SOVEREIGN INVESTORS: UNDERSTANDING THE GIANTS OF THE FINANCIAL WORLD

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ABSTRACT

Sovereign Investors are the giants of the financial world. 15% of total global assets under management[i], US $15 trillion, are projected to be in the hands of about 140 sovereign funds in 2020[ii].

This is equivalent to about 6 times the GDP of France in 2016. It is also slightly more than the GDP of the USA, the first economy in the world in 2010[iii].

Sovereign investors are also quickly growing in size and numbers. However, their identity as a new category of investors is still forming, prompting research on their characteristics.

In the following paper, we use the results of extensive existing research to describe key characteristics of sovereign investors.

Through the study of their objectives, size, investment strategies and governance challenges, we parse out the commonalities and differences between funds that are part of this new category of investors.

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CHARACTERIZING SOVEREIGN INVESTORS

"public actors, private actions" (Backer, 2010)

Sovereign investors are government-owned investment funds operating in private financial markets. Contrary to other institutional investors, sovereign investors' shareholders are a State/Country/City instead of a private entity/person. Yet, these publicly-owned funds aim of investing capital like private actors.

Sovereign Investors can be defined as organizations that professionally manage capital transferred to them by governments according to specific objectives determined by the sovereign sponsor.

Professional management, independence from government and financial return performance are key. But their sovereign sponsors also create them for three broad categories of objectives:

1) Capital maximization
    - Balancing intergenerational wealth (e.g. NBIM, Kuwait Investment Authority)
    - Funding future liabilities (e.g. Australia Future Fund, New Zealand Super Fund, 6 sovereign pension reserve funds globally)
    - Investing reserves (e.g. China Investment Corporation, Korea Investment Corporation)
2) Stabilization
    - Facilitating fiscal stability (e.g. Chile Economic and Social Stabilization Fund)
    - Stabilizing the exchange rate (e.g. Russia Reserve Fund, Mexico Oil Income Stabilization Fund)
3) Economic development
    - Investing in hard infrastructure (e.g. Nigeria Infrastructure Fund)
    - Investing in social infrastructure (e.g. Mubadala Development Company)
    - Pursuing industrial policy (e.g. Temasek) [iv]

If these categories are helpful to make sense of the variety of sovereign investors, they are neither mutually exclusive nor immutable. For example, the Irish National Pension Reserve Fund shifted from a capital maximization objective to an economic stabilization role and changed its name in response to the global financial crisis[v].

"Sovereign investors" also include two categories traditionally separated: sovereign wealth funds and pension funds. The long-term horizon and public service mission of both types justify studying them together.

However, these two groups differ based on their liabilities and beneficiaries. Public pension funds need to pay pensions to current retirees and have direct, clearly identified beneficiaries: current employees contributing money and retirees receiving pensions. On the contrary, sovereign wealth funds have rules to transfer profits back to the government, but do not usually have strict liability payments. Both types have a long-term horizon, but pension funds are more risk-averse and need regular dividends/payments and the possibility to exit some investments to be able to pay pensions. Sovereign Wealth Funds can theoretically forego intermediary payments and focus on long-term value creation. This difference in liability is key to understand the variations in investment strategy, portfolio, and regulation of the two groups.

A third group has been emerging in the literature: Sovereign Development Funds (sometimes also called Strategic Funds). Recently, the World Bank started a research project on this group, reinforcing the idea that it could become an increasingly popular category, even though few sovereign investors claim it as their identity[vi]. Sovereign Development Funds have a stated economic development goal. This goal can translate into a mandate to invest domestically, particularly in infrastructure, national companies, private equity, and industries and technologies to diversify the economy. Another model has been proposed in which the Sovereign Development Fund would invest in foreign markets but redistribute the profits to the population[vii]. Examples of sovereign development funds include Bahrain's Mumtalakat Holdings, Abu Dhabi's Mubadala, Saudi Arabia's Public Investment Fund and France's Fonds Stratégique d'Investissement.[viii]

VARIATIONS BETWEEN SOVEREIGN INVESTORS

Beyond their public ownership and long-term horizons, sovereign investors still vary on many dimensions, most notably the size of their assets under management (AUM), their date of creation, structure, funding sources, governance, policy objectives, risk/return profiles, investment horizons, eligible asset classes and instruments, and levels of transparency and accessibility. In **table 1**, we list the criteria most commonly found in the literature to compare sovereign investors.

Table 1: Criteria of variation between funds and main sub-groups

Source of funding	
	Commodity vs non-commodity
	Taxes vs profit from government-owned companies
	Fiscal surplus, exchange-rate intervention based on reserve accumulation
Governance structure	
	Entity status (central bank, government-sponsored agency, independent public entity)
	Transparency & disclosure
	Internal governance and degree of political representation
	Investment process
Economic and Political Context	
	Age
	Political regime: democracy to dictatorship
Objective of the Fund	
	Capital maximization
	Macro-economic stability
	Economic development
	Pension reserve in response to social welfare state crisis
Investment Mandate Geography	
	Domestic
	International
	Mix of domestic and international
Investment portfolio	
	low-risk to high-risk
	Exposure to real assets
	Passive, active, or mix
	Size of Assets Under Management (AUM)
Region where the fund has offices, and invests	
	Emerging markets, developed economies, 5 continents
	Other criteria: geopolitical, cultural, etc.
Mode of investment	
	Outsourcing vs Insourcing
	Co-investment platforms
Liabilities	
	Rule-based or discretionary

Based on data from PwC, 2016; Alsweilhem et al., 2016; Clark et al., 2013; Monk, 2009; Monk & Dixon, 2016

Three criteria are essential to understand the influence of sovereign investors on global financial markets.

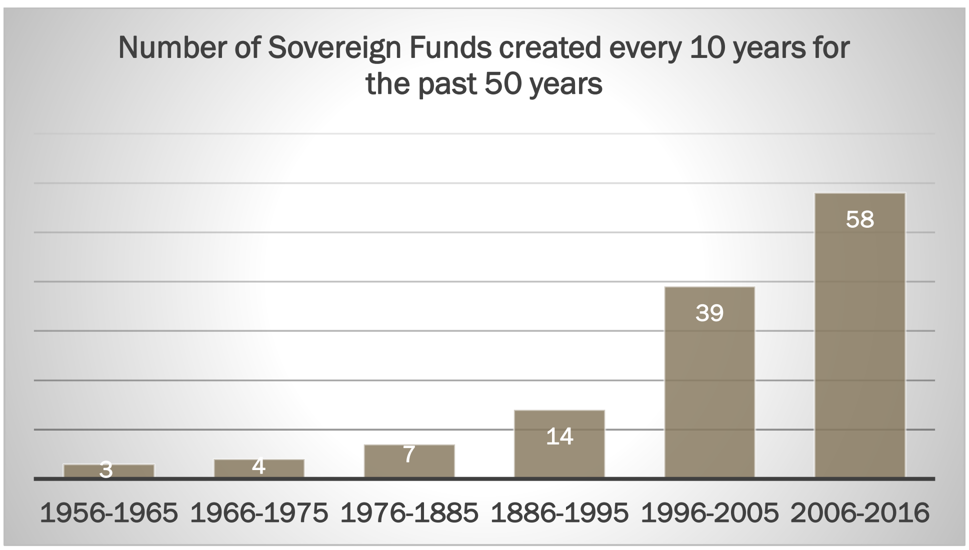
1. Age, AUM and geography
2. Investment strategies and portfolios
3. Governance and transparency

DATE OF CREATION AND COMPARATIVE SIZE[ix]

Sovereign funds have existed for more than a century. The French Caisse des depots et consignations was created in 1816. In the USA, several States created their own funds in the second half of the 19th century, starting with Texas, which created the Permanent School Fund in 1854 to fund primary and secondary schools, and the Permanent University Fund in 1876 for universities. Created in 1953, The Kuwait Investment Authority is often recognized as the first modern Sovereign Wealth Fund, as it was created to isolate and invest oil revenues before Kuwait gained its independence from the UK.

While completely new organizations, the number of sovereign investors has skyrocketed in the last 20 years. **Figure 1** shows that almost half of the funds have been created in the past 10 years.

Figure 1: Number of Sovereign Funds created every 10 year for the past 50 years

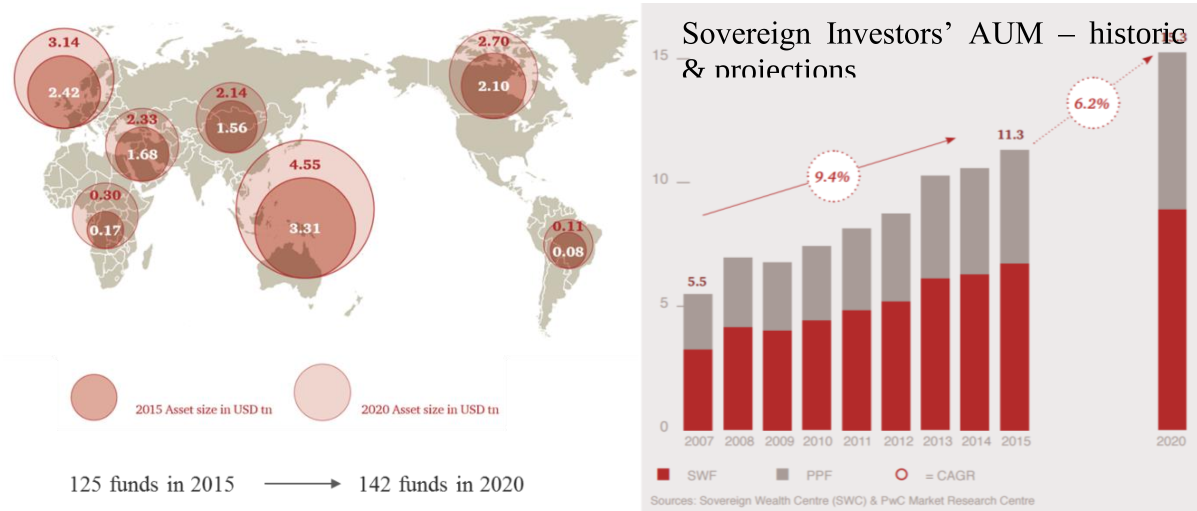


This increase in funds created came with a large increase in assets controlled by this type of investors. Sovereign Investors' AUM grew from USD 5.5 trillion in 2007 to USD 11.3 trillion in 2015, representing an impressive 9.4% cumulative annual growth rate (CAGR).x Even with the slowdown of economies like China, and lower oil and commodity prices, which provide revenues to the some of the largest funds, the AUM of sovereign and pension funds is forecast to grow at a 6.2% CAGR in the next five years and reach USD 15.3 trillion in 2020.

Developing and developed countries are also creating new sovereign funds, as did Ghana and Luxembourg most recently. The number of sovereign investors was around 125 in 2015 and is expected to reach around 145 in 2020. (See **figure 2**)

Funds from the Asia Pacific region, particularly China, are forecast to grow the fastest. They should top the list of funds by AUM in the near future. Africa is forecast to show the fastest growth in terms of percentage in the next 5 years but starts from a very small asset base compared to other funds' locations. Pension plans are also undeveloped in Africa and Latin America, which opens the door to the creation new pension funds on these continents.

Figure 2: Projected growth in AUM of Sovereign Funds per geography and historic growth in AUM



Source: PWC 2016, "Sovereign Investors 2020"

Sovereign Funds vary greatly in size of their assets under management (AUM), Their AUM go from a few millions to 1.2 trillion US dollars for the Japan Government Pension Fund. 9 sovereign funds own more than 50% of the total assets under management of all sovereign funds. These funds come from Asia, Europe and the Middle East, and include pension funds and sovereign wealth funds that were created between 1978 and 2007 (see **table 2**).

Table 2: 10 largest sovereign funds in assets under management in 2016 (based on data by PwC, 2016)[xi]

Name of Sovereign Fund	Country	year est.	type	AUM (bn USD)
Government Pension Investment Fund	Japan	2006	PPF	1191.0
Norges Bank Investment Management	Norway	1994	SWF	861.6
China Investment Corporation	China	2007	SWF	650.0
ADIA	UAE	2005	SWF	627.0
State Administration of Foreign Exchange	China	1997	SWF	593.7
Kuwait Investment Authority	Kuwait	1978	SWF	548.0
National Pension Service	South Korea	1988	PPF	429.0
APG	Netherlands	2000	PPF	417.0
Hong Kong Monetary Authority Exchange Fund - Investment Portfolio and Long-term Growth	China	1993	SWF	390.7

The distribution of sovereign funds based on their AUM shows a great diversity:

- 36 funds (29% of total) have between USD 51bn and USD 500bn in AUM,
- 33 funds (26%) have between USD 10bn and 50bn in AUM.
- This still leaves 40% of the sovereign funds with less than USD 10bn in AUM, including 19 funds under 1 billion in AUM.

Figure 3: Distribution of total assets under management among sovereign investors

Figure 3 shows the skewed distribution of total assets under management among funds, with 24 funds owning 80% of the total assets, and 58 funds in charge of less than 2% of the assets. These differences in size of AUM leads to different investment strategies.

Smaller funds have less resources to manage their capital and either hire a few managers to build a diversified portfolio, or target very specific asset classes and geographies, for example domestic infrastructure and private equity.

Larger funds can have internal teams actively managing their portfolios. ADIA, GIC and Ontario Teachers now each have their own investment staff of over 1,000 persons and are good examples of the trend toward increased in-house management.

INVESTMENT STRATEGIES AND PORTFOLIO

We have seen that sovereign investors are similar in the fact that they are created by governments for some national objectives. Many studies have sought to see if these objectives violated some rules of investing to maximize financial returns, and we show below that sovereign investors essentially behave like private investors. In addition, we showed that sovereign investors are still a very heterogenous group, and we will discuss here how these differences influence their portfolios. Finally, the common long-term horizon and increased relationships between the funds let see common trends: a growing interest for alternative assets that they increasingly access via co-investments with peers.

OVERALL LARGE SOVEREIGN INVESTORS INVEST LIKE OTHER LARGE INSTITUTIONAL INVESTORS

Sovereign investors' political ownership led many observers and regulators to fear that they would invest in companies' equity to gain political power and destabilize foreign economies. This was particularly the case for sovereign wealth funds as public pension funds invest primarily in debt and cash instruments on public markets.

However, studies have shown that the investments of the largest sovereign investors are not significantly different from their benchmarks and mutual funds' investments. This means large sovereign wealth funds seem to invest primarily for financial returns. Specifically, the geography, sectors and political regimes of investor and recipient countries do not significantly differ between large sovereign wealth funds and mutual funds with corresponding risk-return profiles[xii].

Sovereign wealth funds prefer the same type of stocks, and have globally the same effect on the target company's value as other passive institutional investors. From a macro perspective, sovereign wealth funds and pension funds have also largely been passive shareholders, with no significant influence on firms' financial or operational performance in the long run.[xiii] We should note that this might change as more and more sovereign investors go into private equity, and increase their in-house capabilities.

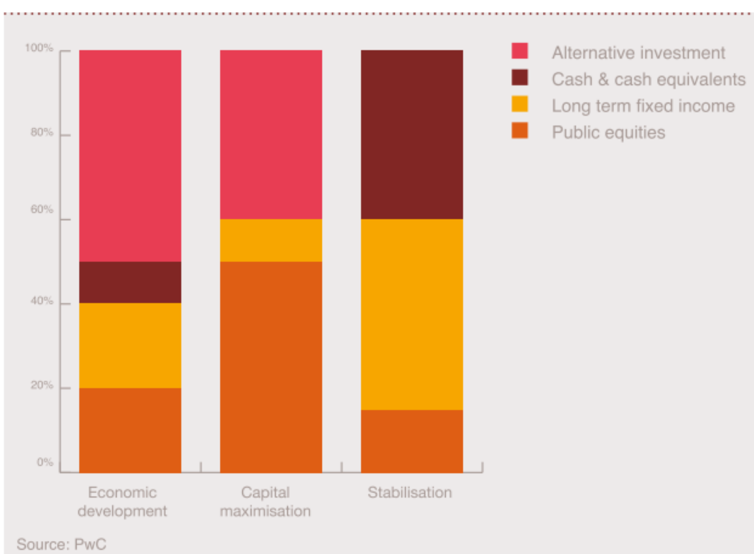
If sovereign investors do adopt similar strategies as private institutional investors, they vary widely in their risk-return preferences, the benchmarks they choose, and the balance of assets in their portfolio. We explore below these differences in investment strategies.

DIFFERENT OBJECTIVES LEAD TO DIFFERENT PORTFOLIOS

Many sovereign investors describe their investment strategies in terms of target asset allocation, notably based on relative share of equities versus bonds. Funds with stabilization goals and pension funds typically hold more risk-averse portfolios than funds with capital maximization objectives, and hold a higher share of bonds than equity.

For example, the Pension Reserve Fund of Chile typically holds 85% bonds versus 15% equity, and the Hong Kong Monetary Authority also holds about 75% bonds and 25% equities. On the other end of the spectrum, some large sovereign wealth funds hold more equities than bonds, 48% vs 26% for Singapore's GIC, 55% vs 15% for UAE's ADIA, 53% vs 37% for South Africa PIC. These funds that are more risk-seeking, usually larger and with more capabilities have also steadily increased their allocation to alternative assets: hedge funds, private equity, infrastructure and real estate. **Figure 4** shows typical asset allocation based on funds' objectives.

Figure 4: typical asset allocation based on funds' objectives (PWC 2016)



In terms of geographies, another study of 17 of the largest Sovereign Wealth Funds showed that in 2009, Sovereign Wealth Funds invested 22% of all deals' value in the USA. The second country with the most investment was China, and explained by the domestic investments of CIC. Other popular target countries were

India, the UK, Australia, Malaysia, Singapore. Saudi Arabia, Vietnam and Tunisia. The trend was around expanding targeted geographies through joint investment funds between two countries' sovereign investors.

The investment strategies of sovereign investors should go beyond this ideal market portfolio. The liabilities of the funds and its objectives are the first key guidelines for its exposure to different asset classes and risk factors, its investment horizon, target returns and risk limits. However, the investment strategy is also dependent on the resources and investment capacity of the fund, notably to determine active vs passive, and internal vs external management[xiv]. Many scholars have proposed alternative ways to the market portfolio for sovereign investors to think about their investment strategy. Some of them include having a risk budget, focusing on the liabilities of the fund, and having a "governance budget" accounting for time, expertise and common commitment of each fund to assess its capacity to react to a changing environment.[xv]

Since 2002, sovereign investors have carved an increasingly important part of their portfolio for private markets and alternative assets. This change in asset allocation has been driven by the low yield of bonds and sovereign funds' traditional assets in the past 10 years. In addition, sovereign investors are increasingly trying to capitalize on their unique strength: their long-term investment horizons. To play this card requires them to invest in private markets, specifically in illiquid assets for which they earn a premium compared to shorter-term investors.

A GROWING ALLOCATION TO INFRASTRUCTURE, REAL ESTATE, AND PRIVATE EQUITY

Real estate is now a key asset class for sovereign investors, giving them access to reliable sustainable revenues over a long period of investment, and hedging other investments in their portfolios. 9 out of the 10 largest sovereign investors have specialized teams for real estate and an explicit target allocation to this asset class. So far, sovereign investors have privileged high quality buildings in prime locations in world cities such as Paris, London and New York, which can give them returns of 3% to 6%. In 2015, ~5% of Capital maximization funds' portfolios were allocated to real estate, while it was 2.4% for economic development funds.[xvi] Funds with internal teams might start developing expertise in specific locations and sectors that could tip this trend toward newer city developments in other parts of the world.

Infrastructure has been called the perfect asset for long-term investors. The interest of sovereign investors has grown over the past 10 years, fueled again by the low yield of bonds, and the huge needs for infrastructure driven by the population growth and aging of existing assets. Many investors announced a target of 5% allocation to infrastructure, but today, the average is 3.3% of sovereign investors' portfolios. The infrastructure market is still undeveloped in many countries, and there is a fierce competition for financially-attractive assets leased or privatized by governments. For sovereign investors to meet their target allocations, they might need to work closely with governments to inform the development of a fair process and rules supporting bids for proposals and the lease of assets. They might also look at what projects meet the desirable characteristics of infrastructure, and how to redefine some urban projects to find attractive opportunities that are not currently part of the standard definition of infrastructure assets.

Private Equity asset allocation varies widely between funds, with an average of 5% of their portfolio in 2014. However, the trend toward investing in emerging markets, and investing more to alternative assets is likely to drive up the share of the portfolio dedicated to private equity. The share of private equity in the alternative portfolios is estimated to range between 30 and 40%. Private equity investments by sovereign investors were previously overwhelmingly by Asian investors in Asia. However, the investment in private equity in Africa have been growing steadily, and investors have expressed interest for deals in Latin America. So far, sovereign investors have been accessing private equity by being limited partners(LPs) in private equity funds. They are the world's largest group of investors being LPs in private equity funds.

In the future, sovereign investors are likely to increase their access to private equity through co-investments with other sovereign investors, instead of external asset managers.

CO-INVESTING WITH PEERS IS ON THE RISE

Until recently, sovereign investors almost entirely relied on external asset managers to invest their capital. This might explain why sovereign investors' investments were very similar to mutual funds' as we noted above. There were some exceptions such as Temasek or GIC, which have been investing for a long time in domestic and regional private equity deals. However, the growing interest for alternative assets has led some investors to build proficient internal teams, such as OMERS in Canada or QIC in Australia.

In alternatives assets, external managers' do not have the long-term horizons that sovereign investors have, and require margins that make some assets unattractive and reduce the pools of assets available to sovereign investors. A re-intermediation has started to happen, as sovereign investors increasingly enter into bilateral and multilateral co-investment agreements with each other.

This trend affects particularly infrastructure and private equity. OMERS created the Global Strategic Investment Alliance in 2012 to invest capital from several sovereign investors directly into infrastructure projects in North America and Western Europe for a reduced fee compared to regular external asset managers. Australia's QIC also recently partnered with Calpers in the USA and KIC in South Korea. For those sovereign investors with internal teams and their partners, direct investment in infrastructure seems to pay off. In Canada, CPPIB, Ontario Teachers' Pension Plan and OMERS showed financial returns from 16.5% to 21.4% from their direct investments in infrastructure. On the other hand, US pension funds that used third-party managers scored returns closer to the MSCI Global Infrastructure index's -5.4%.[xvii]

Co-investments are also growing in Private Equity, where they increase the control of sovereign investors and reduce management fees. Co-investment are also growing in size as the example of Tesco's South Korean unit Homeplus (valued at over USD 6 billion) shows. In addition, some funds now specialize on co-investing with other sovereign investors. The Russian Direct Investment Fund is a case in point: its sole mission is to act as a catalyst and attract over USD 25bn of FDI in Russia, while it oversees USD 10bn. Within 4 years, the RDIF partnered with 20 institutional investors from Europe, the Middle East, and Far East Asia.[xviii]

THE CHALLENGE OF GOOD GOVERNANCE

Many sovereign investors inherited structures and governance from governments. The newly created ones have an opportunity to create rules adapted to their position in between governments and private finance, and most fitted to realize the potential of their long-term horizons. Here we discuss how governance differs between funds and what principles have proved to help sovereign investors fulfill their missions.

TRANSPARENCY AND INDEPENDENCE FROM SHORT- TERM POLITICS

Economic analyses have shown that state ownership of companies was often linked with poor corporate financial performance, inefficiencies, and weak managerial incentives. Government-owned investment funds are threatened by these issues. Notably, government ownership present two major risks,

- political interference, notably in the choice of investment, and
- agency conflicts, notably misalignment between management, political figures and the interest of the country.

Financial markets make the fear of political interference manifest. The transparency of sovereign investors impact the value of the shares of the company they acquire. Acquisition by transparent sovereign investors has led to an increase in share value. These same funds also had a better impact on the target firm's long-term value. In addition, funds that have political appointees in their management have been shown to invest more in underperforming domestic companies than funds with no political personnel in their management.[xix]

International organizations such as the World Economic Forum, have repeatedly called for more transparency from sovereign funds. The Santiago Principles brought some of the largest sovereign wealth funds to agree on common guidelines. These principles were drafted by 14 funds forming the International Forum of Sovereign Wealth Funds in 2009, as part of a joint effort between the international monetary fund and the "international working group of sovereign wealth funds" to bring more transparency into the governance and investment decisions of SWFs. The signatories of the Santiago Principles, now 30 SWFs, are members of the IFSWF and publish yearly reports about how they are working toward implementing the Santiago principles.

Today, many sovereign investors publish annual reports, especially when they are clearly separated from the government bureaucracy. Some even publish investment reports and sustainability reports in addition to traditional annual reports.

It should be noted though that a long-term political objective and alignment with government policy for the country do not equate short-term political interference. On the contrary, this long-term horizon and alignment with government incentives can support the long-term financial returns of the fund. Indeed, this can be a key for sovereign investors to find and structure innovative projects that were not accessible directly to private investors. This is very different from the fund being used for personal interests, or politicians dictating investments, both of which can be prohibited through governance arrangements.

A large amount of research and policy recommendations have emphasized the need for good governance to deal with the risk of political interference and agency conflicts. We describe below key governance challenges and best practices.

Governance principles and variations

Governance can be defined as the orchestration of collective action to fulfill some goals in a timely, efficient and effective manner[xx]. It depends both on the a priori definition of tasks, functions, rules and procedures, and on the way these function in real time when the organization needs to fulfill a goal. This leads to two sets of challenges and best practices:

1. what rules and tasks to define for the organization, and
2. how to deal with the existing rules to accomplish challenging goals in a changing environment.

Regarding rules and procedures, several key domains can be highlighted.

First, the separation between the political sponsor and the fund will be influenced by the position of the fund in the public sector, the involvement of bureaucrats and political figures in the fund, as part of the executive team, the board of directors, or externally as legislator. To avoid that investment decisions be made for short-term motives, not aligned with the overall mission of the fund, a clear division of labor between the sovereign sponsor and the executives of the fund is advised. The sovereign should set the general objectives and goals, while the fund's executives devise the strategy, and notably pick the investment strategy. Finally, a board of directors with independent members should oversee and keep in check the executives of the fund. Positioning the fund in the Ministry of Finance or Central Bank is not advised unless the mission of the funds make its relationship with central bankers or bureaucrats essential.

Second, the flow of funds in and out of the sovereign fund can be discretionary or rule-based. Making clear who has the authority to decide when and how much fund are transferred in and out of the fund is key for the fund to make the right investment decisions. It can also go against some of the funds' long-term objectives, and could be clearly defined by the government when setting up the fund.

Finally, the internal governance structure of the sovereign investor is key for the successful implementation of the objectives of the fund. There can easily be a discrepancy between what is possible based on the internal governance of the fund and the aspiration of the government for the fund. The internal governance of a fund can be analyzed through the lens of people, process and tools.[xxi]

People refer to the workforce of the fund: who is currently working for the fund and who can the fund attract and afford to pay, as salaries of investment managers are high in the private sector. Process refers to which groups and according to what criteria are important strategy decisions made and implemented, notably asset selection and reporting or knowledge management. Finally, tools refer to modern technologies, access to information, and the analytical means to make sense of this information.

People, process and tools have been shown to be a challenge for both sovereign wealth funds and public pension funds. A survey of CEOs of 80 pension funds covering different sizes and geographies showed that they faced agency conflicts, board effectiveness issues and investment/risk management challenges. Their biggest obstacle was strategic planning and execution, and they thought their organizations fared the worst when it came to board effectiveness.[xxii]

Case studies and interviews with Sovereign Wealth Funds indicated that hiring people with the right skills was one of their main challenges, justifying opening offices in world cities to get closer to the action for some of the largest funds.

Finally, sovereign investors can think of their capabilities in terms of “governance budgets” composed of time, expertise and collective commitment. These three resources need to be measured, and considered before committing to a strategy and set of actions. The use of the governance budget with the risk budget can help sovereign investors to make the most of their existing governance structures in situations requiring fast implementation.

Conclusion

Sovereign Investors have existed for decades, but never have they increased in numbers and size as in the past 10 years. This trend is here to stay.

Sovereign investors have not been the trojan horses aimed at destroying foreign economies that observers feared. Instead, the largest funds have consistently seemed to pursue and often achieve competitive financial returns while playing by the rules of the global financial system.

Sovereign investors have in common a long-term horizon and objectives that wish to support stable, growing economies. They are also widely diverse, most notably in terms of specific mandate, capital and internal resources, meaning their investment strategies vary to adapt to these characteristics.

However, low returns from traditional assets and strategic mandates have pushed many sovereign investors to increase their exposure to alternative assets. Some have built internal teams and many developed co-investment partnerships to become competitive in these markets. This trend is an opportunity to redirect more capital into assets in the private markets that support the real economy.

Governance has been one of the greatest challenge, and potentially a key enabler of profitable new strategies. Indeed, successful sovereign investors need to be shielded from short-term political interferences, and equipped with the right resources, people, process and tools to pursue appropriate investment strategies. As new funds are created, many will have the opportunity to test new governance structures that could spur investment innovation.

[i] PwC projects US $100 trillion of assets under management in 2020: https://www.pwc.com/gx/en/asset-management/publications/pdfs/pwc-asset-management-2020-a-brave-new-world-final.pdf
[ii] PwC 2016, Sovereign Investors 2020
[iii] https://siteresources.worldbank.org/DATASTATISTICS/Resources/GDP.pdf
https://data.oecd.org/gdp/gdp-long-term-forecast.htm
[iv] Categories from PwC's "Sovereign Investors 2020" (2016), similar to the ones proposed by Javier Santiso for the OECD (2008), and Clark, Dixon & Monk, "Sovereign Wealth Funds, Legitimacy, Governance and Global Power"(2013). Examples of funds from PwC (2016).
[v] PwC (2016) "Sovereign Investors 2020"
[vi] Halland, 2016
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[viii] Rietveld, M., Tweedie, K. 2015
[ix] Analysis based on data primarily from PwC 2016, Sovereign Investors 2020, completed with data from the International Forum on Sovereign Wealth Funds, and the Sovereign Wealth Center. 125 funds have data for their AUM, 127 have data for their date of creation
[x] Sovereign Wealth Center and PwC Market Research Centre – Sovereign Investors 2020 – PwC, 2016
[xi] Secretive sovereign wealth funds such as ADIA do not publicly declare their assets under management. Numbers in this table are based on estimates by PwC.
[xii] We specify "large" sovereign investors as studies typically pick sovereign funds with the largest AUM to be included in their studies. Avendano and Santiso (2009) analyze 17 SWFs, and indicate large AUM as a selection criteria in their report "Are Sovereign Wealth Funds' Investments Politically Biased? A comparison with Mutual Funds".
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