource revenue for future generations with the highest potential of return possible.
3. Adopt market-responsive, cyclically adjusted funding and withdrawal rules with adequate calculation formulas to optimize the stability and enhance the credibility of government fiscal policy.

Table 4.4 Types of funding and withdrawal rules

Type of SWF	*Common type of funding*	*Common type of withdrawal*	*Examples*
Stabilization Fund Countercyclical in construct, designed to offset macroeconomic volatility for both budget and overall economy Conservative investment behavior with short- to medium-term horizon	Depends on budget surplus/deficit, in line with budget process and specific fiscal rule. Inflows come from: – Excess revenue Exceeding market price of an exported commodity from its reference price level	To finance budget deficit stemming from: – Shortfall of revenue – Special funding requirement Commodity price drop below "structured" price used to calculate budget expenditures	Chilean Fiscal Stability Fund
Savings Fund Intended to save proceeds for intergenerational purposes, addressing future explicit liabilities, market uncertainties and potential macrofinancial vulnerabilities	Mostly budget surplus (expected or unexpected) State enterprise revenue Current account surplus	Can be designed to allow the withdrawal of part or whole of the fund's returns, revenue or dividends to support the budget	• Australian Future Fund • Norwegian Government Pension Fund Global
Reserve Investment Funds Similar function to FX reserves Diversified portfolio, but preference for "safety, liquidity and return"; very limited use of derivatives or leverage may be allowed	Usually from excess official FX reserves Can be a special trust-account arrangement	During market turmoil or when official reserves deplete unexpectedly Can also be designed to withdraw the fund's returns, revenue or dividends	• Korea Investment Corporation
Pension Reserve Funds Seek to fulfill future explicit liabilities A long-term investment horizon while keeping a highly diversified portfolio	Mostly budget surplus When the market price of an exported commodity exceeds its structural price	To cover future pension obligations	• Chilean Pension Reserve Fund • New Zealand Superannuation Fund

(*continued*)

Table 4.4 (continued)

Type of SWF	*Common type of funding*	*Common type of withdrawal*	*Examples*
Development Funds Focus on financing local infrastructure investments; typically try to avoid Dutch disease, currency appreciation, and local asset boom	Budget or other forms of privatization proceeds Funding through, for example, co-investment, which is highly desirable	Within the government budget framework, consistent with local development priorities	• Fundo Soberano de Angola • Moroccan Tourism Development Fund • Nigeria Sovereign Investment Authority
Strategic Funds Specifically focused on strategic priority sectors and national interests Designed to leverage and to attract international investments, co-investments and similar partnership	Usually one-off type of government/public funding Continuous restructuring, as needed	Restricted withdrawal Potential benefits include the development of local strategic sectors, rather than future direct withdrawals from the SWF	• Fondo Strategico Italiano • Ireland Strategic Investment Fund • Russian Direct Investment Fund

Source: Authors

Although adopting hybrid policy objectives is common in some recently established SWFs, the following broader macroeconomic analytics should be taken into account for their optimum management, regardless of whether they concern stabilization, savings, development, or reserve investment funds:

- Macroeconomic uncertainties and stress test variations in response to market volatilities
- Different capital flows, FDI, exchange rate, and global interest rate variations
- Global commodity price trends and forecasts
- Countercyclical policy measures
- Developmental priorities and policy changes, such as expansionary fiscal or loose monetary policies
- Modifications in response to unforeseen economic events, seasonal adjustments, and/or changes in the owner country's medium-term budget projections and contingent liabilities

Our analysis of selected SWFs indicates that operational independence and adherence to Santiago Principles increase their accountability to both the owner country and external stakeholders. Also, institutional independence and efficient governance structures are found to determine to a large degree differences in SWF performance. This, in turn, depends on the clarity of the funding and withdrawal rules, as described in their legal frameworks ("organic" laws). Typically, SWFs are governed by their special legal frameworks, with different government bodies, such as the ministry of finance or a special board, exercising an ownership and/or supervisory role.

In line with their remarkable growth, SWFs' role in fiscal management has increased dramatically. Especially in economies dependent on natural resources, clear funding (asset accumulation) and withdrawal rules need to be developed in the early stages of SWF establishment as part of the owner countries' objectives for stable and countercyclical budget planning. In particular, SWF funding and withdrawal rules could be an integral part of well-defined fiscal rules that can positively affect sustainable budget planning and ensure sound macroeconomic policy. For example, in Kuwait, like in many other Arab countries with SWFs, a predetermined part of oil revenues is deposited in its SWF, the Kuwait Investment Authority. In Chile, funding accumulation (and withdrawal) in its SWFs, the Economic

and Social Stabilization Fund and the Pension Reserve Fund, is based on a reference copper price determined annually by the authorities. Norway's SWF, Government Pension Fund Global, receives the net central government receipts from petroleum activities and transfers to the budget the amounts needed to finance the non-oil deficit. Thus, the net allocation to its SWF reflects predominantly the budget's overall balance.

Funding and withdrawal rules should also be consistent with the owner country's debt sustainability and be decided in a sovereign asset and liability management (SALM) framework (Das et al. 2012). Such a determination would evidently depend on the adopted type of SWF arrangement and its objectives.

Some common types of SWF funding sources and withdrawal rules, along with their relations to the budget, are outlined below (Fig. 4.9).

4.4.3 A Stylized Framework of Macrofiscal Linkages and Funding and Withdrawal Rules

The permanent income hypothesis (PIH) can be used to provide an analytical framework to identify the extent of the needed SWF accumulation and its performance to help maintain an overall sustainable budget. The PIH shows that while a non-resource primary balance can be in deficit

Fig. 4.9 Typical funding sources and withdrawal motives

(which can incorporate an expenditure growth cap, restrictions on out-of-budget spending, and so on), the country can accumulate funds and maximize their returns for an overall fiscal balance (Baunsgaard et al. 2012):

$$\text{Fiscal balance} = R_{\text{resource}} + \left(R_{\text{non-resource}} - E\right) + \left(i^a A_{t-1} - i^d D_{t-1}\right)$$

Or, the fiscal balance is the sum of the resource revenue (R_{resource}), the non-resource primary balance ($R_{\text{non-resource}} - \text{E}$), and the net interest earned on the country's sovereign portfolio ($i^a A_{t-1} - i^d D_{t-1}$). That is, the overall fiscal balance is expressed as the change in a country's net financial assets ($\Delta(A - D)$).[4]

Further, to satisfy intertemporal budget constraints, the sustainable long-term budget balance (in present value terms) should be higher or equal to the inflation-adjusted return on net wealth (the difference between the return on wealth and debt, or just debt in non-resource-abundant countries) (Montiel 2009).

To avoid overcrowding of the private sector and ignition of Dutch-disease effects (declines in non-resource output), as well as consequent inflationary pressures and exchange rate instability, resource-induced primary surpluses should preferably be kept in a separate external account (creation of an SWF). The respective funding (or saving) rules should take into account the country's specific development priorities (growth targets), related monetary policies (inflation targets), and sustainable budget frameworks. For example, Norway's non-oil central budget deficit cap is set at the long-term real rate of return of its SWF (4 percent). Other SWFs' funding and withdrawal frameworks can be found in Table 4.4.

As fiscal credibility and long-term budget sustainability require adoption of transparent SWF funding and withdrawal rules and robust policy frameworks, many resource-abundant countries have considered the PIH rule, within a comprehensive framework that limits current spending (expenditure rule) and determines proper accumulation for future generations (revenue rule) (Baunsgaard et al. 2012). Recent country experiences with SWFs offer some stylized facts on budget rules that are closely related to appropriate SWF funding or accumulation frameworks and ensure counter-cyclicality (see Table 4.5).

As countercyclical fiscal-policy tools, the fiscal rules mentioned above have proven to be effective, when enacted, in setting fiscal discipline and credibility. In particular, resource-abundant developing countries that

Table 4.5 Typical fiscal rules and SWF funding and withdrawal frameworks

Fiscal frameworks	*Policy*	*Implications*
Expenditure Rule	Sets benchmark limits for public expenditures in various forms	Necessary to prevent excessive withdrawals from SWFs
Revenue Rule	Sets limits for budget allocation and SWF accumulation for future generations	Regulates funding and procyclical accumulation of SWFs
Budget Balance Rule	Structurally regulates the general budget balance and sets a budget deficit limit, which is directly linked to the SWF accumulation framework and aims to avoid fiscal boom and bust cycles (and Dutch-disease effects)	Connected to both SWF funding and withdrawal frameworks
Debt Rule	Regulates public debt, with set limits based on budget or macrofinancial indicators	Sometimes associated with SWF withdrawal frameworks through budget regulation

Source: Baunsgaard et al. (2012)

tend to experience procyclical fiscal policy could benefit by adopting such rules for clear SWF funding and withdrawal. In this connection, the PIH, along with a comprehensive fiscal sustainability structure, could help ensure long-term fiscal solvency and provide a basic framework for sustainable SWF management.

4.5 Concluding Remarks

There are several challenges in carrying out SAA optimization to enhance performance, including the decisions about admissible asset classes, selection of benchmarks, determination of risk-tolerance levels for different asset classes, performance measurements, application of accounting standards, accepted rating(s) for investment instruments, and related market predictions. SWFs' mandates, given adopted fiscal rules, restrict the expansion of their investment value chain as well as the flexibility of shifts in their active asset management framework that could lead to ensuring higher returns over time. The adoption of a comprehensive framework for timely portfolio rebalancing is another challenge in managing a diversified global portfolio. A risk-return adjusted portfolio rebalancing would depend on the individual SWF's characteristics, including its asset size and risk-tolerance level (Papaioannou and Rentsendorj 2014, 2015).

Differences in SWF performance could illustrate the possibility of enhancing overall returns with a lower risk level, through (for example) a more comprehensive governance framework that is in line with the respective country's macrofiscal rules. Such independence and flexibility directly determine dynamic asset allocations that allow funds to perform in line with their strategic policy/benchmark target compositions. To ensure the appropriate timing and frequency of asset weight changes, especially in response to intense market volatility, a strong institutional development and risk management framework is required. For SWFs, which are long term in nature, changes in asset allocation that increase the equity composition over time are expected to pay off in the long term, by, for instance, harvesting illiquidity premia in the market that often yield higher returns.

Over time, we have observed shifts in strategic asset allocation trends within SWFs. Stabilization funds largely concentrate in fixed income, while reserve investment, pension, and future-generation savings funds actively explore new asset classes, particularly in alternative asset classes such as private equity, real estate, and infrastructure, after the current global macrofinancial developments.

As SWFs are a heterogeneous group, their funding and withdrawal rules reflect individual performance priorities that necessitate different SAAs. Intertemporal budget constraints and the PIH could be used to argue that a sustainable long-term budget balance should be equal to or higher than the inflation-adjusted return on net wealth. In this framework, the SWFs' performance should also be higher than the owner country's debt payments in order to satisfy the fiscal balance. In particular, it should be required that SWF funding and withdrawal rules be integrated within the respective country's fiscal frameworks with a clear mandate, but with less flexibility, and therefore adopting robust, preset rules to help sustain a long-term, high SWF performance.

With the accession of SWFs to a main institutional investor class in global financial markets, their role in the stability of both local and global markets has increased significantly. In this context, the development of proper SWF funding and withdrawal rules that ensure operations at an arm's length from the government is essential for their efficient build-up and is particularly important for the long-term stability of the fiscal and financial systems in which they function, as well as for global financial stability.

Our analysis shows that several savings and superannuation funds that adopt much stricter governance structures and stronger regulatory frameworks, as well as support the adoption of more diversified and expanded

asset classes, perform generally better than stabilization, strategic, and other reserve investment funds. For example, the annualized returns of some SWFs, such as the New Zealand Superannuation Fund, the Australian Future Fund, and the Alaska Permanent Fund Corporation (which requires amendments to the Alaskan constitution, with substantial majority of house vote, to change existing funding and withdrawal frameworks) (APFC 2001) have generated returns well above 10 percent during the last five years.

Without publicly disclosed SWF funding and withdrawal rules, principal-agent problems and associated moral-hazard issues may arise that could undermine the integrity of the frameworks that they are part of. Inconsistent policy purposes, hybrid objectives, and a broad or flexible coverage in withdrawal and funding frameworks may undermine the SWFs' performance and operations. Specifically, natural-resource-based reserve investment and savings funds are far more at risk than the stabilization and pension reserve funds, with regard to certainty of funding and withdrawal rules that may affect the long-term efficiency (performance) of those respective types of funds. For example, the withdrawal mandates of the SWFs of Azerbaijan (SOFAZ) and Angola (FSDEA) are rather narrow and leave ultimate discretion to the president. This may adversely affect their long-term investment beliefs and increases the risk of an inappropriate SAA selection.

Furthermore, an increasing focus on enhancing the SWF owner country's strategic global positioning has been observed in recent years. For example, some pension reserve funds have started shifting their focus to supporting strategic investments. Notable examples include the Ireland National Pension Reserve Fund, which is changing its focus and is now reorganized as the Ireland Strategic Investment Fund. Italy's Cassa Depositi e Prestiti (CDP) decided to set up the Fondo Strategico Italiano to support Italy's private sector involvements globally. Such positioning enables strategic funds to focus on long-term strategic investments and ensures operational independence from the government that, from a theoretical SAA point of view, can assure a higher performance over longer periods (provided that private equities are a higher risk/return asset class than fixed-income or public equities). In this regard, operational independence of SWFs with transparent, publicly disclosed funding and withdrawal rules could help build long-term intergenerational equity, although it could undermine the ability of governments to access large pools of funds when they may be urgently needed.

Finally, our examination of different SWFs' funding and withdrawal rules indicates that there are inconsistencies and in some cases improper integrations with the owner countries' fiscal regimes. In particular, if the withdrawal rule is completely detached from the non-natural-resource fiscal deficit, the country could end up in a situation with a suboptimal management of the sovereign balance sheet. Some studies have shown that procyclical fiscal policy is quite common in natural-resource-exporting countries, including many oil-exporting countries during the 2008 oil-price boom (Villafuerte and Lopez-Murphy 2010). This budget procyclicality often relates to weak general and SWF institutional development, with short-sighted fiscal formulation and low integration of macroeconomic policies. In these cases, revamping the institutional structure of SWFs with well-integrated funding and withdrawal rules in the domestic macrofiscal policy setting and independent frameworks will help avoid domestic fiscal and financial fragilities and cope more effectively with international trade and financial market shocks.

Notes

1. Sources include the International Forum of Sovereign Wealth Funds (IFSWF) Secretariat and ESADEgeo SWF reports.
2. The Santiago Principles are a set of voluntary principles on the establishment and management of SWFs. These principles were prepared and adopted by member SWFs of the IFSWF in 2008, with the collaboration and coordination of the IMF.
3. For a documentation of pro-cyclical behavior of SWFs, as well as of other institutional investors, during the recent financial crisis, see Papaioannou and others, 2013.
4. For an exposition of the macro-financial linkages of the SAAs of commodity-based SWFs, see Brown and others, 2009.

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