Department of Economics and Finance

Chair of Equity Markets and Alternative Investments

Alternative Investments of Sovereign Wealth Funds: Evolution, Performance and Challenges

Candidate:
Hubbard Robert Andrea 765781

Supervisor:
Prof. Marco Morelli

Co-Supervisor:
Prof. Paolo Vitale

Academic Year 2023/2024

Index

Introduction

Over the past few decades, Sovereign Wealth Funds have emerged as major players in international financial markets, taking on a more prominent position in the global investment scene.

These organizations, which are supported by national wealth reserves and managed by national governments, must find profitable and long-term investment possibilities while navigating an increasingly complicated financial and economic landscape.

At the same time, alternative investments have grown in significance within the financial investment space, providing investors with a plethora of options outside conventional bond and equity investments.

Hedge funds, private equity, commodities, real estate, and other non-traditional asset classes are examples of alternative investing techniques that can provide portfolio diversification and potentially high returns.

In light of this, the purpose of this thesis is to investigate how alternative investments in SWFs have changed between 2019 and 2022. First and foremost, I chose this time frame because it included the COVID-19 pandemic's aftermath, which had a significant effect on financial markets and economies throughout the world.

The pandemic caused previously unheard-of levels of market and economic volatility as well as behavioral changes in investors, which had an impact on investing strategies and the performance of several asset classes, including alternatives.

Second, throughout this time, there was an increase in trade disputes and geopolitical tensions between major economies, namely China and the United States.

SWFs' investment choices and tactics may have been impacted by these geopolitical changes, especially with regard to risk management and asset allocation.

Additionally, the regulatory frameworks and policies that oversee financial markets and investments in various jurisdictions underwent significant changes between 2019 and 2022 (e.g., the Basel Committee on Banking Supervision (BCBS) finalized Basel IV, the EU Taxonomy for Sustainable Activities, and the Regulation of Cryptocurrencies).

The investment environment for SWFs and alternative investments may have changed as a result of these regulatory developments, affecting their investment strategies and decision-making procedures. Innovation and technological developments also occurred during this time, which would have affected investment options and approaches for alternative asset classes.

The emergence of sustainable investing, fintech, and blockchain technologies during this period may have influenced SWFs' alternative investment strategies and investment preferences.

An effort will be made to comprehend how alternative investment strategies have evolved over time and what the primary trends and difficulties faced by these institutions have been by a thorough review of the data gathered by a number of chosen SWFs.

The main goals of the research are to determine the factors that led to changes in the alternative investment methods that SWFs employed and to examine the performance and outcomes of these investments during the course of the study.

Furthermore, this study will examine the consequences of these advancements for sovereign wealth funds and the global investing environment.

The objective of this study is to enhance comprehension of the growing significance of SWFs in the global investment landscape and offer valuable perspectives for evaluating the pros and cons of implementing alternative investment approaches in this domain.

Chapter I — Sovereign wealth funds: concept, role and evolution

1.1 History of sovereign wealth funds

It is appropriate to attempt to define sovereign wealth funds before discussing the subject and the various traits they have.

A state-owned investment fund that makes investments in tangible and intangible assets like stocks, bonds, and precious metals, as well as in alternative assets like hedge funds, real estate, and private equity funds, is known as a sovereign wealth fund (SWF), sovereign investment fund, or social wealth fund. Global investment is made by sovereign wealth funds.

The majority of SWFs are financed by the central bank's foreign exchange reserves or by the proceeds from the export of commodities.

Earlier commodity stabilization funds, which were created to mitigate the effects of shifting commodity prices or production levels, especially in countries that largely rely on natural resources like oil, copper, or diamonds, are the source of many Sovereign Wealth Funds.

These stabilization funds frequently faced difficulties before the 1980s, including poor administration and political pressure to boost domestic spending.

A major turning point came when World Bank and Chicago School economists established the Chilean Social and Economic Stabilization Fund in the middle of Chile's economic reform in the 1980s.

This project included an independent board to supervise accruals and withdrawals in order to reduce political influence and regulate public spending, a feature that is similar to that of contemporary SWFs.

The World Bank has pushed for comparable models in other countries as a result of Chile's fund's success.

Stabilization funds and SWFs evolved gradually, although the former were mainly concerned with fostering local growth through the management of expenditure swings, whereas the latter gave precedence to financial gains and global diversification.

To diversify income streams and counteract the effects of home currency appreciation, SWFs frequently choose to invest overseas. This tactic helps them prevent economic overheating, also known as "Dutch disease."

However, a lot of modern SWFs—implicitly or explicitly—play a stabilizing function, as shown by their participation in financial crises like the recapitalizations of 2008–2009.

Most SWF research indicates that reallocating assets from stabilization funds accounts for a large amount of SWF expansion. As such, debates on the ideal size of stabilization funds are relevant to the larger conversation about SWFs.

Older SWFs came out of stability funds, but most of the ones created after 2000 were created as independent organizations even though they weren't necessarily called SWFs. Regardless of where they came from, SWFs grew gradually until 2005, when they began to develop rapidly again. This was due to changes in the dynamics of global trade as well as rising oil prices, which helped Asian countries with significant trade surpluses and oil-exporting countries. (Bortolotti, Fotak, Megginson, 2014)

1.2. The Evolving Political Response to Cross-Border SWF Investments

When the China Investment Corporation (CIC) was founded in early 2007, SWFs gained a lot of attention. CIC made news when it bought a $3 billion non-voting equity position in Blackstone Group, shortly before the company's much-awaited (but ultimately disappointing) initial public offering.

When a number of mostly Arabian Gulf-based SWFs intervened to stabilize the Western banking system later that year and again in early 2008, SWFs gained prominence in the conversation surrounding financial policy (Bortolotti, Fotak, Megginson, 2014).

They achieved this by investing roughly $60 billion in freshly issued stock in significant European and American banks during the height of the subprime mortgage crisis.

Between July 2005 and October 2008, SWFs contributed around $90 billion to financial institutions in the United States and Europe. Furthermore, in late 2007 and early 2008, CIC contributed an additional $40 billion to recapitalize two Chinese state-owned banks.

As a result, during that time period, these funds added more new funds to global financial institutions than any other single body, with the exception of the US government as a whole (Bortolotti, Fotak, Megginson, 2014).

These incidents highlighted the mutual reliance between Western financial economies and these sovereign investment vehicles, as well as the considerable financial influence that SWFs possess.

This observation was highlighted by scholars such as Kunzel, Lu, Petrova, and Pihlman (2011) and Bolton, Samama, and Stiglitz (2012).

SWFs were initially greeted with harsh criticism from public officials and media analysis, which centered on the difficulties that were thought to come with their growth. German Chancellor Angela Merkel's concerns in June 2007 about Russian SWFs owning pipelines and energy infrastructure in Europe, as well as the increased debate on SWFs in the U.S. Congress, served as political examples of opposition to SWFs.

1.3. Countries Proposing or Launching SWFs Recently

Many nations have recently established or proposed new SWFs, despite the unclear political response to them in the West and the few empirical evidence demonstrating their efficacy.

According to Blas (2013)'s data, 32 SWFs were established between 2005 and 2012, according to the Sovereign Wealth Fund Institute (SWFI), and as of October 2013, there were roughly 70 funds operating with assets close to $5.5 trillion.

The Global SWF annual report states that there are currently over 100 SWFs in operation. Managed assets (AUM) increased to a height of $11.6 trillion in May 2024 as a result of the rising oil prices and strong stock market performance.

In comparison to this amount, investments made up a total of 124.7 billion dollars over 324 transactions (GlobalSWF 2024).

Sovereign wealth funds (SWFs) were frequently created in tandem with important discoveries of fresh deposits of natural resources or with significant reorganizations in the administration of pre-existing resource bases.
Following the confirmation of significant new resources, nations including Brazil, Israel, Papua New Guinea, and Mongolia proposed or established SWFs.
For instance, after Petrobras found significant oil discoveries off its coast, Brazil recommended the creation of a new SWF. In a same vein, Israel started preparing for an SWF after discovering large natural gas deposits inside its Mediterranean borders.
Papua New Guinea expected windfall payments from a recently constructed LNG export facility, which might exceed the country's yearly GNP multiple times over.
In the meantime, Mongolia started creating an SWF after awarding mining licenses to multinational firms in exchange for their rich mineral resources.
This trend was followed by other countries that proposed SWFs after verifying new reserves of natural resources, including Tanzania, Ghana, Liberia, and Sierra Leone.
Taking one step further, Greenland and Lebanon proposed SWFs before complete commercial viability was established, in anticipation of possible natural gas finds within their borders.
Each of Angola, Chile, Iran, Nigeria, and Russia established new SWFs or reorganized already-existing ones to change how royalties are paid out of available resources.
Their goals differed: Iran wanted to get around international sanctions, Angola and Nigeria wanted to improve transparency and stop the theft of their rich natural resources, Chile and Russia wanted to increase their foreign investments.
The desire to reallocate "excess" foreign exchange reserves, usually held by central banks, from static investments in low-yield sovereign bonds (typically U.S. government bonds) to higher-yield equity and corporate debt investments has been a third common reason for launching a Sovereign Wealth Fund (Bortolotti, Fotak, Megginson, 2014).
The governments or ruling parties of India, Japan, Panama, Saudi Arabia, and South Africa proposed the creation of new SWFs due to their desire to maximize the use of excess reserves.

From the aforementioned examples of new and proposed SWFs, three major themes can be seen.
First off, instead of using the money for spending right away or passing windfall gains through already-existing state-owned financial institutions, these governments mainly aimed to create wealth funds to protect and oversee fresh financial inflows.
Furthermore, these proposals indicate a strong preference for making sure that the management of new resource inflows is carried out through professionally managed, transparent, and accountable investment entities rather than using state-owned banks or existing, frequently corrupted state investment vehicles.
It's true that the data currently available on the effectiveness of state-owned investment vehicles is quite negative. Specifically, it is typically discovered that their investments in target firms are linked to lower target firm valuations. [Jiang, Lee, Yue (2010); Lin, Ma, Malatesta, Xuan (2011)].
State-owned banks have also been documented to act and lend differently than do privately owned banks, and this generally is associated with poor aggregate economic performance and value reductions at specific target firms (Bortolotti, Fotak, Megginson, 2014).
Third, in terms of organizational structure, management professionalism and transparency, and investment preference for listed shares and bonds of foreign corporations, these new funds are nearly entirely fashioned after Norway's GPFG.

1.4 Issues of SWFs

Early critics of Sovereign Wealth Funds (SWFs) raised several concerns, including:

1. The potential that their funds will be used to further political goals and buy out interests in crucial industries.
2. The risk for inflating stock market bubbles as a result of their big investments, which would lower demand for Treasury bonds.
3. The possibility of increased volatility in financial markets.
4. Concerns about the impact on corporate governance, driven by political motives or a lack of sophistication.
5. The potential for the emergence of new financial protectionism in response to SWFs.
6. Persistent criticism regarding the lack of transparency within SWFs, which remains an ongoing issue.
7. Apprehension over the rapid growth of SWFs, perceived as exponential.
8. The worry that because SWFs are state-owned, they would put home country governments' strategic investments ahead of purely commercial ones in an effort to gain access to foreign technology or political power (Bortolotti, Fotak, Megginson, 2014).

Many of these fears, nevertheless, have been unfounded because there aren't any notable examples of SWFs acting as political instruments for their home countries when they invest abroad.

Conversely, SWFs have frequently—and occasionally overly—exhibited a passive and non-confrontational stance toward target firm managers (Bortolotti, Fotak, Megginson, 2014).

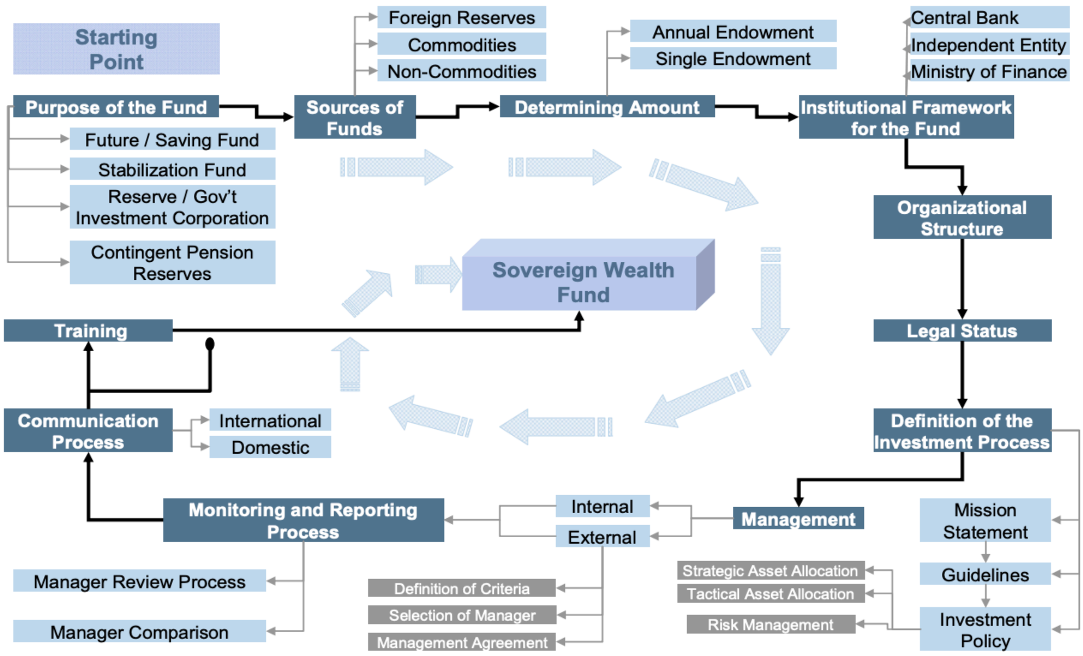
Sovereign Wealth Funds (SWFs) are foreign, state-owned investment enterprises. As such, any deviation from a completely passive investment methodology might result in regulatory backlash or political pressure from recipient state governments. (Dinç and Erel, 2013).

Foreign governments frequently encounter strong public opposition when they actively engage in a local target, which forces them to adopt passive investment tactics, especially when it comes to their overseas holdings.
The Committee on Foreign Investment in the United States (CFIUS) will almost always be scrutinizing a foreign state-owned entity's involvement in a large acquisition of a US corporation, as shown by the works of Bortolotti, Fotak and Megginson (2014).
Even when SWFs obtain majority stakes—which is most often the case when investing in domestic companies—the funds rarely take on the managers in place.
Positively, during the 2008–2009 Financial Crisis, SWFs were crucial in supplying liquidity to domestic and international financial markets.

1.5 How Sovereign Wealth Funds are Organized and Operate

In every modern government, there exists a prominent involvement in the economic sphere, facilitated through a diverse array of entities.
Ranging from official state ministries like the Treasury and Finance Ministry to legally distinct state-owned enterprises (SOEs), governments exert influence as controlling shareholders. Between these organizational extremes lie regulatory bodies, boards, and commissions such as the U.S. Securities and Exchange Commission and the Social Security Administration. Additionally, there are state-owned commercial and development banks like Brazil's BNDES and Germany's KfW, as well as central banks, which, despite enjoying operational autonomy, remain integrated organs of government (Bortolotti, Fotak, Megginson, 2014).
Different countries have quite different levels of management discretion, direct political authority, and job status in these organizations. Governments looking to establish a Sovereign Wealth Fund (SWF) need to take these organizational, ownership, and personnel challenges into consideration, as highlighted by Bortolotti, Fotak and Megginson (2014).
Finding the ideal level of separation between the future SWF and the current central bank and Finance Ministry is the first step in this process.

Figure 1.1: SWF Objective, Funding, Organization and Investing Process



Source: Sameer Jain, "Integrating Hedge Fund Strategies in Sovereign Wealth Portfolios," Citi Capital Advisors (November 2009), pg. 3.

While foreign currency reserve management groups and stabilization funds frequently function within already-existing organizations, governments purposefully keep SWFs apart from other ministries and agencies, either legally or operationally, to protect fund administrators from direct political interference.

The efficiency of this shielding, however, differs greatly between nations, which presents unique difficulties for SWFs in non-democratic states and kingdoms.

One example of a strong defense against political pressure is the Government Pension Fund Global (GPFG) in Norway, which is administered by Norges Bank but has an independent board that sets investment policies and legislative standards for strategic guidelines.

On the other hand, the Government Investment Company in Singapore and the Abu Dhabi's ADIA both report exclusively to their respective monarchs and uphold strict confidentiality regarding the funds they oversee.

Figure 1.1 shows the staffing, funding, organizational structure, and operational framework of a new SWF. The political and cultural climate of the country have an impact on each of these elements.

Generally, SWFs are created by clear legislation in open, democratic nations. They are also funded by designated sources, have well-defined goals for operations and investments, are required to adhere to professional standards, and place a high value on ethical investment methods and transparency. Less democratic governments, on the other hand, take a different approach, customizing the SWF structure to fit their unique political objectives (Bortolotti, Fotak, Megginson, 2014).

1.6 Differences with other Large, Internationally Active Institutional Investors

The central question around Sovereign Wealth Funds (SWFs) is on how they differ from other sizable, internationally active institutional investors in terms of structure, intent, and effect.

Studies like Avendaño and Santiso (2012), which compare SWFs with mutual funds, and Chhaochharia and Laeven (2009), which compare SWFs with pension funds, require a private-sector reference group.

Likewise, private-sector standards are necessary for analyses of the impact of SWFs on the behavior and governance of investment targets, as demonstrated by Bortolotti, Fotak, and Megginson (2014) and Karolyi and Liao (2011).

However, it's important to list the salient characteristics that really distinguish SWFs and have significant implications that should be of interest to academic observers. The main one is that they are owned by the state.

On one hand, governments might aim for more than just maximizing wealth at the corporate level. For example, they might support national industrial interests, increase employment, and improve social welfare.

Conversely, political power may cause priorities to be distorted and businesses to be forced to pursue competing goals as a result of rent-seeking activity.

Being state-owned organizations, SWFs have the ability to stray from the goals usually associated with investors in the private sector, which could have an impact on their investment targets in terms of political influence.

This dynamic is consistent with the difficulties of "multiple principals" and cognitive dissonance that Boardman and Vining (2012) and Vining, Boardman, and Moore (2014) have discussed in relation to mixed ownership.

However unlike many other cases of mixed ownership leading to opaque corporations, SWFs frequently work with publicly traded companies, providing transparency for more thorough examination of the effectiveness and impact of government investments.

It is unclear if this combination of ownership results in the "worst of both worlds," akin to crony capitalism, or the "best of both worlds," combining the efficiency of the private sector with the social welfare concerns of the government.

Second, unlike highly leveraged hedge funds or pension funds, most SWFs have no explicit liabilities. This means that, as studies like Chen, Harford, and Li (2007) have shown, SWFs may be able to act as true long-term shareholders with long investment horizons and low liquidity requirements.

Empirical research is necessary to determine whether issues like political motivations, understaffing, and worries about foreign government shareholding help or hinder the realization of this potential (Bortolotti, Fotak, Megginson, 2014).

1.7 Widely Varying Transparency Measures and Recent Changes

The rise in worldwide importance of Sovereign Wealth Funds (SWFs)—a particular class of significant international investors—that is characterized by state-owned investment funds with huge capital reserves has long attracted the attention of academics researching corporate governance.

These organizations have demonstrated a preference for purchasing listed shares from foreign companies without the need for instant liquidity in their investments.

Many measures have been put forth to assess the transparency and internal corporate governance of SWFs, but only two have gained broad recognition and are considered industry standards.

Michael Maduell and Carl Linaburg devised the first benchmark, the Linaburg-Maduell Transparency Index. The Sovereign Wealth Fund Institute, which makes use of the index, was founded by Maduell.

The second standard is the SWF Scoreboard, sometimes known as "Truman Scores" in honor of Edwin Truman (2008, 2011), who developed and promoted this evaluation instrument.
Both policies place a strong emphasis on how transparent SWFs are when it comes to their internal operations, sharing investment data, and level of political independence from the government that sponsors them.
Truman (2011) constructs the index by combining different components into four categories in order to assess SWF transparency and governance standards in a thorough manner.

1. Structure of the fund, including its objectives, links to the government's fiscal policy, and whether the fund is independent from the countries' international reserves (Bortolotti, Fotak, Megginson, 2014);
2. Governance of the fund, including the roles of the government, the board of the fund and its managers, and whether the fund follows guidelines for corporate responsibility (Bortolotti, Fotak, Megginson, 2014);
3. Accountability and transparency of the fund in its investment strategy, investment activities, reporting, and audits (Bortolotti, Fotak, Megginson, 2014);
4. Behavior of the fund in managing its portfolio and its risk management policies, including the use of leverage and derivatives (Bortolotti, Fotak, Megginson, 2014)

After 2008, Truman added a new transparency and governance metric to evaluate how well each SWF followed the "Santiago Principles," which were set in September of that year by participants in the International Working Group on Sovereign Wealth Funds at a conference in Chile sponsored by the IMF.
Since then, this working group has transformed into the International Sovereign Wealth Fund Forum, which includes 25 host and sponsor nations in addition to the biggest SWFs (Bortolotti, Fotak, Megginson, 2014).

Supported by the SWF Institute, the Linaburg-Maduell Index is based on "ten essential principles" that define how transparent sovereign wealth funds should be to the general public. Based on these principles, each fund is assessed. Each fundamental principle is given a score, ranging from zero (absent) to one (present), with a maximum possible score of 10. According to the SWF Institute, a fund must receive at least an 8 in order to be deemed sufficiently transparent.
In addition, the Economic Freedom Index evaluates a country's degree of capitalism or near to a free-market economy, while the Corruption Perception Index evaluates a nation's perceived honesty, transparency, and freedom from corruption.

Table 1.1 **Transparency, Economic Freedom, and Governance Scores for Fund-Sponsor Countries and Sovereign Wealth Funds**
This tables details the Transparency International 2023 Corruption Perception Index (https://www.transparency.org/en/cpi/2023) value [maximum = 100] and global rank [lowest = 175] and Heritage Foundation 2024 Economic Freedom Index (https://www.heritage.org/index/pages/all-country-scores) value [maximum = 100] and corresponding Linaburg-Maduell Index values from the Sovereign Wealth Fund Index (https://www.swfinstitute.org/research/linaburg-maduell-transparency-index).

Country	2023 Corruption Perception Index Value (Rank)	2023 Economic Freedom Index Value	Sovereign Wealth Fund Name	Linaburg-Maduell Index
Norway	84 (4)	76.9	Government Pension Fund – Global	10
China	42 (76)	48.3	China Investment Corporation	7
Australia	75 (14)	74.8	Australian Future Fund	10
Azeirbajan	23 (154)	61.4	State Oil Fund of Azerbaijan	10
South Korea	63 (32)	73.7	Korea Investment Corporation	8
United States	69 (24)	70.6	Alaska Permanent fund corporation	10

Japan	73 (16)	69.3	Government Pension Investment Fund	9
United Arab Emirates	68 (26)	70.9	Mubadala Development Company PJSC	10
Russia	26 (141)	53.8	National Wealth Fund and Reserve Fund	7
New Zealand	85 (3)	78.9	New Zealand Superannuation Fund	10
Oman	43 (70)	58.5	State General Reserve Fund	4
Qatar	58 (40)	68.6	Qatar Investment Authority	5
Kuwait	46 (63)	56.7	Kuwait Investment Authority	6
Chile	66 (29)	71.1	Chile Pension Reserve Fund	10
Angola	33 (121)	53.0	Fundo Soberano de Angola	3
Canada	76 (12)	73.7	Alberta Investment Management Corporation	10
Kazakhstan	39 (93)	62.1	National Fund	2

Table 1.1 yields many anticipated findings upon scrutiny.

Democracies such as Norway, Australia, Canada, New Zealand, and South Korea typically have very high Corruption Perception Index values, which are consistent with the excellent Linaburg-Maduell Index rankings of their respective SWFs.

On the other hand, nations with generally opaque societies—Kuwait, China, Azerbaijan, Russia, Oman, and Angola—generally receive low marks for perceived levels of corruption, and the transparency of the SWFs they are connected with is likewise deficient.

Nations like New Zealand, the United States, Norway, Australia, and Canada that support free-market ideas and are transparent also have favorable Corruption Perception scores and have funds that are well regarded in terms of transparency. On the other

hand, countries like Kuwait, Angola, China, Russia, and Oman that have closed or state-dominated economies rank poorly on both national and fund-specific indices.
The most surprising findings, meanwhile, come from Azerbaijan, which establishes SWFs with Linaburg-Maduell Index values of 10, despite having poor national scores for economic freedom and perceptions of corruption.
These contradictory findings highlight the fact that a fund's operational disclosure and transparency may not always have to conform to the openness or propensity toward free markets of the country that sponsors it. Alternatively, sponsoring nations may create funds that are not transparently aligned with the larger community they represent and are responsible for managing.

1.7.1 Santiago Principles

For a considerable amount of time, institutional investors involved in cross-border investment operations have been Sovereign Wealth Funds (SWFs). Growth, prosperity, and economic development have been greatly aided by their investments in both capital-exporting and capital-receiving countries.
SWFs play critical roles in improving public finance management, attaining macroeconomic stability, and assisting high-caliber growth projects in their native nations.
Additionally, SWFs play a significant role in diversifying the world's financial markets by providing a special opportunity to adopt a long-term view in investments. This diversity comes in more handy when the economy is struggling or there is financial uncertainty.
The swift amassing of overseas assets in certain nations has resulted in the growth and extension of SWFs, and future forecasts indicate that their influence in global financial markets will only increase.
SWFs are exerting greater influence over corporate governance procedures as a result of their increased allocation of assets to both public and private equity holdings.
The International Working Group emphasizes the significance of proving to home and recipient countries as well as international financial markets that SWF arrangements are

appropriately structured and investments are financially and economically justified, acknowledging the dual role of SWF investments as both advantageous and critical to international markets.

The generally accepted principles and practices (GAPP) guiding SWFs are rooted in the following objectives:

1. Maintaining a stable global financial system and facilitating the free flow of capital and investment (IWC, 2008).
2. Adhering to all relevant regulatory and disclosure requirements in host countries (IWC, 2008).
3. Making investments based on economic and financial risk and return considerations(IWC, 2008).
4. Establishing transparent and robust governance structures that encompass adequate operational controls, risk management, and accountability measures (IWC, 2008).

Purpose

Establishing a framework that incorporates generally accepted norms of governance, accountability, and sensible investment practices for Sovereign Wealth Funds (SWFs) is the goal of the Generally Accepted Principles and Practices (GAPP).

By adhering to these guidelines, this framework seeks to guarantee that SWFs will continue to produce financial and economic advantages for recipient countries, home countries, and the international financial system.

In order to support SWFs' institutional setup, governance, and investment operations while keeping them in line with their policy goals and within the bounds of reliable macroeconomic policy frameworks, the GAPP was created.

It functions as a voluntary framework that has the support of the International Working Group (IWG), whose members are dedicated to putting its practices and principles into effect or aiming to do so.

The GAPP is subject to pertinent international agreements, legal frameworks, and regulatory regulations and can be tailored to countries in varying stages of economic growth. Every GAPP concept is applied in compliance with relevant domestic legislation.

Structured around three main pillars, the GAPP addresses:

1. Legal framework, objectives, and coordination with macroeconomic policies;
2. Institutional framework and governance structure;
3. Investment and risk management framework.

The establishment of a strong institutional framework and governance structure for SWFs is made possible by the prudent application of the first area's principles, which also makes it easier to formulate investment strategies that are in line with the funds' policy objectives.

Given the ever-changing nature of global capital flows and the several phases of SWF development, the IWG concedes that certain SWFs are still in the establishment phase. Therefore, putting some GAPP ideas into practice may be difficult and necessitate a transitional time, especially for more recent SWFs.

GAPP 17, for example, recognizes that recently created SWFs might require some time to reach their intended long-term asset allocation and performance objectives, as well as to provide pertinent information as mentioned in this principle.

Generally Accepted Principles and Practices (GAPP)—Santiago Principles

The Generally Accepted Principles and Practices (GAPP) encompass a comprehensive framework intended to establish standards for the governance, accountability, and investment practices of Sovereign Wealth Funds.

Each principle and subprinciple outlined in the GAPP is geared towards fostering transparency, efficiency, and responsible management within SWFs. Let's break down the key components:

Legal Framework and Disclosure (GAPP 1-2): The legal foundation of an SWF should ensure its integrity and transparency, with key features and relationships disclosed publicly (IWG 2008).

Macroeconomic Coordination (GAPP 3): SWF activities with significant domestic economic implications should be harmonized with national fiscal and monetary policies (IWG 2008).

Funding and Spending Policies (GAPP 4): Clear policies should govern SWF funding sources, withdrawals, and spending, all publicly disclosed (IWG 2008).

Data Reporting (GAPP 5): Relevant statistical data regarding the SWF should be reported in a timely manner to stakeholders, facilitating macroeconomic analysis (IWG 2008).

Governance (GAPP 6-8): SWF governance structures should be robust, with clear roles and responsibilities, appointed by the owner, and acting in the fund's best interests (IWG 2008).

Accountability and Reporting (GAPP 9-13): SWFs should adhere to defined accountability frameworks, preparing annual reports and financial statements audited to international standards (IWG 2008).

Ethical Standards and Third-party Relations (GAPP 13-14): Professional and ethical conduct should guide SWF interactions, with dealings based on economic principles and transparent procedures (IWG 2008).

Compliance and Disclosure (GAPP 15-17): SWF operations in host countries must comply with local regulations, with financial information disclosed to enhance market confidence (IWG 2008).

Investment Policy (GAPP 18-19): Investment policies should align with SWF objectives and risk tolerance, maximizing returns while adhering to sound portfolio management principles (IWG 2008).

Risk Management (GAPP 20-22): SWFs should have robust risk management frameworks, publicly disclosed, with systems in place for monitoring and reporting (IWG 2008).

Performance Measurement and Review (GAPP 23-24): SWF assets and investment performance should be regularly assessed and reported to stakeholders according to defined standards. These principles collectively ensure that SWFs operate transparently, responsibly, and in the best interests of their stakeholders, contributing positively to global financial stability (IWG 2008).

Chapter II — The Essential Role of Alternative Investments

2.1 Definition of alternative investments

"Alternative investments" encompass a broad spectrum of investment opportunities that differ from typical, publicly traded, long-only assets such as stocks, bonds, and cash (often referred to as traditional investments). It is important to realize that the terms "traditional" and "alternative" do not indicate anything special or new to the world of investing. Traditional assets like real estate and commodities, which have been a component of investment strategy for generations, are considered alternative investments.

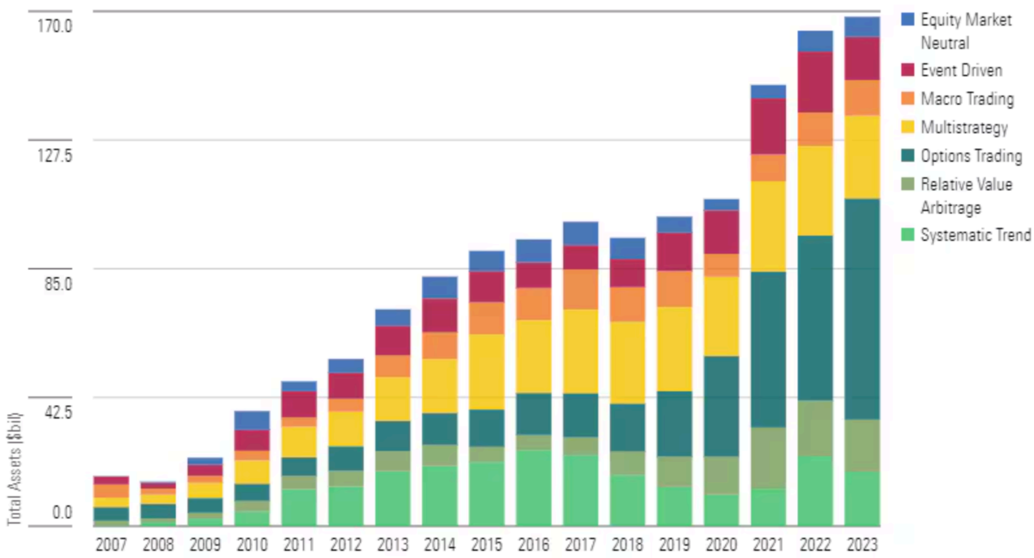
Furthermore, alternative investments comprise non-traditional investment approaches within niche vehicles such as hedge funds and private equity funds.

These funds give managers the freedom to invest in illiquid assets, take short positions, and use leverage and derivatives.

The portfolios of these vehicles may include both conventional (stocks, bonds, and cash) and unconventional assets. Institutional investors and hedge funds have long employed alternative investment strategies; however, normal investors can also access these strategies through mutual funds and exchange-traded funds, which are also referred to as liquid alternatives.

The total assets in US-based alternatives funds as of January 31, 2024, was close to $200 billion. Although that's still not very much, during the last few decades, assets have grown quickly (Arnott 2024).

Graph 2.1 Total Assets in Alternative Fund Categories



Source: Morningstar Direct. Data as of Dec. 31, 2023.

Alternative investments often have many of the following characteristics:

- Narrow specialization of the investment managers (CFA Institute, 2023)
- Relatively low correlation of returns with those of traditional investments (CFA Institute, 2023)
- Less regulation and less transparency than traditional investments (CFA Institute, 2023)
- Limited historical risk and return data (CFA Institute, 2023)
- Unique legal and tax considerations (CFA Institute, 2023)
- Higher fees, often including performance or incentive fees (CFA Institute, 2023)
- Concentrated portfolios (CFA Institute, 2023)
- Restrictions on redemptions (i.e., “lockups” and “gates) (CFA Institute, 2023).

Supplementary techniques to typical long-only positions in stocks, bonds, and cash are provided by alternative investments. These investments fall into five main categories: infrastructure, real estate, natural resources, hedge funds, and private money. Alternative investment strategies typically have different risk profiles from traditional long-only investments and are actively managed with the goal of generating returns.

In contrast to traditional investments, many alternative investments have similar features, like lower liquidity, less regulation, less transparency, greater fees, and limited, possibly problematic historical data on risk and return. Furthermore, they may include a large amount of leverage and frequently involve complicated legal and tax implications. These investments have the ability to diversify portfolios, which can increase risk-adjusted returns and attract investors.

Three main ways exist for investors to access alternative investments: co-investment in a fund's portfolio firm, direct investment in a project or company (like real estate or infrastructure), or fund investment (like in a private equity fund).

Investors evaluate operational, financial, counterparty, and liquidity risks prior to making an investment by conducting due diligence that is specific to the investment strategy.

The evaluation of the manager's ability to carry out the suggested investment plan, the establishment of suitable organizational structures, rules for handling investments, operations, risk, and compliance, and the confirmation that the fund terms are acceptable all depend on the results of the fund due diligence. Hedge and private equity funds, among other alternative investments, frequently use a partnership structure in which limited partners have fractional interests and the general partner manages the company (CFA Institute, 2023).

In addition to an incentive fee based on realized earnings, the general partner usually receives a management fee based on assets under management or committed capital. Various provisions, including hurdle rates, high-water marks, lockup and notice periods, and clawback provisions, are often detailed in the Limited Partnership Agreement (LPA) (CFA Institute, 2023).

Returns to investors are impacted by the fee structure, where allocations to general partners and limited partners are made using the waterfall distribution approach.

Strategies are a typical way to categorize hedge funds; examples include equity hedge, event-driven, relative value, macro, and CTA strategies. Smaller investors without the means to choose individual hedge funds might diversify their portfolios by investing in funds-of-hedge funds.

Funding for businesses that comes from sources other than the public stock or debt markets is referred to as private capital. While loans or other forms of debt constitute private debt, equity investments make up private equity.

Investing in publicly traded or privately held businesses with the goal of taking them private is known as private equity. Leveraged buyouts and venture capital are important tactics, and trade sales, initial public offerings, and recapitalization are the main methods of exit.

Private debt refers to a range of financing instruments extended to private organizations, such as mezzanine and direct loans, as well as customized plans like CLOs and real estate debt.

Timberland, farms, and commodities (both soft and hard) are all considered natural resources. Commodity investing can involve actual commodities or producers, frequently through the use of commodity derivatives like swaps or futures.

Although income can be obtained from collateral, returns from commodity investments are dependent on price fluctuations and do not include income streams like dividends or interest. Timberland is seen as a sustainable investment that helps reduce risks associated with climate change and generates income via the sale of trees and wood products.

Farmland, like timberland, generates income from harvest quantities and agricultural commodity prices but lacks the production flexibility of timberland due to the necessity of harvesting farm products when ripe.

Real estate consists of residential and commercial sectors, with residential real estate dominating about 75% of the global market. Commercial real estate includes office buildings, shopping centers, and warehouses, featuring unique characteristics such as heterogeneity and fixed location. Real estate investments can be direct or indirect, public or private, and in equity or debt.

Infrastructure investments involve real, capital-intensive assets designed for public use, offering essential services like airports, healthcare facilities, and power plants, often funded through public-private partnerships.

Social infrastructure assets focus on human activities like education, healthcare, and social housing, emphasizing infrastructure provision, operation, and maintenance.
The asset development stage is another way to categorize infrastructure expenditures; new infrastructure construction is referred to as greenfield, whilst existing infrastructure is referred to as brownfield.
Alternative investment performance evaluation is difficult because of asymmetric risk-return profiles, opaqueness issues, illiquidity, complex fee structures, and complicated product features.
It may be necessary to employ a variety of ratios, such as the Treynor, Sortino, and Sharpe ratios, in addition to special metrics like the internal rate of return (IRR) for real estate and the cap rate for private equity, in order to fully account for the features of alternative investments.
Awareness of biases including survivorship and backfill biases is necessary when comparing alternative investments to indexes, and redemption regulations and lockup periods present further difficulties for performance evaluation.
Custom fee arrangements, such as fee discounts, unique share classes, and different charge structures, must also be taken into account by analysts as they may have an impact on fee and performance estimates (CFA Institute 2023).

2.2 Alternative Investments and Institutional investors

Distributions from institutional investors' portfolios are gradually being reallocated to a variety of alternative asset classes, including as infrastructure, real estate, hedge funds, private equity, and natural resources.
Over the last ten years, changes in the financial intermediation landscape have resulted in the growth and stabilization of private markets.
Since 2009, corporations have sourced more external capital from private markets than from public capital markets, according to Morgan Stanley (Mauboussin, Callahan 2020).

Data from McKinsey’s Global Private Market Review indicate that assets under management (AUM) reached $13,1 trillion as of June 30, 2023 and have grown nearly 20 percent per annum since 2018.
In a larger perspective, statistics show that over the previous ten years, fundraising has increased threefold due to the structural demand from institutional investors.
There is still little agreement on what motivates large institutional investors to reallocate their portfolios from traditional asset classes like public equity and debt to alternative asset classes, despite the body of literature addressing notable changes in investment patterns and the notable rise of alternative asset classes.
As a result, this move toward alternatives has prompted the following questions: What factors affect the way institutional investors allocate their portfolios? Which investment approaches are they most likely to take? To what extent do they incorporate alternative asset classes into their overall portfolio strategy? What issues with valuation come up when they add alternative assets to their portfolios? There have been a range of responses to these queries. Investor exposure to alternative assets and the connection between institutional features and performance have been the subject of much empirical investigation. (Andonov 2022).
On one side, a multitude of researchers offer evidence suggesting that attractive risk-adjusted returns and diversification serve as primary drivers for investors seeking to expand their allocations to alternative investments (Ivashina and Lerner 2018; Raugh 2009).
Theories explaining the benefits of increasing allocations to alternative investments have looked at the function of alternative asset classes including commodities and real estate's alluring inflation-hedging qualities, especially in light of long investment horizons and liabilities. (Amenc 2009).
In contrast to literature discussing optimal portfolio allocation to alternative investments, several papers have concentrated on alterations in securities laws, which have significantly facilitated institutional investments in private firms (de Fontenay 2017).

More specifically, the passage of the National Securities Markets Improvement Act increased the supply of private capital available to late-stage startups and led to a sharp decline in IPOs in the early 2000s (Ewens and Farre-Mensa 2020).
Conversely, numerous studies delve into the added value of private equity (PE) investments, demonstrating that PE can often serve as a crucial component within the strategic, long-term portfolios of institutional investors (Biesinger et al. 2020).
Alternatively, some researchers explore whether peer firms influence a firm's investment policy. For instance, Begenau, Liang, and Sirwardane discover that a significant portion of the cross-sectional heterogeneity in the transition to alternatives cannot be attributed to pension fund characteristics.
Instead, they reveal that investment consultants account for nearly 25% of the variation in pensions' adoption of alternatives, suggesting that pensions are more inclined to invest in alternatives if their peers do likewise (Begenau 2022).

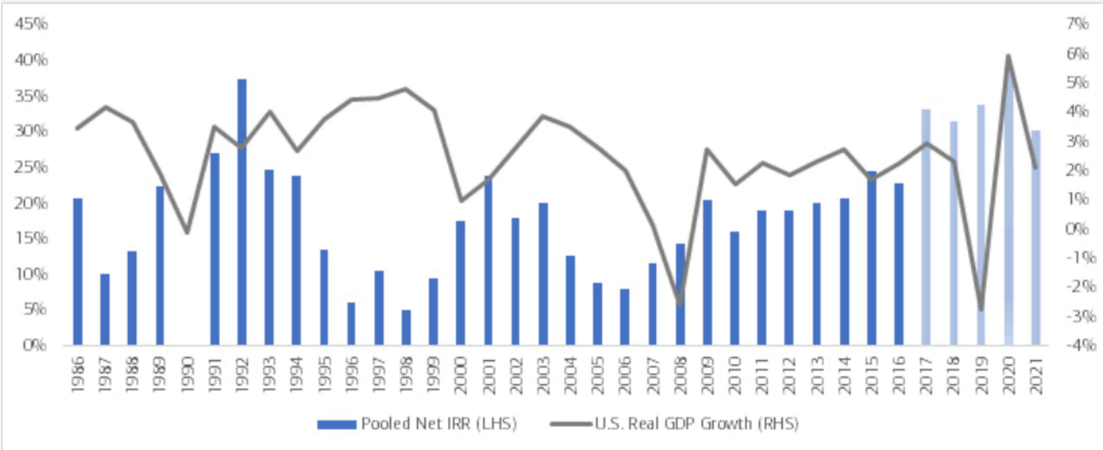
2.3 Alternative Investments across market cycles

There is a sense of hesitancy among many investors due to the increased volatility in financial markets and the general macroeconomic uncertainties.
With alternative investment techniques being inherently illiquid, questions remain about whether it is fortunate to allocate capital to them.
To completely appreciate the substantial return premiums and diversification advantages linked with this asset class, however, historical data emphasizes how crucial it is to keep an allocation to alternatives constant across market cycles, including downturns.
The opportunity costs of losing out on market rallies can hinder long-term investing success, and it can be difficult to time the markets efficiently.
The benefits of staying in the market and the dangers of timing it are equally relevant to alternative investments. Moreover, attempts to schedule investments opportunistically are made more difficult by the less liquid character of these tactics.
In the context of Private Equity (PE), for example, investors' ability to enter and exit the market strategically is limited by the illiquidity and contractual commitments associated with multi-year investment periods (Merrill Lynch 2020).

Investors may have the discretion to determine when they commit capital; however, they lack control over the timing of its deployment by the Private Equity fund manager or the manager's decision to exit an investment .

Despite that, a fund manager’s ability to be patient and discerning with respect to capital deployment is a key element of the value he or she delivers.

Graph 2.2 Returns of U.S. PE Funds by vintage year versus Real GDP growth



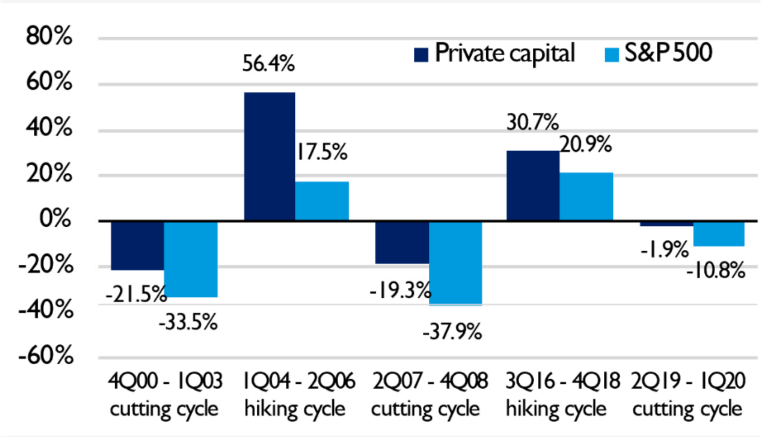
Source: Cambridge Associates, Federal Reserve Bank of St. Louis, through 12/31/21. Light blue bars are from vintage years that are too recent to be considered seasoned and should therefore not be viewed as necessarily indicative of where ultimate performance will settle.

Table 2.1 20-Year annualized performance of private market strategies versus U.S. Equities and Fixed Income

July 1, 2002 - June 30, 2022	**20-Yr Internal Rate of Return**
Private Equity	**13.7%**
Venture Capital	**15.8%**
Private Credit	**9.9%**
Real Estate	**8.7%**
S&P 500	**9.1%**
US Aggregate Bond	**3.6%**

Source: Cambridge Associates, eVestment, Bloomberg. Private Equity, Venture Capital, Private Credit and Real Estate returns reflect net annualized returns using Cambridge Associates benchmarks

Graph 2.3 Private Markets Performance versus the S&P500 during FED Hiking & Cutting cycles



Source: BofA Research Investment Committee, Preqin

When compared to public equities and fixed income strategies, private market strategies have continuously produced returns that are competitive over a number of decades. Including Private Credit, Real Estate, Venture Capital (VC), and Private Equity, these strategies have outperformed the S&P 500, with the exception of Real Estate, which has lagged slightly throughout the 20-year period from Q2 2002 to Q2 2022.
Interestingly, the lower volatility that has allowed Private Market strategies to outperform has added to the attractiveness of their relative risk-adjusted returns.
Particularly relevant in the current market climate, private market techniques have proven resilient during cycles of both Federal Reserve interest rate hikes and cuts.
Furthermore, from money created during recessions, some private market techniques have demonstrated strong return. For example, American buyout fund vintages from recession-related eras have generally produced competitive returns.
This data emphasizes the value of vintage year diversification, particularly the dedication to Private Equity strategies during times of economic and financial turbulence, even though previous success does not guarantee future results (Merrill Lynch 2020).

Hedge Funds May Also Benefit From Higher Rates

For hedge funds, the decade following the Global Financial Crisis (GFC) presented challenges. The current macroeconomic environment, however, may present a more favorable investment outlook for this asset class; historical tendencies suggest that higher interest rates may increase the potential for alpha production and hedge fund returns.

This idea is supported by recent evidence. In the past year, hedge funds as a group generated returns of about 11,01% despite difficulties (HFR 2024).

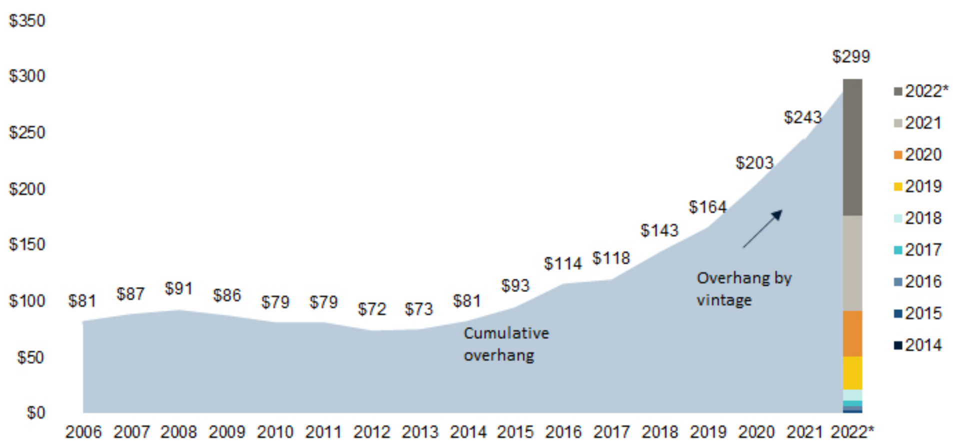
Numerous investors view the asset class's diversification attributes as affirmed over the past year and plan to persist in utilizing Hedge Funds to enhance portfolio outcomes.

Potential Opportunities And Risk Considerations For Qualified Investors

Various Alternative Investment methods inside Private Markets and Hedge Funds show significant potential against the current macroeconomic uncertainties. In particular, Private Market funds have a lot of dry powder, or quickly available cash, which gives them the ability to grab new opportunities.

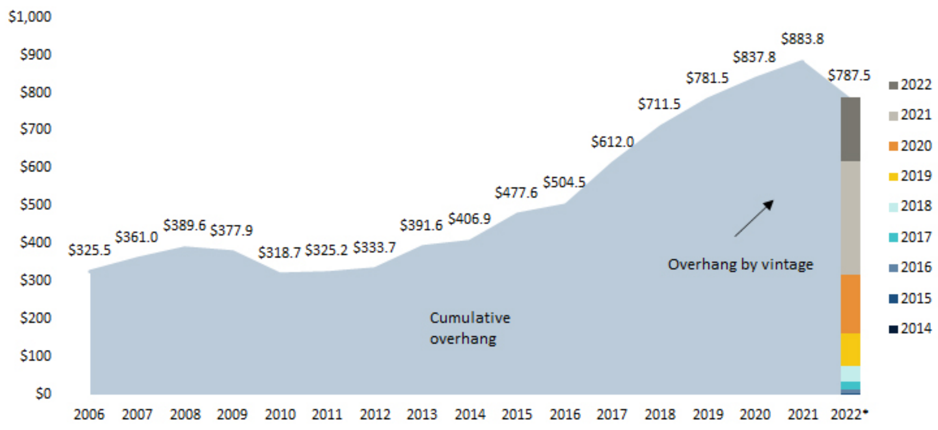
Fund managers in the Private Markets can act as liquidity providers and perhaps take advantage of discounted valuations if they have patient money.

Graph 2.3 U.S. Venture Capital Dry Powder



Estimate. Source: PitchBook. As of 9/30/22

Graph 2.4 U.S. Private Equity Dry Powder



Estimate. Source: PitchBook. As of 9/30/22

In addition, a number of alternative investment strategies have benefited from the current environment, which is marked by high interest rates, inflation, geopolitical unpredictability, and increased volatility in the equity and fixed income markets. These strategies, in particular, are well-known for having weak correlations with conventional asset classes (Merrill Lynch).

Private Credit

<u>Opportunity</u>: In comparison to typical fixed income methods, rising short-term interest rates have significantly increased return prospects, especially when combined with shorter periods. The returns on new private loan transactions reached low to mid-teens by the end of 2023. Direct lenders are now the go-to lenders for many businesses and private equity sponsors because of structural reasons.

Interest coverage has shrunk in tandem with rising rates, but overall it is still manageable, and default rates are still low. Even though legacy issues may remain in current Private Credit portfolios, new capital sources may find strong prospects in this setting.

<u>Risk Considerations</u>: An unanticipated decline in interest coverage; a serious economic crisis that increased the default rate, particularly for private middle market debtors.

Special Situations and Distressed

Opportunity: Due to significant fiscal and monetary stimulus, the potential landscape for distressed assets and special situations was relatively limited in 2022–2023. Distressed assets may also spread quickly if the credit situation is difficult for a prolonged amount of time (for example, due to unanticipated inflation, interest rate increases, or a recession that is worse than projected). Given that businesses mostly prolonged their maturities in the accommodating climate of 2021, the opportunity set is anticipated to materialize more slowly than in previous cycles.

Risk Considerations: A return to an interest rate dynamic that is lower for longer; in the market for syndicated leveraged loans, weakening covenant packages make it challenging to start debt restructurings.

Private Equity

Opportunity: Similar to public equities, private equity faced issues in 2023 due to rising interest rates and inflation. As a result, there were fewer exit opportunities and a downturn in deal activity. However, the approach offers a number of levers to adjust to the changing environment, like concentrating on industries or companies with tangible assets that are economically resilient. The rise of Private Credit has also kept alive an essential funding stream for sponsors.

Looking ahead, 2024 may present a more favorable environment for the approach, with the Fed's rate of tightening probably slowing, bond yields falling at the start of the year, and the valuation difference between public and private markets closing. Beyond the possibility of improving sentiment, structural forces will keep pushing private equity to unprecedented heights.

Increased institutional investor allocation is one structural factor that may be driving PE. Endowments, pension funds, and other big institutions are increasingly allocating a portion of their portfolios to PE because of its potential for higher returns and benefits related to diversification.

The growth of the PE business on a worldwide scale, with new companies emerging and established ones expanding overseas, could be another. Due to increased competition for deals brought about by this larger pool of money, PE valuations may rise.
Risk Considerations: A significant economic downturn could have an effect on portfolio companies already in existence. A reduction in the availability of Private Credit could obstruct a vital source of funding for the strategy. Increasing financing costs could put equity returns at risk and/or require larger equity involvement in transactions.

Venture Capital

Opportunity: After the intense climate of 2021, which strongly benefited founders, limited partners (LPs) are once again at the forefront of the trend.
It's expected that deals will be made today with more enticing conditions and admission prices. Investors anticipate a rise in venture debt and structured equity techniques in the near future. As deal-making gets back up and animal spirits are reignited, the opportunity set for VC vintages during this reset period for the strategy—which is anticipated to play out over 2023–2024—may be historic.
Risk Considerations: The market may hold onto the high valuations paid in 2020–2021 for a while, delaying the process of adjustment; more increases in interest rates may cast doubt on valuations and prevent the market for initial public offerings from opening.

Hedge Funds – Global Macro

Opportunity: In the post-pandemic age, global macro tactics have prospered in the new paradigm of the market. Due to increased volatility in all asset classes, ongoing factor reversals, changes in international monetary policy, and unstable inflation dynamics, the opportunity set is expected to continue to be profitable.
Most importantly, Global Macro trades in very liquid asset classes and has traditionally shown minimal correlations to conventional stock and fixed income strategies, providing significant portfolio utility.
Risk Considerations: Return expectations may be tempered by the return of low-volatility periods marked by little movement in interest rates or currency values.

Hedge Funds – Equity Hedge

Opportunity: Anticipated dispersion combined with high economic uncertainty will create an attractive opportunity set. Particularly, equity market agnostic techniques might be most suited in this setting. When it comes to portfolio design, a portion of traditional long-only investments can be allocated to these funds, which can assist lower portfolio beta and possibly raise alpha and provide distinct equity risk.

Risk Considerations: External shocks to the financial system; a discernible increase in the correlation between stocks; a decrease in the dispersion of a particular stock.

2.4 Alternative Investments Strategies

Alternative strategies are used by investors to achieve a variety of goals, including as reducing downside risk, gaining access to specialized market niches, or increasing profits. However, rather than being used to capture overall market performance, these tactics are frequently applied in a manner similar to that of hedge funds.

Diversifiers include alternative techniques such as multi-strategy, event-driven, options-trading, stock market-neutral, and relative value arbitrage. To offer a varied source of long-term returns, these strategies combine conventional market risk variables with unconventional or alternative risk factors.

The most common strategies in this category include relative value arbitrage, event-driven strategies, and stock market-neutral strategies. These strategies usually show little reaction to changes in the equity market. Instead of betting against the market as a whole, they take long and short positions on specific assets. Opportunistic trading strategies, such as systematic and macro trading, typically place a higher priority on absolute returns and strive for favorable performance in all market conditions while placing a strong emphasis on capital preservation.

These strategies' managers change their long and short positions opportunistically in response to changes in the market. Although opportunistic funds frequently have lower drawdowns, they also require more work. Managers often alter or hedge their positions in anticipation of a market reversal or continuation.

In order to monitor a variety of exposures, complex risk-management systems are frequently used due to the potential mismatch between market expectations and reality.

Advantages and Risks of Investing in Alternative Investments

The two main benefits of alternative investing are diversification and the possibility of outperforming the overall equities market at specific times. Strategies that are systematic trend and equity market neutral are particularly noteworthy for diversifying a portfolio.

The two categories show a steady downward trend in correlations with the total equity market during the last three years, with rolling three-year correlations of 0.6 or less (Arnott 2024).

Relative value arbitrage, event-driven, options trading, macro trading, and multi-strategy trading are the other four alternative categories that have typically moved more in tandem with stock prices.

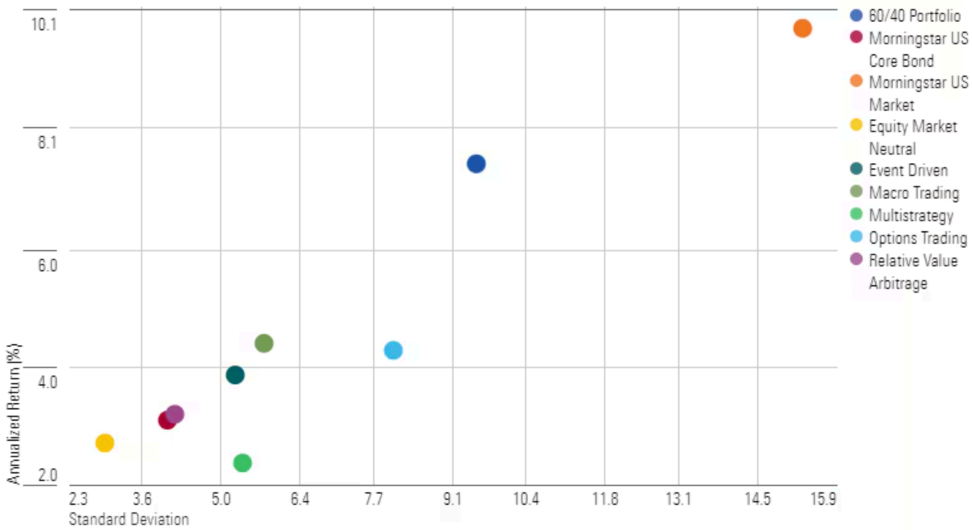
Graph 2.5 Rolling Three-Year Correlations vs. Morningstar Market Index

Source: Morningstar Direct. Data as of Jan. 31, 2024.

It is also helpful to take into account the particular betas of the categories, as these provide information about how sensitive alternatives are to changes in the equity market. All categories, with the exception of options trading, have shown rolling three-year betas against the Morningstar US Market Index of 0.35 or less over the last ten years.

Alternative funds have not shown themselves to be the best performers in terms of yielding returns. The majority of alternative categories have performed worse than equities and a 60/40 portfolio made up of stocks and investment-grade bonds, as shown in the scatterplot below. Although risk levels have decreased, they have usually not decreased to the point where risk-adjusted returns are compelling (Arnott 2024).

Graph 2.6 Trailing 20-Year Risk and Return: Alternative Fund Categories and Other Assets



Source: Morningstar Direct. Data as of Jan. 31, 2024

On the positive side, alternatives funds have generally courted less downside risk than the overall equity market, as shown in the table below

Table 2.2 Drawdown Stats for Alternatives Funds and Other Assets (Since 2004)

Index/Morningstar Category	Std Deviation	Max Drawdown (%)	Worst Quarter (%)
60/40 Portfolio	9.52	-30.25	-11.93
Morningstar US Core Bond	4.05	-17.15	-6.00
Morningstar US Market	15.30	-50.76	-22.54
Equity Market Neutral	2.94	-6.56	-3.46
Event Driven	5.25	-22.94	-7.99
Macro Trading	5.76	-29.57	-12.95
Multistrategy	5.38	-21.66	-8.73
Options Trading	8.05	-33.81	-16.03
Relative Value Arbitrage	4.18	-17.24	-6.82
Systematic Trend	n/a	-20.26	n/a

Source: Morningstar Direct. Data as of Jan. 31, 2023

How to Invest in Alternatives

Hedge funds are among the many alternative strategies that are only available to wealthy investors. These investment vehicles are often only available to accredited investors who meet certain requirements, such as having a net worth greater than $1 million or having income that has exceeded $200,000 in each of the previous two years and is expected to exceed $200,000 this year.

On the other hand, mutual funds and exchange-traded funds (ETFs) are the most feasible ways for those with little resources to participate in alternative investment techniques (Arnott 2024).

The table below shows a subset of alternatives funds with above-average Morningstar Medalist Ratings.

Table 2.3 Highly Rated Alternatives Funds

Fund	Ticker	Morningstar Category	Morningstar Medalist Rating	Minimum Investment ($)	Annual Report Net Expense Ratio (%)
AQR Diversified Arbitrage N	ADANX	Relative Value Arbitrage	Bronze	2,500	1.55
BlackRock Event Driven Equity Inv A	BALPX	Event Driven	Bronze	1,000	1.37
BlackRock Systematic Multi-Strat Inv A	BAMBX	Multistrategy	Bronze	1,000	1.20
BlackRock Tactical Opportunities Inv A	PCBAX	Macro Trading	Bronze	1,000	1.13
Calamos Market Neutral Income A	CVSIX	Relative Value Arbitrage	Bronze	2,500	1.20
JHancock Diversified Macro A	JDJAX	Macro Trading	Bronze	1,000	1.64
JPMorgan Hedged Equity R5	JHQPX	Options Trading	Silver	0	0.43
JPMorgan International Hedged Equity R5	JIHYX	Options Trading	Silver	0	0.45
Parametric Volatil Risk Prm-Defensv I	EIVPX	Options Trading	Bronze	0	0.49
The Merger Fund A	MERFX	Event Driven	Bronze	2,500	1.50

Source: Morningstar Direct. Data as of Jan. 31, 2024.

Smart readers will probably notice two important details about the money that are emphasized. First off, the dearth of high-conviction investment options in this space is highlighted by the lack of alternative funds with Gold Medalist Ratings.
Second, relative to more traditional assets, alternative investments are significantly more expensive due to expenditure ratios that significantly exceed average.

<u>When Do Alternative Investments Perform Best?</u>

Theoretically, when there is market turbulence or dislocation, alternative investments stand to gain. Alternative funds have generally done a great job of carrying out this responsibility. They saw somewhat favorable returns throughout the early 2000s tech stock collapse and the bond and stock market bear market of 2022. But even while they performed better than a traditional balanced portfolio made up of investment-grade bonds and U.S. stocks in 2008 and the first quarter of 2020, they still saw losses (Arnott 2024).

Table 2.4 Annualized Returns During the Best Times for Alternatives Funds

Index/Morningstar Category	2000 - 2003	2008	Q1 2020	2022
60/40 Portfolio	-4.16	-19.83	-11.06	-16.85
Morningstar US Core Bond	10.32	5.97	3.2	-12.99
Morningstar US Market	-13.92	-37.03	-20.57	-19.43
Equity Market Neutral	4.84	-3.23	-2.98	6.04
Event Driven	6.99	-15.55	-7.9	-1.32
Macro Trading	2.47	-22.12	-5.02	-2.28
Multistrategy	-4.98	-16.33	-8.74	-3.00
Options Trading	-0.45	-26.54	-9.65	-9.55
Relative Value Arbitrage	8.58	-13.59	-5.49	-3.86
Systematic Trend		10.19	0.17	14.53
Average (Alternative Categories)	2.91	-12.45	-5.66	0.08

Source: Morningstar Direct. Data as of Jan. 31, 2024.

2.5 Investment cycle of alternatives and secondary funds

Most alternative investments are long-term in nature; they frequently cover an entire cycle that might last for almost ten years and involve several aspects of the financial system.

Although the basic procedures for these investments are largely the same for all options, there is a great deal of variation in the length of time spent on each phase and the techniques used.

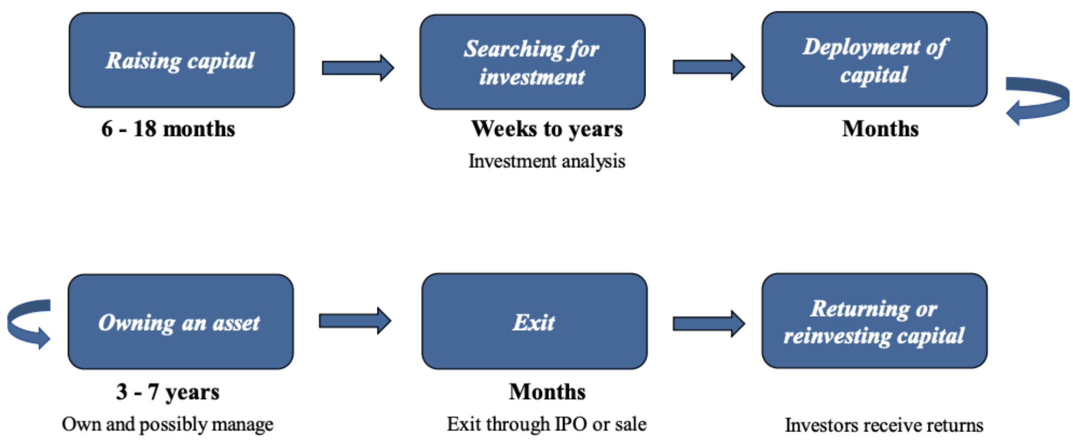
The main requirement of making alternative investments is the deployment of funds, and the time of these deployments varies depending on the type of asset. For example, the longest length is usually linked to private equity investments, where buying a whole company or a significant portion of one might take several months, even if the deal doesn't work out.

Investments in hedge funds that concentrate on liquid securities that are traded on exchanges, on the other hand, include shorter time frames—from milliseconds to days. Exiting such assets can also happen quickly—in a matter of microseconds—or slowly—up to a year.

Since alternative asset funds are often closed-end, investors are unable to withdraw funds because of the illiquidity of their investments. On the other hand, investors can ask for a return of their capital at any moment with open-ended fund structures.
Usually, before the fund becomes closed, it goes through a 6 to 18 month fund-raising phase where it receives contributions from investors. Then, the investment procedure starts when the fund finally closes.
Hedge funds, on the other hand, usually use open-ended structures, which allow for simultaneous investment and capital raising. Investors who wish to divest from closed-end funds may choose to sell their investments to secondary funds that specialize in these kinds of deals. (World Economic Forum, 2015).
Due to the emergence of an active secondary market during the last 20 years, investors are now able to sell their private equity fund holdings. In a "over-the-counter" market, a limited partnership stake is transferred from the selling Limited Partner ("Seller") to the new owner ("Buyer"), who takes on all rights, liabilities, and outstanding commitments related to the transferred money.
Usually, approval for this transfer procedure is required from the General Partner ("GP"), who oversees the management of the private equity fund.
Private equity funds publish reported valuations that impact secondary market securities pricing. These valuations are typically published on a quarterly basis and are stated as a percentage of the reported Net Asset Value (NAV).
The buyer and seller often agree on the valuation date, also referred to as the "reference date," at the outset of the transaction (Björnsson, Hannesson 2022).
In order to settle cash flows (such as capital calls and distributions) between the buyer and seller before to the closing date, this reference date, which matches the NAV valuation date, is utilized. After the reference date, cash flows are taken into account for determining the final purchase price at closing. Capital calls are normally compensated to sellers; on the other hand, dividends are kept by the seller and deducted from the buying price. The buyer is often impacted by modifications to the underlying fund interests' valuation, but the ultimate payment is unaffected.

Thanks to ten years of strong volume growth in the venture capital, real estate, and infrastructure sectors of the private equity secondary market, private equity investors have an abundance of liquidity choices available to them today (CAIA, 2016).
Investment bank Evercore's FY 2023 Secondary Market Survey Results show that transaction volume in the secondaries market increased to $114 billion in 2023 from $103 billion the previous year. In terms of transaction volume, the year was the second-largest ever during that time (Zhang 2024).
The secondary market offers benefits to individual institutional investors as the need for alternatives keeps growing. As a result, funds that experience shocks to their liquidity, for example, may sell their holdings.
Comparing the secondary market to alternative investments, it is still rather tiny. Consequently, the secondary market's ability to satisfy everyone's needs may be constrained if large liquidity shocks impact a large number of pension funds (Björnsson, Hannesson, 2022).

Image 2.1 Closed fund investment cycle for private equity



Source: World Economic Forum, 2015

2.5.1 Interest Rates and Their Impact on Alternative Investments

The Federal Reserve's approach of guiding the economy heavily relies on interest rates. But when these rates change, you have to wonder what it means for your investments. Understanding the Fed's reasoning for raising or lowering interest rates, as well as the relationship between interest rates and alternative investment possibilities, becomes critical for investors.

What then motivates the Fed to change interest rates?

The Federal Reserve, or Fed as it is more widely known, is the US central bank. Maximizing employment, preserving price stability, and guaranteeing reasonable long-term interest rates are among its key goals.

To accomplish these aims, the Fed carefully examines the status of the economy and adjusts interest rates as needed.

Here's why they may raise or lower interest rates:

Economic Expansion and Employment

Lower interest rates are a possible decision made by the Federal Reserve during recessions or times of weak economic growth. This measure aims to reduce borrowing rates for both enterprises and consumers, so spurring investment, consumption, and employment growth. This can therefore promote economic expansion and lower unemployment rates.

Conversely, the Fed may decide to raise interest rates if the economy begins to overheat and inflationary pressures increase. A higher interest rate helps keep the economy from overheating and prevents the appearance of high inflation by moderating excessive borrowing and spending. Achieving a harmonious balance between promoting growth and reining in inflation is the goal here.

Inflation Management

Low inflation that doesn't go away might be dangerous for the economy because it makes people less likely to invest and spend. The Fed may cut interest rates to encourage borrowing and spending during times of mild inflation or deflationary trends, which will bring inflation closer to the target rate, usually around 2%.

On the other hand, the central bank may opt to raise interest rates in order to make borrowing more expensive if inflation exceeds the Fed's target and threatens sustainability. Through cutting back on expenditure and investment, this strategy can lower prices and return inflation to target levels.

Financial System Stability

In periods of economic turmoil, as the COVID-19 pandemic or the 2008 financial crisis, the Federal Reserve may implement a sharp reduction in interest rates in an effort to stabilize the financial system. According to New Direction Company (2023) reduced interest rates save troubled banks money on borrowing and promote lending, preventing a systemic collapse.

According to New Direction Company (2023), the Federal Reserve may act proactively to raise interest rates when asset bubbles or excessive risk-taking put the stability of the financial system in jeopardy. Increased rates encourage a more cautious attitude to the financial markets and make speculative investments less appealing.

International Considerations

Always according to New Direction Company (2023), decisions made by the Federal Reserve on interest rates have the potential to impact foreign exchange rates and international financial markets in addition to domestic markets. The Federal Reserve may periodically adjust interest rates in order to maintain or restore international trade balance or to control currency exchange rates.

What effect do interest rates have on Alternative Investments, then?

Developing effective investment plans requires an understanding of how interest rates impact various asset kinds. The effects can differ significantly throughout markets and asset classes; some may be largely unaffected by changes in interest rates, while others may exhibit an opposite response.

Real Estate

Mortgage rates usually decrease in tandem with low interest rates, which makes borrowing money for real estate transactions more cost-effective. The increased demand for properties as a result drives up real estate values. On the other hand, higher interest rates result in more borrowing costs for prospective homeowners, which may reduce demand and drive down real estate values. Higher borrowing rates, however, can lead to a rise in the demand for rental homes as fewer people choose to buy homes.

Private Equity

Always New Direction Company borrowed money is frequently used by private equity firms to finance investments and acquisitions. Reduced borrowing costs due to lower interest rates encourage these businesses to look for new business opportunities and acquisitions. Lower interest rates can cause companies' valuation multiples to increase because in a low-rate environment, investors are ready to pay more for projected future cash flows.

However, higher interest rates might also make borrowing more expensive, which would limit the amount of money that can be invested profitably and encourage investors to be more cautious. Raising interest rates may also result in lower valuation multiples, which could affect the possible profits on private equity investments.

Private Lending

When interest rates are low, private lending becomes an appealing choice for investors looking for higher returns. Private lenders stand to benefit from larger returns if interest rates climb. More borrowers might choose private loan choices over traditional banks as a result of this rate increase. Higher interest rates do, however, also increase the chance of borrower default, which calls for careful underwriting procedures.

Precious Metals

According to New Direction Company, because precious metals, particularly gold, provide security against inflation and depreciating currency values, they perform very well during times of low interest rates. However, holding assets that do not generate income becomes more expensive when interest rates rise, which may lower the market demand for precious metals. Interest rate rises are frequently associated with central banks' attempts to control inflation. Investor interest in precious metals, which serve as a store of wealth during periods of inflation, may increase as interest rates rise.

Interest rates have a major impact on a variety of financial and investment products, including precious metals, real estate, private equity, and private lending, in addition to traditional assets.

The Federal Reserve's interest rate decisions have a significant impact on how investments behave. As a result, it is critical for investors to keep an eye on these choices and understand how they could affect alternative investment opportunities including precious metals, real estate, private equity, and private financing according to New Direction Company.

2.5.2 Inflation and Alternative Investments

One important economic indicator that has a big impact on your investments is inflation. It indicates a general upward trend in prices for products and services over time. Your money loses value as inflation soars, making it less valuable in the face of growing prices.

As a result, investors are always looking for ways to protect their investments from the devaluing impacts of inflation and shrinking purchasing power. One popular tactic is to use alternative investments.

When it comes to stability, some investment options can be better than regular equities. It is essential to comprehend the particulars of every asset class and the ways in which changing surroundings might affect them.

As was shown during the epidemic, inflation is characterized by a widening of prices for goods and services, which can be caused by a variety of variables including changes in monetary policy, increased government spending, and currency printing.

Because inflation reduces the purchasing power of your income or savings, it can have a big effect on your assets. For example, if you make $100 today and inflation is 4% annually, you will only be able to afford $96.

The Impact of Inflation on Alternative Investments

The impact of inflation on returns might provide difficulties for investors who are trying to reach their financial goals. To properly control inflation's influence on your portfolio or retirement income, you must include inflation into your investing strategy.

Your real estate investment may lose value due to inflation since it raises interest rates, which makes it more expensive for buyers to obtain mortgages.

Consequently, property values are expected to decrease as inflationary pressures increase. Alternative investments perform particularly well during inflationary times since many of these assets are in high demand despite price swings. Properties like as oil, agriculture, shipping, and infrastructure can do very well in an inflationary environment.

What Assets do Investors Consider In Inflationary Times?

There is historical evidence that certain commodities, including gold, oil, and agriculture, perform very well during periods of inflation. The cost of these commodities and the final goods made from them typically increase due to inflation. When prices rise and are transferred to consumers, raw resources used to produce consumer staples also often prosper.

Even while real estate has traditionally performed well, it is still something to carefully evaluate, especially given the extended duration of historically low interest rates. Interest rate increases can put downward pressure on prices, while low rates can also significantly raise demand for homes.

This is due to the fact that rising rates reduce the purchasing power of borrowers, which may result in a decline in the affordability of homes. As a result, it's imperative to approach real estate investments prudently, particularly in light of the climate where interest rates fluctuate.

The Case for Real Assets

Real assets are an inflation hedge, which is important to keep in mind when analyzing how inflation may affect the portfolio in the future. These assets provide portfolio diversification advantages due to their low correlation with stocks and bonds.

Returns on investments are at risk from inflation. Even while you want your investments to increase in value over time, your purchasing power will decrease if prices rise more quickly than the returns they produce.

Historically, real assets like gold and oil have shown to be good inflation hedges because, in times of severe inflation, when money loses value, they tend to show little correlation with stock prices or financial markets.

Sometimes it helps to get back to the basics and take everyday necessities into account while assessing real assets. Gas, water, electricity, and internet connectivity are examples of indispensable necessities, meaning that demand for these services is expected to continue even in a down economy (Young, 2022). Regardless of the price increases these goods undergo during inflationary times, consumers are ultimately responsible for paying the costs, which are nonetheless necessary. Regardless of the state of the economy, transportation is an essential industry to look into when thinking about hard assets because people and materials need to be transported around the world on a regular basis.

Why Have an Alternative Investment Strategy?

As was previously said, inflation is a real danger to the investment portfolio's long-term worth. Nonetheless, alternative investments provide a way to protect against inflation and better position oneself for long-term financial security.

In addition to providing protection against inflationary declines in wealth, these alternative investments have the potential to yield larger returns than more conventional options such as bonds and equities. To put it simply, inflation is a fact of life that we have to deal with. It's a constant force whose effects must be lessened by taking preventative action. Although there are a number of ways to protect the portfolio against inflation, each person may choose a different course of action. However, what unites all investors is the necessity of formulating and executing a plan designed to maximize the likelihood of success (Young, 2022).

2.6 Cryptocurrency as an alternative way of financial investment

Within the financial industry, cryptocurrencies have become a very alluring substitute for more conventional investment options such as equities and bonds. Its decentralized structure, which is unrestricted by governmental or financial institution supervision, presents a unique opportunity in asset management. The allure of cryptocurrencies is their capacity to yield high returns, as seen by their impressive rise in value in recent times, which offers investors the prospect of substantial financial profits.

Considering that the performance of cryptocurrencies is frequently uncorrelated with that of conventional asset classes, they also represent a useful tool for portfolio diversification.

It is also a convenient and inclusive investment option due to its portability and accessibility. Because of its global accessibility and digital nature, anyone with internet connection can participate in the bitcoin ecosystem. It also provides for simple storage and transfer.

However, there are risks associated with cryptocurrencies in addition to these possible benefits. Its volatility, which can cause values to change significantly over brief periods of time, is a problem. The complexity is increased by regulatory uncertainty, as governments throughout the world consider the ramifications of cryptocurrencies and may implement restrictive measures. Moreover, there are ongoing security issues because cryptocurrency wallets and exchanges are vulnerable to hacks that could jeopardize the assets of investors.

According to a number of modern analysts and considering how it is really used to perform economic functions, cryptocurrency is a unique type of money. Its development is mostly dependent on computing power, requiring little in the way of physical resources. These digital tokens, which make up cryptocurrencies, make it easier for people or corporations to deal for goods and services. (Härdle, W.K., Trimborn, S., 2015. Masters, B., 2023).

Cryptocurrencies have financial potential that becomes apparent when they are traded for fiat money or other assets.

These days, it is standard procedure in international markets to assess the value of currencies or commodities by pegged to major reserve currencies that are commonly used for payments and exchanges around the globe, including the US dollar, the euro, or the Chinese yuan (Masters, B., 2023).

Purchasing reserve or foreign money that is different from the investor's home currency is analogous to investing in cryptocurrencies in this case.

The value of each country's currency varies in relation to major reserve currencies and other national currencies due to the accelerated pace of macroeconomic processes in the modern world and the distinct trajectories of development and growth among nations, as indicated by their respective GDPs (Nasekin, S., Chen, C., 2020).

As a result, a person might build investment capital by exchanging their national currency for a reserve currency. This capital may fluctuate as a result of changes in inflation, exchange rates, economic growth, and other variables. The investor's portfolio's currency ratios are influenced by these factors.

For instance, there can be a larger amount expressed in Turkish Lira if you buy US dollars in 2021 using Turkish Lira and then convert them back to Turkish Lira in 2023. Cryptocurrencies all have the same characteristics: they fluctuate over time and have volatile exchange rates.

Moreover, given the limited availability of processing power worldwide, it becomes very difficult to allow cryptocurrency emissions to occur without control. Because of this, some analysts think that cryptocurrencies have investing qualities similar to those of monetary gold. However, there are still several difficulties associated with investing in cryptocurrencies. These difficulties include significant hazards that have been brought to light by regulatory organizations, who voice worries about cryptocurrencies' unregulated issuance, use, and cross-border transactions in addition to their volatility. Unlike traditional financial instruments, using cryptocurrencies for transactions requires creating an account with specific software and obtaining a digital wallet, both of which are easily obtained from cryptocurrency exchanges.

Every investor has a unique ID that is essential for maintaining their account on the exchange platform and for documenting ownership transfers inside the blockchain architecture. Experts and analysts list a number of benefits and downsides of using cryptocurrencies as an investment vehicle.

The main factor supporting the popularity of cryptocurrencies as a financial asset among traders and experts is their significant potential for huge returns.

The potential returns on cryptocurrency investments are far higher than those of conventional currency or stock market investments.

The possibility for portfolio diversity offered by cryptocurrencies is another argument in favor of them as investment assets. As stated before, a lot of analysts and traders compare cryptocurrencies to gold (Trimborn, S., Härdle, W.K., 2018).

Given that these instruments behave differently, the capacity to protect portfolios from macroeconomic downturns is frequently the focus of this comparison.

For example, in the second half of 2021, the value of Bitcoin rose in tandem with the S&P 500 index's drop. 10% of Bitcoin and 90% of the S&P 500 would have produced a compound annualized return of 26.8% for the portfolio. A third point emphasizes how scarce cryptocurrencies are.

Using Bitcoin as an example, current projections indicate that a maximum of 21 million coins might be issued, of which more than 18 million are already in use. This feature makes it possible to forecast how bitcoins will circulate in the future by taking into account both their dynamics of issuance and circulation.

Even though Bitcoin is very well-known and well-liked, most cryptocurrencies are not recognized by central banks as payment methods or as financial investment tools. There are relatively few exceptions to this rule, and it's still difficult to use cryptocurrencies for regular transactions or in the traditional distribution of commodities (Cortez, K., Rodríguez-García, M.d.P., Mongrut, S., 2021).

The intrinsic volatility, lack of regulation, and unpredictable nature of cryptocurrencies sometimes contribute to their lack of general adoption and recognition.

Because there is no regulation, cryptocurrencies are open to fraud and illegal activity. Studies show that a significant percentage of bitcoin users and transactions are connected to unlawful activity, suggesting that the unregulated and unstable atmosphere surrounding cryptocurrencies attracts those who are involved in criminal activities. Although cryptocurrencies have certain potential benefits, such diversification and inflation protection, they also have some significant disadvantages, like high volatility, low adoption, and a higher danger of being used for illegal activities.

It is advisable to carefully weigh these drawbacks before making bitcoin investments. However, there are a number of reasons why both individuals and legal businesses are becoming more interested in using cryptocurrencies.

First of all, because cryptocurrencies are volatile and can yield large profits through trading or investing, they offer prospects for generating revenue.

Second, they act as a risk hedge, especially in unstable economic times when conventional assets like bonds, equities, and fiat currencies are susceptible to depreciation. A further option for risk management and portfolio diversification is offered by cryptocurrencies.

Finally, investors looking to diversify their portfolios and move beyond traditional assets are driving the growing popularity of cryptocurrencies (Saleh, Fahad 2020). With cryptocurrency, investors may diversify their risk exposure across multiple industries and have access to an alternative asset class that is not tied to traditional financial markets. The benefits of investing in cryptocurrencies include portfolio diversification, income generation, and risk reduction.

To put it simply, people now view cryptocurrency as an alternative kind of investment. They are an alternate investment channel because the required infrastructure is easily accessible. Before investing in cryptocurrencies, however, investors need to carefully consider the advantages and disadvantages, assess the degree of risk, and establish their financial goals. It's common knowledge that cryptocurrencies are high-risk, high-yield investments that frequently fall short of expectations.

It is not advised for novice investors to enter the cryptocurrency market with significant financial resources. A customized evaluation of the trade-off between advantages and disadvantages should inform the decision to include cryptocurrencies in a portfolio (Cong, Lin William, Zhiguo He, and Jiasun Li 2020).

2.7 Tough time for Alternative Assets

Because they are thought to be able to offer significant diversification benefits during periods of stock market volatility, alternative assets are usually sought for.

But lately, that hasn't been the case. Asset classes that are frequently positioned as alternatives to typical stock market investments, such as infrastructure, renewable energy, and private equity, have underperformed despite swings in equities prices over the last two years.

However, a few observers think that this tendency might soon be shifting. The US and the UK's central banks may soon stop raising interest rates, according to recent data that shows a significant and compelling decrease in inflation rates in both countries. This development may be favorable for non-traditional assets.

So what’s been happening with alternative assets lately?

Investing in alternatives, or 'alts,' has failed to live up to the performance expectations that are usually attached to it. For example, the Association of Investment Company (AIC) indicated that for the year ending in mid-November 2023, shares of infrastructure investment trusts had a 9% loss. As compared to the value of their underlying assets, these shares are currently trading at an almost 15% discount.

An even more difficult situation has been confronted by renewable energy funds, which have dropped 13% and are now 18% discounted.

During the last 12 months, private equity investment trusts have performed comparatively better, with positive share price returns. Still, the industry is plagued by discounts of about thirty percent; this is even before accounting for the influence of large funds such as the 3i Group Ord fund.

Investors in specialized alternative funds that were introduced prior to the Covid-19 pandemic have also been let down. For example, the HydrogenOne Capital Growth Ord is down 47% over the last year, while the Seraphim Space Investment Trust Ord has lost a significant 45%. Hipgnosis Songs Ord's performance has been so bad that its stockholders decided to stop using it as is.

These poor results are caused by a number of causes, the most important of them being the state of interest rates and inflation.

Interest rates are especially important in industries like infrastructure and renewable energy since these funds frequently draw investors due to the profits they provide.Large-scale infrastructure projects frequently bring in a significant sum of money, sometimes supported by inflation-linked state guarantees, which managers then distribute to investors.
But yields on government debt have increased in tandem with interest rates. There is less incentive to invest in more uncertain asset classes in a situation like this, where investors can earn 5% or more on low-risk assets like US Treasuries and UK gilts.
Additionally, a compounding effect is in operation. The usual method used to value infrastructure assets is to forecast future cash flows and then adjust for inflation to get the current value. Bond yields have an impact on this adjustment; so, an increase in yields causes an inevitable decrease in the value of these assets.
An alternative difficulty presented by increased interest rates is in the private equity sector. Since private equity funds frequently use borrowing to expand their holdings, rising borrowing costs become a major worry.
In the current financial climate, the private equity industry also has to contend with an increasing level of investor risk aversion. Investors in private equity funds rely on estimates released quarterly by the fund manager rather than real-time updates on the value of their holdings, unlike publicly traded stocks.
Investors may anticipate bad news during anxious times and consequently depreciate the fund's shares. Specialist funds are also affected by risk aversion since investors are reluctant to invest in unknown assets.

So, why should alternative assets be reconsidered now?
One important issue is that interest rates seem to have peaked; during the course of the next year or so, several economists forecast a decrease in the US, the UK, and Europe. Government bond yields will decline as a result of the expected reduction in interest rates, which could counteract some of the negative effects that alternative assets have seen over the previous year.

A thorough historical research shows that government bonds, infrastructure, and renewable energy all perform quite well together.

There are other advantageous aspects to take into account as well. Stifel draws attention to recent declarations made by the National Infrastructure Commission of the United Kingdom, which demand significant funding for infrastructure related to renewable energy.

More investment opportunities are anticipated as a result of the UK government's intention to increase financial incentives for the offshore wind industry.

Moreover, market selloffs brought on by risk aversion impact all funds, irrespective of their unique attributes. Many managers in the alternative sector believe these market swings have had an excessive impact on them.

"We can't control the market, but we can concentrate on constructing a portfolio of assets with genuine potential," says Stephen Foss, managing director of Cordian, the asset manager behind Cordiant Digital Infrastructure Ord.

With its focus on digital assets like data centers, fiber networks, and communications towers—which offer a unique proposition compared to traditional infrastructure like roads and ports—his investment trust, which is currently trading at a 35% discount, has encountered difficulties along with the infrastructure sector as a whole.

Foss emphasizes that it offers a blend of both income and capital growth. "Digital infrastructure is ingrained in our daily lives, which provides a significant tailwind, especially considering advancements in areas like artificial intelligence," he explains.

Moreover, given current market conditions, mood may change quickly, especially in specialized industries. For example, after announcing two new investments in early-stage space technology enterprises in their third-quarter market update, Seraphim Space's shares increased by 7% in a single day.

There are grounds to be optimistic about a possible rebound in private equity. For over two years, managers have been expected to reduce portfolio values; yet, this situation has been mostly avoided. According to stockbroker Jefferies' Matthew Hose, an equities analyst, it may be time for the industry to adjust to the state of the market.

Positive outlooks are also expressed by analysts at Numis Securities, who highlight appealing investment prospects in the listed private equity space, which shows average discounts of 30%.

Compared to the secondary market for private equity funds, when buyout funds are trading at 10% discounts, this is a more beneficial situation. In the event that the alternative space does see a recovery, investors have to carefully weigh their possibilities.

Head of funds research at Interactive Investor Dzmitry Lipski suggests that investors consider alternatives as an integral element of a diversified portfolio strategy, particularly in niche markets such as renewable energy. He points out that specialty strategies frequently focus on a narrow market niche, which might lead to a portfolio that has notable market-cap or style biases. It may be advantageous for longer-term investors who can handle more volatility to diversify among a number of specialized sectors. In light of this, Lipski particularly suggests the Polar Capital Smart Energy fund to investors. Its thematic investment approach, track record, and experienced management are highlighted by him. The alternative investment market does, in fact, provide a broad range of choices, each with unique qualities. Since every opportunity is unique, it is important to carefully consider the benefits of each fund.

However, alternative investing fans are beginning to notice some signs of improvement. This implies that the low valuation opportunity that is currently available might not last very long. "Alternatives entail additional risks such as portfolio valuation, asset liquidity, and often higher leverage. However, in our opinion, the significant and historically unusual disparity underscores the oversold nature of the alternatives space," commented Stifel's analysts in their recent analysis.

Chapter III — Analysis of the evolution of alternative investments in SWFs

3.1 The sovereign wealth fund ecosystem

In the modern global economy, sovereign wealth funds represent a sizable segment of institutional investors. They oversee assets worth over $11.6 trillion in total, which has almost tripled in size over the last ten years.

These varied investors are government-owned investment vehicles that don't have clear pension obligations and typically follow long-term investment plans.

Their lack of transparency and status as a sovereign nation give them a unique investment profile. After the Great Recession, when they infused over $40 billion into several major Western banks in less than 15 months to keep the financial system from imploding, sovereign wealth funds rose to prominence.

Sovereign wealth funds' investing methods exhibit two main tendencies.

Firstly, their interest in alternative investments has surged, particularly in private equity. Their percentage of these assets doubled between 2015 and 2019, to an all-time high of around 31%.

To achieve their financial and strategic objectives, they are also getting more involved in this asset class and less dependent on outside fund managers, instead engaging directly in investments.

Second, the IT industry is attracting more and more sovereign wealth funds. Acting as serial venture capitalists, they are increasingly often investing in innovative companies in domains like biotechnology and artificial intelligence, as opposed to concentrating on more conventional areas like financial services or real estate.

The field of academic research on sovereign wealth funds is still relatively new, despite its importance in the world's financial markets. In particular, little is known about their financial returns and the variables that affect them. Further research, like the one by GlobalSWF, has been hampered by the vast range of investment and policy interests among these investors as well as the general lack of transparency around venture capital and private equity operations.

SWF investment trends in Private Equity

Sovereign wealth funds have made huge increases to their private asset investments over the last ten years. Their portfolio's allocation to infrastructure, real estate, and private equity more than tripled from 9.2% to 29% between 2015 and 2022.

Citing a growing portion of value creation taking place in these markets, Norway's $1.3 trillion NBIM informed the country's Ministry of Finance in January 2023 that they were thinking about extending their investment universe to include unlisted shares.

This represents a significant change of direction for the fund, which was previously averse to private market exposure and was well-known for its conservative investment philosophy.

Sovereign wealth funds, like other institutional investors, began their private equity investments primarily as limited partners through outside fund managers.

Sovereign wealth funds started co-investing with the general partners of the funds they backed as they improved and adjusted their capacities.

Since then, the most astute funds have shifted their focus to direct private equity investment opportunities; a few of them have even begun to spearhead venture capital rounds in technology businesses at various stages of development.

This change might be the inevitable result of sovereign wealth funds becoming more sophisticated investors as a result of exposure to educational opportunities via their connections with other financial players.

Financial concerns are probably the driving force for sovereign wealth funds' involvement in private stocks as opposed to listed ones. These investors may be able to diversify their portfolios and maybe increase their profits by making investments in riskier and unconventional assets.

In addition, sovereign wealth funds are more likely to profit from the "private firm discount," which enables them to invest at a substantial discount to what is offered in public markets and negotiate better rates.

Even after deducting management and performance fees, the rate of return for private equity has generally surpassed public market performance across a variety of strategies and geographical areas, despite trade-offs such investment illiquidity and greater information asymmetry.

Sovereign wealth funds are better suited to manage the intricacies of private equity transactions as they expand their investment capabilities.

They have been looking for these possibilities more and more as a result of this advancement because of the possibility of higher financial returns.

Their move toward this asset class is supported by the benefits of private equity and the strategic lessons they have learned from their financial partners, which indicates a substantial evolution in their investing approach according to KKR Report.

Developing in-house skills can benefit sovereign wealth funds (SWFs) that make strategic financial investments in private companies, in addition to the higher profitability and risk diversification that comes with it.

First of all, SWFs are encouraged to professionalize their internal teams by attracting or developing top talent by working with experienced private equity fund managers.

An organization that has greater human capital may be more inventive, efficient, and flexible.

Second, by strengthening their internal investment capacities, sovereign wealth funds (SWFs) can acquire access to more sophisticated private market assets while lowering their dependency on outside fund managers and the costs that go along with them.

Thirdly, by efficiently managing information asymmetry concerns, improved internal capabilities reduce agency costs resulting from the principal-agent conflict between sovereigns and fund managers or invested enterprises.

For instance, Abu Dhabi's Investment Authority has been bringing in top talent from top investment banks while lowering its reliance on outside fund managers, going from approximately 75% of assets under management (AUM) in 2012 to 50% in 2022. Its activities can now be more tightly controlled thanks to this change.

Ultimately, SWFs with strategic investment goals might gain from private equity investments by learning over time and adding value to the sovereign.

By forming partnerships and joint ventures with top global private firms, local economies can be diversified into important industries, portfolio companies can be strengthened through knowledge and skill sharing, and long-term, mutually beneficial relationships between sponsoring and receiving governments can be fostered.

An example is Hub71 in Abu Dhabi, a significant innovation project supported by Mubadala. Abu Dhabi hopes to draw top international talent and funding by creating a global innovation environment. Mubadala's earliest venture capital investments included a number of portfolio companies that were anchor innovators for Hub71, joining the first cohorts of entrepreneurs at the hub.

According to GlobalSWF Report, maintaining favorable rules, creating a community that is globally connected, and granting access to a network of companies and capital sources are critical components of successful technology hubs, and doing so will guarantee Hub71's success. A strategic sovereign wealth fund's (SWF) participation may be essential to this procedure.

3.2 Trend of alternative investments in SWFs in the period 2019-2022

Year 2019-2020 in Review

In 2020, State-Owned Investors (SOIs) cut back on capital allocations considerably. Deal-making was impeded by logistical obstacles during the pandemic's peak, as investment executives found it difficult to obtain committee approvals in the absence of in-person meetings.
As the year went on, caution was advised, particularly for sovereign wealth funds (SWFs) that could have to raise money to cover budget deficits.
Overall, compared to 2019 levels, SWF investments fell by 33% to $83.7 billion over 280 transactions, while PPFs (public pension funds) witnessed a minor gain in deal volume and value, totaling $78.6 billion across 223 acquisitions. SWFs took a "never waste a good crisis" stance after learning from the 2008 financial crisis.
In contrast to savings funds (such as ADIA, CIC, GIC, and QIA) that responded during the previous financial crisis, development funds (such as Mubadala, PIF, and Temasek) acted quickly to acquire strategic assets during the COVID-19 crisis.
Among the top spenders, Canadian funds—in particular, CPP and CDPQ—remained prominent. The market conditions led to a considerable recalibration of strategic asset allocation. 2020 benefited investors with more liquidity, whereas 2019 was good across all asset classes and 2018 was difficult. Nonetheless, different funds used different methods for valuing private holdings, which affected the choices made about whether to recognize underlying losses in non-listed portfolios during volatile markets.

Table 3.1 Return of asset classes in 2018, 2019, 2020

Asset Class	2018	2019	2020	Index
Fixed Income	-2.0%	+13.6%	+10.2%	S&P500B
Public Equities	-10.5%	+25.0%	+13.1%	S&PGL1200
Real Estate	-5.6%	+24.9%	-5.2%	S&P500RE
Infrastructure	-13.2%	+21.8%	-8.7%	S&PGLInfra
Private Equity	-17.2%	+39.4%	+0.6%	S&PLPE
Hedge Funds	-0.8%	+7.3%	+4.9%	HFM GL

source: globalswf.com

The recession had a notable effect on several asset types, especially real assets like buildings and infrastructure, which saw sharp drops in deal activity. Transactions in this sector comprised only 29% of all SWFs, a decrease from 38% in 2019.

A change in investment preferences was also observed, with SOIs expressing greater interest in logistics, data centers, warehouses, senior living facilities, and student housing and less in luxury hotel brands and prime urban real estate.

Comparisons drawn between the COVID-19 epidemic and the Global Financial Crisis (GFC) underscore the industry's progress in the last twelve years.

The assets of Special Olympics increased from US$ 13.8 trillion in 2008 to US$ 27.5 trillion in 2020, with an average increase in the percentage of alternative investments from 12% to 24%.

This shows that throughout this time, SOI investments in infrastructure, real estate, private equity, and hedge funds increased significantly. Furthermore, SOIs have changed from being thought of as "dumb money" to becoming intelligent investors that carefully consider strategy, allocation, and risk.

2020 saw a turbulent investment environment, but it got off to a solid start with SOIs deploying US$ 23.4 billion in February alone. But when the COVID-19 outbreak struck in March, global cash transfers abruptly stopped. Although funds increased their activities in Q3 and Q4 in response to the changed circumstances, they ended the year with smaller investment volumes than in 2019.

This trend was especially noticeable for SWFs, which were cautious in the face of difficult economic circumstances and possible budget deficits. As a result, overall investments fell below US$ 100 billion for the first time in seven years. On February 17, Dubai World made the largest deal to date when it bought back 20% of DP World, which was listed on Nasdaq Dubai. The same day, CDPQ announced a new investment of US$ 3.1 billion, converting its Bombardier position into Alstom shares.

Other noteworthy deals included Mubadala's US$ 12 billion loan platform led by Apollo, ADIA's US$ 2.8 billion investment in Elevator Technologies, and CPP's US$ 2.8 billion investment in Pattern Energy.

Table 3.2 Top 10 Co-Investments of at least one SWF and at least one PPF during 2020

Asset	Country	Industry	SWF/s	PPF/s	Date	Joint Value (US$ bn)	Joint Stake (%)
DP World Global JV	Global	Infra	Dubai World	CDPQ	Sep-20	4,500	100%
ADNOC Gas Pipeline	UAE	Infra	GIC	OTPP	Jun-20	3,367	16%
NIIF Master Fund *	India	Infra	ADIA, TH	AS, CPP, OTPP, PSP	Dec-20	2,340	58%
Transgrid *	Australia	Infra	ADIA	CDPQ, OMERS	Jul-20	1,650	20%
Waymo	USA	TMT	Mubadala	CPP	Mar-20	1,150	n.a.
Equis Development	Singapore	Infra	ADIA	OTPP	Nov-20	1,000	n.a.
ESR Cayman	Australia	RE	GIC	OMERS	Sep-20	640	42%
Healthscope NZ	New Zealand	HC	NZ Super	OTPP	Aug-20	530	100%
Inigo	UK	FS	QIA	CDPQ	Nov-20	400	n.a.
Brussels Airport *	Belgium	Infra	TCorp	GPIF, OTPP	Jan-20	300	5%
Total						**15,877**	

Source: globalswf.com
*Only the latest investment was done in 2020; some of the other stakeholders / LPs may have invested in earlier years

The sectorial aims have changed, which is more intriguing. Technology has emerged as a major investment target, but the quantity of deals is important to consider because real asset investments are typically larger and can distort the research.

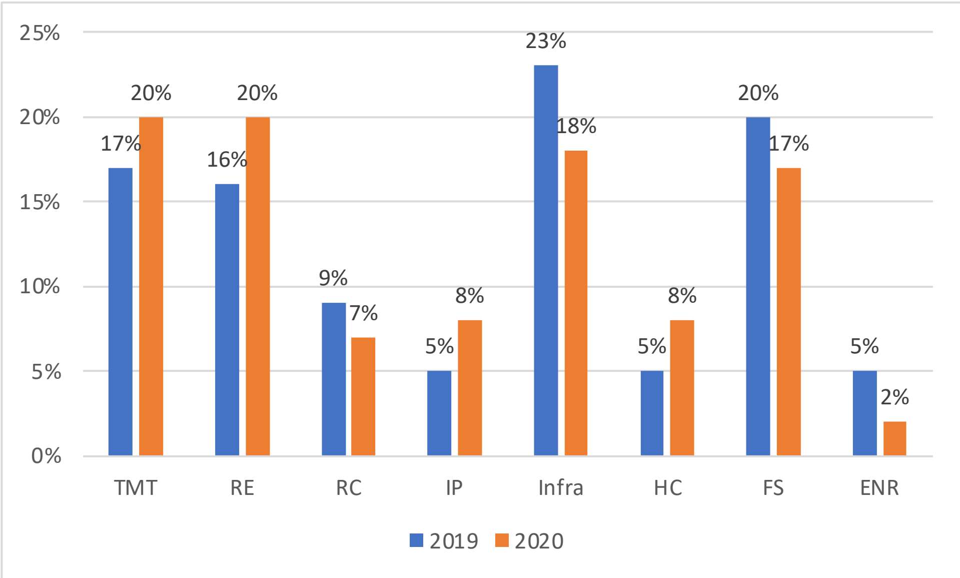
A quarter of investments made in 2020 by institutional investors went toward technology, media, and telecommunications (TMT), demonstrating their commitment to this sector.

The pursuit of vaccines and biotech propelled a notable surge in investments in healthcare (HC), amounting to 41 investments. Infrastructure (Infra) and Real Estate (RE) continue to be significant parts of SOIs' portfolios.

The amount of real asset deals has decreased, nevertheless, from nearly half in 2015 to just over a third in 2020.

Property transactions show the most evidence of this trend, falling from 119 agreements valued US$ 75.6 billion in 2015 to 103 deals valued US$ 30.7 billion in 2020.

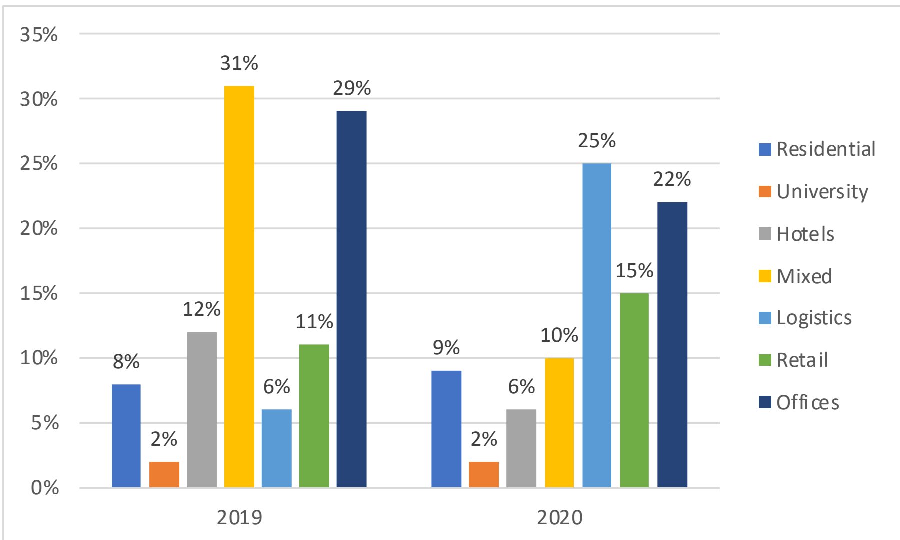
Graph 3.1 SOIs Investment by industry



Source: globalswf.com

Real Estate: Over the past year, there has been a discernible trend away from properties and toward logistics in terms of investment. Since Brexit, the significance of office investments has decreased, causing SWFs to cut back on their purchases of premier London real estate. Similarly, hotel investments have decreased to half of what they were in 2015. In conclusion, SOIs predict that long-term infrastructure requirements will essentially stay the same, but they are shifting their focus from offices to logistics in anticipation of a possible long-term shift in workplace culture.

Graph 3.2 RE Investments by segment (Direct Investment only)

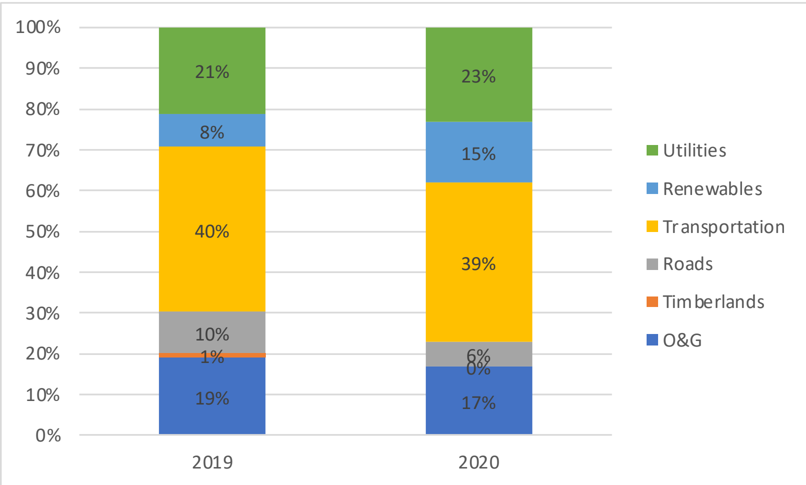


Source: globale.com

Infrastructure: It is especially difficult to analyze trends in infrastructure because different funds classify different categories differently.

While this asset class generally fits well with long-term investment perspectives, SOIs may be exposed to significant risks due to regulatory changes. There has been a minor transition from oil and gas to renewable energy over the last five years. Despite the substantial influence of COVID-19 on the sector, transportation—including ports and airports—and power and utilities continue to be critical areas of concentration.

Graph 3.3 Infra Investments by segment (Direct Investments only)



Source: globalswf.com

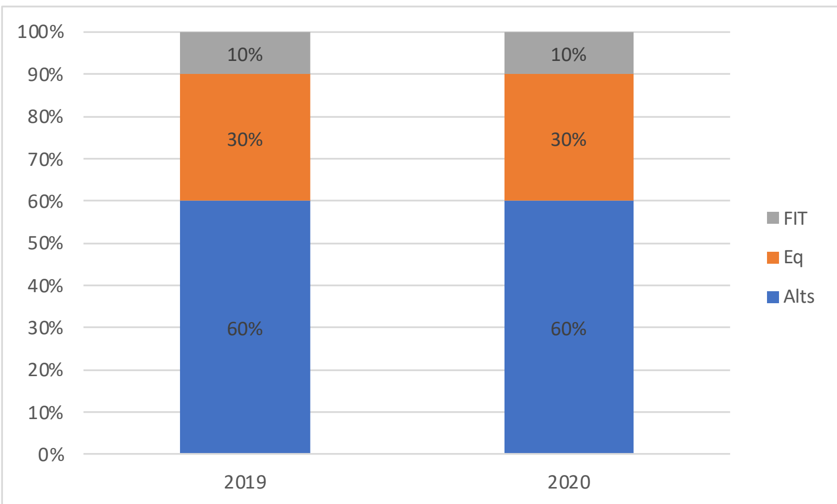
Fund of the Year: PIF

Saudi Arabia is changing quickly, especially in the financial and commercial spheres. The Vision 2030 program, which was unveiled in 2016 and intends to diversify the Kingdom through efforts in infrastructure, tourism, technology, and health, serves as the roadmap for this change. The Public Investment Fund (PIF) was primarily concerned with internal economic development and was largely unknown outside of Saudi Arabia until 2015.

By 2020, PIF had evolved into one of the most well-known sovereign wealth funds in the world and the driving force behind Vision 2030 under the direction of Governor

H.E. Yasir Al-Rumayyan. Its smart, long-term investment approach allowed its assets to grow from US$ 150 billion to US$ 360 billion in just five years.
With 20% of its investments already located outside of Saudi Arabia and intentions to create offices in New York and London, the Fund has also broadened its mandate abroad.
Six capital pools—two foreign and four domestic—make up PIF's portfolio. Mature holdings, particular real estate projects, mega projects (large-scale constructions on previously undeveloped territory), and sector development (focusing on underdeveloped or nonexistent sectors) are some of the Saudi assets.
The Red Sea Project, Qiddiya, and NEOM, a 16,000-square-mile development in the province of Tabuk, are a few notable mega projects.
The two international pools are international strategic investments, which focus on emerging markets with substantial return potential, and international diversified, which includes more liquid investments in debt, fixed income, real estate, and public and private equity. Significant global contributions are the US$ 20 billion Blackstone Infrastructure Fund, US$ 3.5 billion Uber, and US$ 45 billion SoftBank Vision Fund.
PIF made investments in Q1 2020 in a number of US businesses affected by COVID-19, including as entertainment, hotel, and energy. In the second part of the year, it made US$ 3.3 billion in subsidiaries of the Reliance Group, an Indian conglomerate.

Graph 3.4 PIF Strategic Asset Allocation (%)



Source: Global SWF

About 90% of Saudi Arabia's export earnings, 42% of its GDP, and 87% of its budget income come from the oil and gas sector. Additionally, it accounts for 38% of the portfolio held by the Public Investment Fund (PIF), though this is quickly changing as the Fund concentrates on industries like as financial services, technology, mining, agriculture, and the public sector. For US$ 69.1 billion in June of this year, PIF sold Saudi Aramco a 70% share in Saudi Basic Industries Corporation (SABIC), the fourth-largest petrochemicals firm in the world.

According to the 2017 Program, PIF's progress in 2020 would be measured by four key performance indicators (KPIs):

1. Assets: Reaching a Total Shareholder Return of 4%–5% (up from 3%), and 400 billion US dollars in assets under management (up from 224 billion US dollars).
2. New Sectors: 20% of assets are allocated to new sectors, which boost Saudi Arabia's GDP by $8 billion.
3. Partnerships: Contributing a total of US$ 5.3 billion to foreign direct investments and guaranteeing that 25% of the portfolio is made up of foreign assets.
4. Economics: Investing US$56 billion in technology and R&D and directly creating 11,000 high-skilled employment.

Asset Class of the Year: Private Credit

As a distinct asset class, private credit (PC) has grown in popularity over time, mostly due to the backing of sovereign wealth funds (SOIs), who have supplanted more opportunistic investors as the main source of funding.

The end of a protracted economic expansion that had seen underwriting standards drop as the pursuit of yield led to riskier financing decisions has coincided with the COVID-19 epidemic, which has accelerated an already-existing tendency.

When the economic cycle matured, investors were forced to investigate riskier alternatives they had previously shunned because to the lack of accessible, low-risk investments with steady returns. Due to the difficulties facing fixed income, the extreme volatility of public equities, and growing worries about a possible private equity bubble, SOIs looking for yield are finding private credit to be more alluring.

Table 3.3 Top Private Credit Allocators

Fund	AuM ($b)	PC %	PC ($b)
CDPQ	244	*11.0%*	27.4
CPP	341	*8.0%*	27.3
OTPP	149	*8.0%*	11.9
CIC	1,046	*1.0%**	10.5
PSP	120	*8.7%*	10.4
GIC	488	*2.0%**	9.8
ADIA	726	*1.0%**	7.3
OMERS	85	*7.5%*	6.4
Future Fund	150	*4.0%*	6.0
CalPERS	403	*1.0%**	4.0
Top 10	**3,752**	***3.2%***	**121.0**

Source: globalswf.com

The asset class has had substantial growth, rising from 2% of the Top 10 Sovereign Wealth Funds' (SOI) portfolios in 2015 to 3.2% in 2020. Because they are not subject to as many liability restrictions as banks are, sovereign investors are able to assume greater liquidity risk.

Their longer investment horizon is what motivates them to take on more risk.

The Alternative lending Council (ACC) reports that worldwide assets under management (AUM) for private lending have increased from US$ 238 billion to US$ 787 billion in the ten years following the financial crisis. A more professional approach has resulted from this growth, with thorough due diligence assisting in reducing risk.

The ACC discovered that managers planned to raise US$ 100 billion in 2020, matching the number of loans made in 2019, despite uncertainty and systemic risks, since private credit is increasingly seen as a means of hedging portfolios.

Throughout the pandemic, the asset class has demonstrated remarkable resilience, with managers preserving portfolio values and using dry powder to buy new assets.

Even though the lockout decreased allocations to private credit in the second quarter, when the market readjusts, investment is anticipated to increase in 2021. Private credit will be essential in funding the economic recovery since traditional banks are reducing lending, particularly to mid-market businesses.

Canadian funds topped the list of the top 10 allocators to this asset class in 2020. From 2016 to 2020, Quebec's CDPQ more than doubled its investments in private debt, reaching over US$ 27.4 billion, and is projected to reach US$ 39 billion by 2024. The federal CPP is next, having greatly expanded its PC Program in 2015 when it paid US$12 billion to GE for Antares Capital. These funds, when combined with OTPP, PSP, and OMERS, own more than US$ 83 billion in private credit.

The Top 10 non-Canadian SOIs, such as Future Fund, GIC, ADIA, CIC, and CalPERS, keep their allocations lower. Because of the magnitude of their balance sheets, these allocations are nevertheless highly important in absolute terms.

Year 2021 in review

For investors that are state-owned, 2021 was again another wonderful year. Since March 16, 2020, stock markets throughout the world—particularly those in the US—have been rising. The S&P 500 more than doubled, the Dow Jones Industrial Average expanded by 90%, and the S&P Global 1200 Index increased by 86% in the 21 months that ended in 2021. Due to their substantial exposure to US equities, sovereign wealth funds and public pension funds saw tremendous gains, some of their best-ever performances, and an increase in assets under management (AuM).

In 2021, the industry for sovereign wealth funds experienced 6% annual growth and crossed the US$ 10 trillion threshold for the first time ever.

The recovery in oil prices and the creation of new funds, in addition to growing stock prices, were the main drivers of this development. Along with surpassing US$ 20 trillion in value, public pension funds had year-over-year growth of 8.7%, fueled by larger contributions from pensioners across the globe and greater exposure to US equities. In 2021, there was a notable difference in the way various asset types performed. The S&P 500 Bond Global Index showed that the only asset class with negative returns was fixed income. The S&P Global 1200 Index indicates that public equities have maintained their impressive performance. Compared to stocks, hedge funds underperformed once more.

However, according to indices of public businesses, real estate was the best-performing asset class of 2021, closely followed by private equity. Private markets are harder to analyze since SOIs do not always conduct valuations every quarter, and even when they do, there is a lag.

Table 3.4 Return of asset classes in 2020,2021

Asset Class	2020	2021	Benchmark
Fixed Income	+10.2%	-0.9%	S&P500B
Public Equities	+13.1%	+19.3%	S&PGL1200
Real Estate	-5.2%	+42.5%	S&P500RE
Infrastructure	-8.7%	+8.4%	S&PGLInfra
Private Equity	+0.6%	+37.8%	S&PLPE
Hedge Funds	+4.9%	+6.4%	HFM GL

Source: S&P, HFM Global

With the introduction of State-Owned Investors (SOIs) 3.0, the sector entered a new era in 2021. This comes after the first stage, which saw dispersed, independent capital pools (SOIs 1.0) until 2008. The second stage, which witnessed a notable increase in assets under management and investments (SOIs 2.0) from the global financial crisis to the COVID-19 pandemic.

Though the overall increase in deal values has not been as obvious, the quantity of deals has climbed dramatically. This is explained by the shifting preferences for real assets as well as the increased interest in venture capital.

Both of the SOI sub-segments have been very active during the last 12 months, showing markedly different behavior from years prior.

The maximum number of different investments made by sovereign wealth funds in a single year was 500 in 2021.

The overall investment level hasn't, however, surpassed the high points of 2016–2017. Even without the US$ 60 billion that SoftBank raised from PIF and Mubadala, those years were exaggerated, and 2021 falls short of 2016. From US$ 522 million in 2016 to US$ 212 million in 2021, SWFs' average investment size fell.

PPFs (public pension funds) had unprecedented growth in volume and value, surpassing US$ 110 billion for the first time.

Two-thirds of that amount came from Canadian funds, with CPP spending about US$ 24 billion in 76 transactions, many of which were co-investments with GIC and other SWFs.

Over the time under consideration, PPFs' average investment amount has stayed comparatively consistent, ranging from US$ 320 to US$ 430 million.

Co-investments between SWFs and PPFs accounted for some of the year's biggest transactions. Samruk Kazyna and ADQ pledged US$6 billion to develop power assets in Kazakhstan, the majority of which would be green. With a total worth of US$ 4 billion, ADIA, AustralianSuper, and CDPQ increased their stake in WestConnex in Australia. Along with INA, ADIA, APG, and CDPQ made US$ 3.8 billion in infrastructure investments in Indonesia. In three distinct transactions spanning the US, Europe, and Australia, GIC invested US$ 9.1 billion in logistics properties.

Table 3.5 Top 10 SOIs by fresh capital deployed* in 2019-2020-2021 (US$ billion)

Fund	2019	Fund	2020	Fund	2021
= GIC	24.0	= GIC	17.7	= GIC	34.5
↑ CPP	17.4	= CPP	14.6	= CPP	23.7
↑ Temasek	13.7	↑ CDPQ	12.1	↑ Mubadala	14.5
↑ QIC	12.2	↑ Mubadala	11.9	↓ CDPQ	14.4
↑ PIC	11.5	↓ Temasek	11.4	↑ APG	13.5
↑ ADIA	10.2	↑ NYSCRF	11.3	↑ OTPP	12.7
↓ NYSCRF	9.3	↑ ADQ	8.6	↑ OMERS	12.7
↓ CDPQ	8.0	↑ DP World	8.5	↑ ADIA	10.8
= PSP	7.8	↑ NPS	7.9	↓ Temasek	10.6
↑ Mubadala	7.6	↑ PIF	7.9	↓ ADQ	7.2

*Investment data includes various large-scale, long-term public market transactions as well as private market transactions (RE, Infra, PE). It excludes transfers of government assets (like ADQ's TAQA) and investments in domestic projects (like PIF's NEOM).
Source: globalswf.com

GIC is once again at the top of the league rankings for 2021. A 95% increase from 2020, the Singaporean sovereign wealth fund closed 110 investments totaling US$ 34.5 billion.

With a major emphasis on logistics, real estate accounted for over half of this capital. Energy and infrastructure came next, making up 15% of the investments. Retail, healthcare, technology, and finance accounted for nine percent of the total value, with venture capital making up just eight percent.

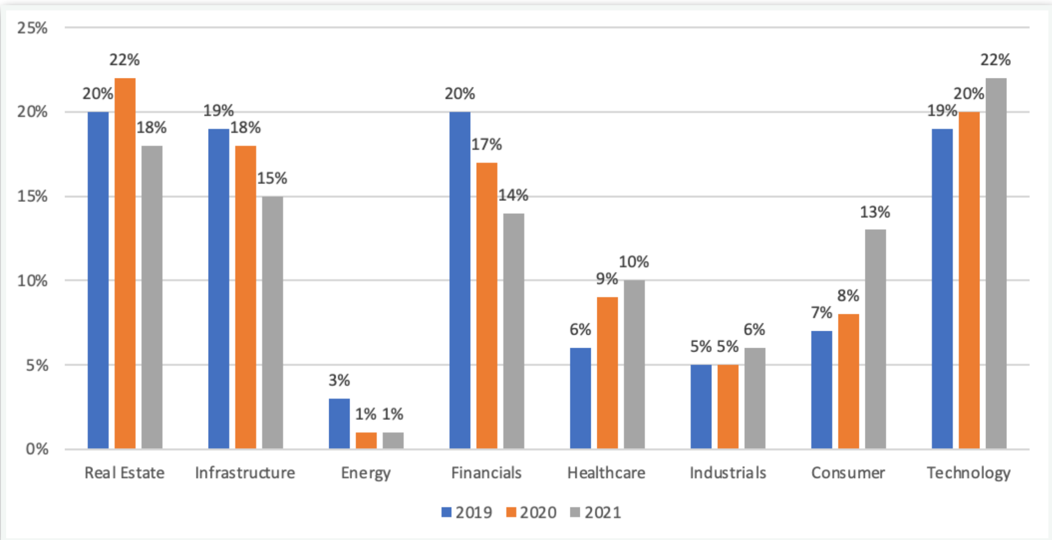
With US$ 23.7 billion in investments, the Canadian pension fund CPP trailed GIC, albeit somewhat.

Real assets, which accounted for 62% of CPP's capital, were likewise favored. In line with its venture capital endeavors, technology businesses accounted for 25% of its transactions.

Together, CPP and GIC have invested US$ 233 billion in the last six years, co-investing in ten global deals in 2021 alone.

An analogous examination may be carried out concerning sectors and the modifications made to sectoral preferences by state-owned investors (SOIs) in the last three years.

Graph 3.5 Sectorial preferences of SOIs during 2019-2020-2021



Percentages represent proportion of investment deals per year in each sector
Source: Global SWF Data Platform

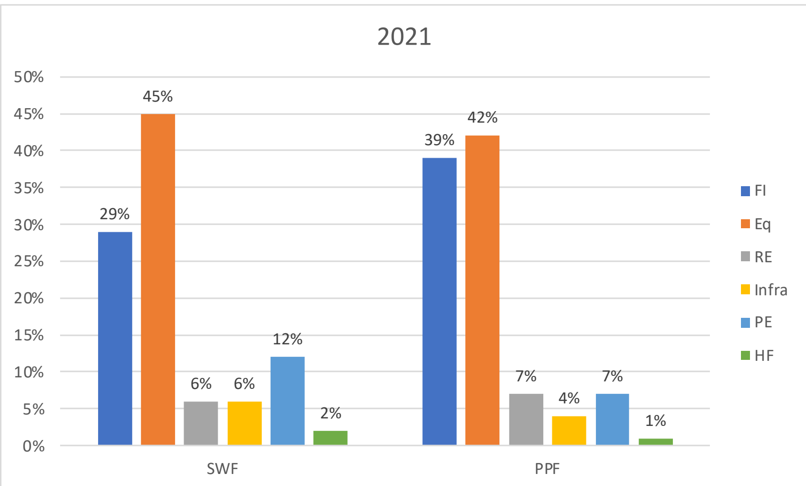
Here, we don't prioritize deal value over deal volume in order to avoid biasing the statistics in favor of actual assets, which usually entail bigger transactions.

The results are intriguing: real estate and infrastructure accounted for 39% of SOI transactions in 2019. This proportion dropped to 33% by 2021. On the other hand, industries including technology, retail and consumer products, and healthcare have become more well-known. Venture capital is having a greater impact on these industries, which is drawing increased interest from SOIs.

State-owned investors have definitely grown up and gotten more savvy in the last few years. They have added strategists, economists, and allocation experts to their own teams. Many are beginning to diverge from the traditional approach to strategic asset allocation, which typically divides capital into fixed income and treasuries ("FIT"), public equities ("Eq"), real estate ("RE"), infrastructure ("Infra"), private equity ("PE"), and hedge funds (“HF").

The composition of these asset types has changed significantly in the last few years. For example, sovereign wealth funds boosted their allocation from 15% in 2008 to 25% in 2021 outside of stocks and bonds. Comparably, state pension funds allocated 19% of their total assets to alternatives in 2021 compared to 11% in 2008. Real assets, private equity, and hedge funds have seen a large inflow of capital due to the considerable increase in assets these businesses have seen.

Graph 3.6 SWFs and PPFs Asset allocations per type of fund



Source: globalswf.com

Fund of the year: Mubadala

Speaking about the United Arab Emirates' progress would be incomplete without bringing up Mubadala, which translates to "exchange" in Arabic. Since the formation of the Emirates, the UAE has concentrated on diversifying its economy to ensure sustainable growth if its oil supplies are depleted. Oil was initially discovered in the Umm Shaif field in 1958.

Leading development and investment groups have been instrumental in realizing this goal.

The Mubadala Development Company (MDC) was founded in 2002 with the dual goals of advancing economic diversification in the United Arab Emirates and providing social returns to Abu Dhabi. The International Petroleum Investment Company (IPIC) and MDC combined in 2017 to become Mubadala Investment Company (MIC), with the goal of pursuing worldwide investment while upholding the UAE's economic diversification.

The Abu Dhabi Investment Council (ADIC) doubled its assets under management with an internationally diversified portfolio in 2018 when it became a member of the Mubadala group.

As of 2021, this amalgamated organization possessed investments in the majority of industries across more than 50 nations, significantly contributing to Abu Dhabi's economic engine and its Economic Vision 2030.

From "Development" to "Strategic"

According to GlobalSWF Reports, until 2017, Mubadala was known as a "Development Fund," with teams and portfolios organized into the following sectors: infrastructure, alternative investments, technology, manufacturing, and mining; petroleum and petrochemicals; aerospace, renewable energy, and ICT; and solar energy & mining. Revenues were given precedence over returns in its yearly review, and asset allocation was based on industries rather than asset classes.

Since then, Mubadala has changed its viewpoint and gone beyond its initial goal of growth. An early look at its asset allocation was given in its 2019 annual review; by 2020, it started to submit financial returns.

Mubadala announced a structural shift in January 2021 to divide its holdings into local and global categories, which reflected the growing importance of technology and alternative investments in its portfolio. Mubadala's changing preferences for places to live also reflect these shifts (GlobalSWF Reports, 2022).

As Mubadala's assets under management (AuM) migrated toward the Asia-Pacific area, as seen by its US$ 2 billion investment in Indian conglomerate Reliance (RRVL and Jio), among other things, the UAE portfolio shrank from 28% to 20% between 2019 and 2020. Even though the final 2021 geographic split is not yet available, the year's activities point to the continuation of this pattern (GlobalSWF Reports, 2022).

Mubadala demonstrated notable deal activity in 2021 across a number of different industries and geographical areas. With a total of about US$1 billion in closed transactions, the Credit Investments team set a milestone.

By participating in Evotec's Nasdaq initial public offering (IPO), the Life Sciences team helped the German drug discovery company raise an extra US$ 500 million to expand its biologics manufacturing capabilities (GlobalSWF Reports, 2022).

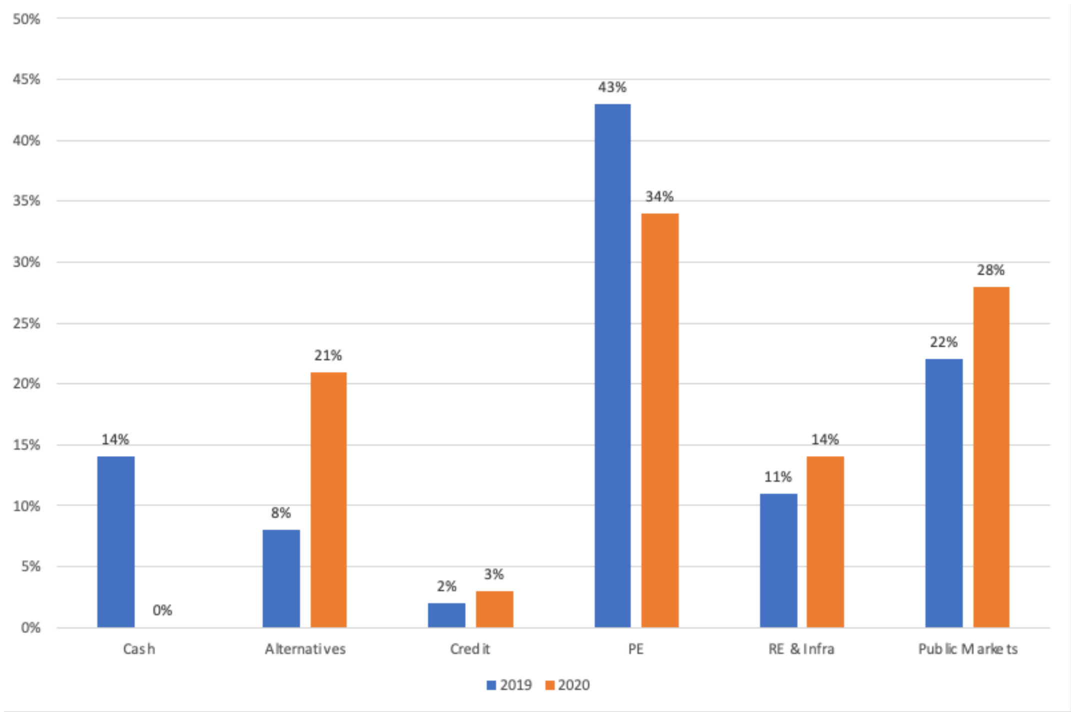
In order to increase PCI's service offerings, the team also supported PCI Pharma's acquisition of LSNE (Lyophilization Services of New England) and made an investment in Rodenstock, a manufacturer of high-end ophthalmic lenses (GlobalSWF Reports, 2022).

With investments in Israel (Masdar-EDF JV), Brazil (Renova Energia), Uzbekistan (Nur Navoi Solar), Greece (Taaleri Solar), and Armenia (Ayg-1 project with ANIF), renewable energy was also a key area of concentration. Mubadala's upcoming energy subsidiary, Masdar, is now one of the biggest investors in clean energy internationally, overseeing a US$ 20 billion portfolio of wind and solar plants worldwide (GlobalSWF Reports, 2022).

The Crown Prince of Abu Dhabi declared in December 2021 that Mubadala, ADQ-TAQA, and ADNOC will combine their renewable and hydrogen assets under Masdar, with the goal of reaching a combined capacity of 50GW by 2030 (GlobalSWF Reports, 2022).

Other noteworthy transactions in 2021 included real estate investments (in residential properties in the Netherlands and Russia, logistics in Australia and the US), infrastructure (in CityFibre, the UK, and Brazil), water filtration (in Culligan, the US), healthcare (in Certara, the US, Activos and IVC in Europe, and UEMedical in the UAE), and a variety of private equity transactions (in K-MAC, Apex, and Archer). But Mubadala Ventures, which has grown to become one of the world's top venture capital investors, was the most active organization (GlobalSWF Reports, 2022).

Graph 3.7 Mubadala's changes in asset allocation over time



Source: Mubadala Annual Reviews 2019,2020

Asset Class of the year: Venture Capital

A wave of venture capital investment, led by sovereign investors, resulted in a remarkable boom in the venture capital environment in 2021, characterized by the birth of decacorns and a profusion of unicorns.

Despite making up a relatively tiny percentage of sovereign investors' total portfolios, venture capital investments provide exposure to rapidly expanding industry disruptors.

Strong liquidity potential and a quick pace of exits, including IPOs and SPACs, drove valuations to all-time highs.

The amount of venture capital investments made by sovereign investors surged by 81% in 2020, hitting a record US$ 18.2 billion. The number of agreements also more than doubled to 328.

They have made 1,101 investments totaling US$ 117 billion over the last six years. Notably, PIF (US$ 45 billion) and Mubadala (US$ 15 billion) made sizeable commitments to the tech-focused SoftBank Vision Fund 1 in 2016 and 2017. The investments made by SoftBank Vision Fund 1 came to an end in 2020, having supported a variety of startups, including Uber and WeWork.

It's interesting to note that sovereign investors declined to sponsor SoftBank Vision Fund 2, indicating their increased maturity and capacity to cultivate their own venture capital knowledge. With US$ 5.1 billion invested in venture capital in 2021, Temasek topped GIC (US$ 2.8 billion) and CPP (US$ 2.7 billion).

Due to the pandemic, sovereign investors gravitated toward industries that were expected to thrive in the face of shifting consumer preferences, lifestyles, and societal demands.

They are placing more and more bets on the ubiquitous nature of technology in all industries, with emerging countries propelling the digital economy's exponential expansion. The most popular industry saw investments of US$ 6.9 billion, or 40% more than in 2020, going into technology.

But thanks to the revolutionary effect of COVID-19, the Retail & Consumer and Healthcare industries had the most noteworthy year-over-year growth. In reaction to shifting consumer habits, e-commerce platform investments soared, while biotech and health-tech companies drew large sums of money.

Venture capital investments experienced a significant increase in geography. With a strong R&D ecosystem that includes biotech and health tech in particular, the USA has drawn just over one-third of capital from sovereign investors. Sovereign investors grew across all US market segments in 2021, taking part in twice as many fundraising rounds for US companies as they did in 2020.

Furthermore, there was an obvious shift in favor of Asian markets, especially those in China and India. Venture finance has become even more global, with sovereign investors supporting businesses from 33 different countries.

However, Beijing's resistance to Chinese initial public offerings (IPOs) in the US and the government crackdown on Big Tech have caused the Chinese market to fall since October. The government's efforts, which targeted the gaming and edtech industries out of fear for their expanding power, destroyed billions from startup valuations. Temasek should be especially concerned about this depreciation because it has higher exposure to China—27% of its portfolio—than to its domestic market.

Foreign investment in China's EdTech industry was prohibited in 2021, which presented serious difficulties for investors including Temasek, GIC, and the SoftBank Vision Fund 1 (SVF1), which held sizeable stakes on behalf of PIF and Mubadala. After successfully acquiring funds, startups like Kuaishou and Yuanfudao are now compelled to switch to non-profit structures, giving investors few choices.

Given their flexibility and extended investment horizons, it is anticipated that foreign investors will adjust to these risks rather than pull out of Chinese venture capital. Temasek, for example, keeps funding businesses like Didi Freight Unit and 3D printer WeNext in the biotech, life sciences, gaming, and e-commerce sectors.

The increased interest in Indian startups in 2021 was a noteworthy trend, fueled by the country's free market, swiftly changing digital economy, and high IPO valuations. Zomato, a meal delivery business, went public in July after raising US$ 0.6 billion from 186 anchor investors, including OMERS, ADIA, CPP, and GIC. Temasek, which contributed to Zomato's 2020 Series J financing, most likely made a sizable profit. Furthermore, Flipkart, the largest unicorn in India, strengthened its position as the e-commerce platform by raising US$ 3.6 billion in a funding round that included investors including ADQ, CPP, GIC, Khazanah, and QIA (GlobalSWF Reports, 2022). The Indian unicorns Byju's, Ola, Delhivery, PolicyBazaar, and Sharechat were also drawing interest from SOIs.

Investment in India carries some risk despite the opportunities, especially with loss-making firms and high valuations. If IPOs or private equity rounds don't live up to expectations, asset values could drop.
Temasek, for instance, experienced difficulties with the Indian ride-hailing app Ola as a result of diluting its stake following its decision to forego funding rounds and a subsequent 25% decline in valuation following the epidemic.
However, in the midst of China-India rivalry, India's status as a Western ally is anticipated to foster a regulatory climate that is advantageous to tech firms.
Other global VC ecosystems, such as those in Singapore (GIC, Temasek), France (Bpifrance), Canada (CDPQ, CPP, OMERS, and OTPP), and Abu Dhabi (ADQ, Mubadala), have also benefited from domestic SOIs (GlobalSWF Reports, 2022).
Even if it is lagging behind the US, the UK is nevertheless moving on with its agenda thanks to the Future Fund of the British Business Bank. For 2022, emerging markets with several partnerships, such as Brazil, Germany, Turkey, Indonesia, and Indonesia, appear promising.
Through Vertex Ventures, Temasek has played a leading role in the development of its venture capital strategy. Although the SOI world has tended to focus on later-stage venture capital, Temasek prioritizes early-stage investing, particularly in its local market.
Early-stage Series A and B rounds received 20% of Temasek's venture capital in 2021, up from 15% in 2020. Series C rounds accounted for 39% of the overall value and were the most common.
China and India now account for 25% and 23% of Temasek's venture capital investments, respectively, a substantial rise from 18% and 10% in 2020. Temasek has focused on fostering deep-tech innovation in Singapore in order to position the nation as a major hub for sophisticated manufacturing, foodtech, and the life sciences worldwide. Additionally, it is spawning inside businesses including cybersecurity firm Istari, travel pass software creator Affinidi, and AI solutions provider Aicadium. The government-backed SG Equity, which backs biopharma, medtech, and agtech businesses, complements these initiatives.

Unlike Temasek, GIC is required to make all of its investments abroad and concentrates on later-stage venture capital. GIC invested almost half of its venture capital funds in pre-IPO rounds, while just 7% went into Series A and B.
With 47% of its venture capital investments going to Indian startups, especially those in e-commerce platforms like Flipkart, Zomato, and Delhivery, these companies attracted the greatest interest. The USA came in second with 25%, mostly in Silicon Valley IT firms. The second-largest public pension fund in the world, NPS of Korea, has been investing more in venture capital outside of Singapore, with a goal of US$ 0.8 billion by the end of 2021. Although venture capital (VC) still makes up little over 1% of NPS's total AUM, suggesting room for future growth, the company is profiting on the successful IPO exits and the quick rise of Korean unicorns, dispelling its reputation as a conservative investor.
Significant progress has been achieved by Canadian funds in transaction origination, particularly in the last few years. They made a combined investment of US$ 5.2 billion in venture capital in 2021, which was double what they did the year before. CPP took the lead in this endeavor, allocating over half of that sum over the course of 23 funding rounds. Meanwhile, through its Teachers Innovation Platform (TIP), which was introduced in 2019, OTPP plans to raise its investments in startups by at least US$ 12 billion by 2026. Honored as one of the most seasoned public pension funds (PPFs) in the venture capital industry, OMERS celebrated the 10th anniversary of OMERS Ventures in 2021, with a strong emphasis on domestic entrepreneurs and the technology sector. Emerging companies like ADQ are making significant strides in the Gulf. Founded in 2020, ADQ transitioned from infrastructure to venture capital through the establishment of the Alpha Wave Incubation Fund and the purchase of equity in businesses located in India and Southeast Asia. Targeting businesses including Flipkart, PolicyBazaar, and Byju's in India; Getir and Trendyol in Turkey; and Amoun in Egypt, ADQ invested US$ 0.6 billion in venture capital in 2021.
ADQ's dedication to venture capital is demonstrated by the hiring of seasoned experts and the creation of ADG, a subsidiary with a VC concentration.

After SVF1 is fully implemented in 2020, seasoned venture capitalist Mubadala will concentrate on tech-related early-stage investments, taking a less risk-averse strategy. Series A and B rounds accounted for 43% of Mubadala's deal activity in 2021.
It is anticipated that Mubadala Capital's VC team will have even more autonomy following its spin-off as a fully-owned asset management company. Notable monetizations will also give Mubadala a sizable money reserve, such as the IPOs of GlobalFoundries and Yahsat in 2021. Twenty-five deals were completed by the four largest sovereign wealth funds (SWFs) in the Middle East through their venture capital activities in 2021. With half of these acquisitions, QIA led, outpacing its total activity from prior years, with investments in the US, India, Turkey, and the UK.
While KIA made investments in the developing startup ecosystem of North Africa, ADIA concentrated on providing late-stage capital for businesses in Indonesia and India (GlobalSWF Reports, 2022). Despite being less involved in venture capital than in prior years, PIF made considerable progress in July when Lucid Motors went public. PIF invested US$ 1.3 billion for a 63% ownership in Lucid in 2018, and by 2021, this holding was valued at US$ 41 billion, proving the liquidity and long-term investment horizon of SWFs provide them a competitive advantage in venture capital investing. Strategic funds bolstering domestic venture capital ecosystems were among the noteworthy venture capital operations in 2021. This included organizations stretching their missions to take advantage of the increasing momentum in local entrepreneurs, such as Bpifrance in France, ISIF in Ireland, RDIF in Russia, Khazanah in Malaysia (and China), and NIIF in India (GlobalSWF Reports, 2022).

Table 3.6 Top 5 SOIs by VC investments in the past 3 years (US$ billion)

	Fund	2019		Fund	2020		Fund	2021
=	Temasek	1.7	=	Temasek	2.1	=	Temasek	5.1
↑	Bpifrance	1.2	↑	CPP	1.1	↑	GIC	2.8
↑	OTPP	0.9	↑	ADQ	1.1	↓	CPP	2.7
↑	Mubadala	0.8	↑	GIC	1.0	↑	Mubadala	1.5
↓	GIC	0.4	↓	Mubadala	0.8	↑	QIA	1.2

Source: Global SWF Data Platform

High Risk

Although any venture capital investor is aware that risk is always present and that early-stage firms frequently experience high failure rates, the explosion of activity in 2021 begs the issue of how realistic values may be. Sovereign investors may easily absorb a certain amount of failure due to their large resources.

China's anti-Big internet campaign may serve as a model for similar measures in other countries where worries about privacy and the power of internet companies—particularly in social media—may affect the prices of startups that are attractive to sovereign investors. Because of their long-term goals, regulatory measures against monopolistic behaviors and data security risks are likely to endure; nonetheless, sovereign investors can afford to be flexible and patient.

To aid local entrepreneurs, Indonesia's INA and India's NIIF made their first venture capital investments in 2021. With the goal of bolstering national venture capital ecosystems, they are eager to establish connections with foreign sovereign investors. This strategy is comparable to Temasek's, which aims to improve national R&D and economic competitiveness by fostering homegrown technology. It is anticipated that venture funding from sovereign investors will continue to focus on Fintech, e-commerce, and biotechnology, with a growing emphasis on ESG (environmental, social, and governance) principles.

As a result, more money will be invested in climate change mitigation initiatives and ESG-related technologies. Disruptions to initial public offerings (IPOs) and exits for assets targeted by sovereign investors could result from regulatory changes impacting SPACs and public market volatility.

Listings may therefore be postponed in order to obtain higher appraisals. In response to current market conditions, we should expect a shift in venture capital investments from sovereign investors toward early- and growth-stage companies.

Region of the year: Australia

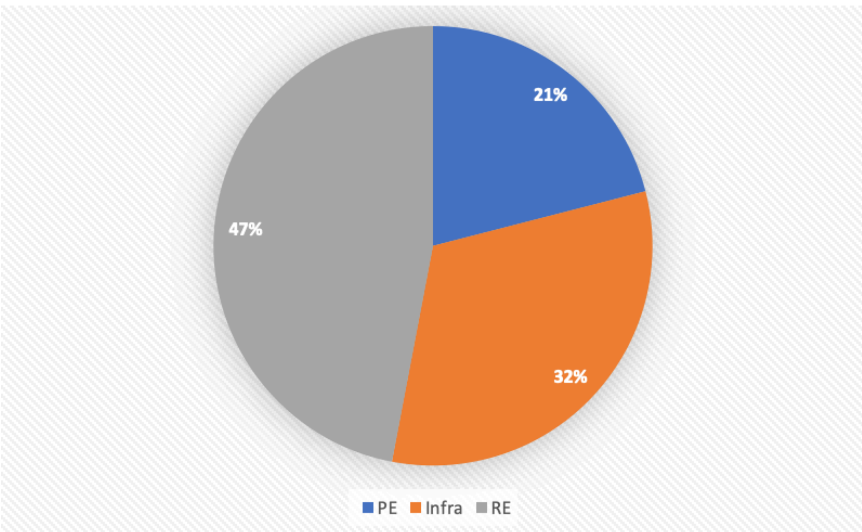
Australia attracted a record US$ 23.8 billion in real estate, infrastructure, and private equity investments in 2021, making it a top destination for state-owned investors.

As the government moves on with its infrastructure agenda, taking advantage of Australia's advantages in geography and resources to strengthen regional economic integration, Global SWF expects this trend to continue.

For overseas direct investments (SOIs) in Australia, real assets have always been the main attraction, and 2021 was no exception. Real estate made up 39% of the overall value for the year, infrastructure investments made up 47%, and private equity accounted for the remaining amount (GlobalSWF Reports, 2022). With 69% of the total investments made, foreign state-owned investors dominated the market. Since January 2016, Canadian pension funds, which account for 31% of all sovereign money invested in Australia, have been particularly active in the market. Several of these funds—OPTrust being the first to do so in 2013; OMERS, CDPQ, and CPP to follow in later years—have opened offices in Sydney.

2019 saw the entry of Dutch investor Bouwinvest, and 2022 will see the arrival of Singapore's GIC. CPP, CDPQ, OMERS, and OTPP invested more than US$ 2 billion in Australia in 2021. GIC, however, surpassed them all with a US$ 3.7 billion investment. GIC is the largest investor among sovereign funds, having invested over US$ 12 billion in Australia over the last six years (GlobalSWF Reports, 2022).

Graph 3.8 2021 AU by Industry



Source: Global SWF Data Platform

Due to the considerable participation of domestic funds, which frequently form consortia with foreign SOIs to bid on large assets, Australia distinguishes apart from other markets.

In 2021, Australia's sovereign wealth and superannuation funds accounted for US$ 1.2 trillion, with nine federal-level funds and eleven state-level funds having combined AuMs of US$ 736 billion and US$ 428 billion, respectively.

The Future Fund, AustralianSuper, and the recently established Australian Retirement Trust (ART), which is expected to grow to be the second-largest federal superannuation fund, are some of the most well-known and active federal funds. The biggest and busiest state-level investment corporations are Victoria Funds Management Corporation (VFMC), Queensland Investment Corporation (QIC), and NSW Treasury Corporation (TCorp).

Unlike other savings funds, The Future Fund invests more than 40% of its portfolio in alternatives, and it makes up for its lack of overseas offices by utilizing a robust worldwide network of asset managers. QIC is mostly focused on real assets and maintains a large global portfolio, whilst TCorp and VFMC are smaller and have a more domestic focus. AustralianSuper has a cautious approach to investing, holding liquid assets for 79% of its portfolio.Australia's logistics real estate market grew quickly, following worldwide trends in which Covid-19 hastened changes in consumer behavior. Notable were the domestic-foreign partnerships. For example, Ivanhoé Cambridge, a CDPQ affiliate, teamed up with AustralianSuper and TCorp to pay US$ 1.5 billion for the Moorebank Logistics Park.

GIC and CDPQ have local partners in ESR and LOGOS, respectively. Mubadala joined together with LOGOS and KKR to join the Australian logistics sector in April 2021. These partnerships give SOIs a foundation for comprehending the market and its potential and act as stepping stones for them to initiate their own deals. As such, it is anticipated that overseas SOIs would move from forming joint ventures with domestic SOIs and asset managers to forming their own teams and directing their own transactions.

Australia has a well-developed network of utilities and energy infrastructure, but there is still room for expansion, especially in the rapidly expanding renewable energy market. It is anticipated that the nation would progressively switch from coal-fired electricity generation to renewable energy sources, with solar and wind power taking the lead (GlobalSWF Reports, 2022).
Infrastructure improvements related to transmission and distribution as well as increased battery storage capacity will be crucial. In order to accommodate the growing popularity of electric vehicles and other new household electricity demands, there is a lot of pressure to upgrade the electrical system (GlobalSWF Reports, 2022).
The construction of new roads will be the main source of expansion in the transportation infrastructure. Road investment will be fueled by the government's 10-year US$ 79 billion Infrastructure Investment Programme (IIP), with SOIs probably expressing interest in strategically significant highways that link companies to both domestic and foreign markets. Railways, seaports, and airports will all continue to be very appealing to foreign sovereign investors, who have already made investments in assets like the Port of Brisbane (ADIA, CDPQ), the Port of Melbourne (CIC, GPIF, NPS, OMERS), and the NSW Ports at Botany and Kembla (ADIA) (GlobalSWF Reports, 2022).

Year 2022 in review

For State-Owned Investors (SOIs), 2022 turned out to be one of the most difficult years in recent memory. Russia's military invasion of Ukraine at the beginning of the year sent oil prices skyrocketing and inflation rates to levels not seen in forty years. Central banks responded by hiking interest rates in an effort to lessen the burden of inflation.

As the cryptocurrency bubble burst at the end of the year, bull markets that had bounced back quickly after the Covid-19 outbreak came to an end. In actuality, the value of Sovereign Wealth Funds (SWFs) declined in 2022 for the first time ever recorded. Global SWF projects the impact at about US$ 1 trillion, despite the fact that the precise size of the decline is debatable because many SWFs disclose their results either too slowly or not at all. Likewise, Public Pension Funds (PPFs) experienced a decline in assets of US$ 1.3 trillion, leading to worsening funding ratios. The main obstacle for 2022 was the simultaneous and large (>10%) fall in the stock and bond markets, which had not been seen in the previous fifty years. The FTSE 100 was the only major index to finish the year in positive territory, indicating that this downturn was not limited to the US but rather occurred globally.

The most well-liked safe havens turned out to be private credit and infrastructure, as the worldwide benchmarks for listed private markets also dropped precipitously.

Finally, hedge funds avoided significant losses and became more popular among sovereign investors as an asset class.

Table 3.7 Return of asset classes in 2021 vs 2022

Asset Class	2021	2022	Benchmark
Fixed Income	-0.8%	-14.8%	S&P500B
Public Equities	+19.3%	-18.7%	S&PGL1200
Real Estate	+42.5%	-28.4%	S&P500RE
Infrastructure	+8.4%	-3.7%	S&PGLInfra
Private Equity	+37.8%	-31.7%	S&PLPE
Hedge Funds	+9.6%	-3.6%	EH HFI

Source: S&P, EurekaHedge

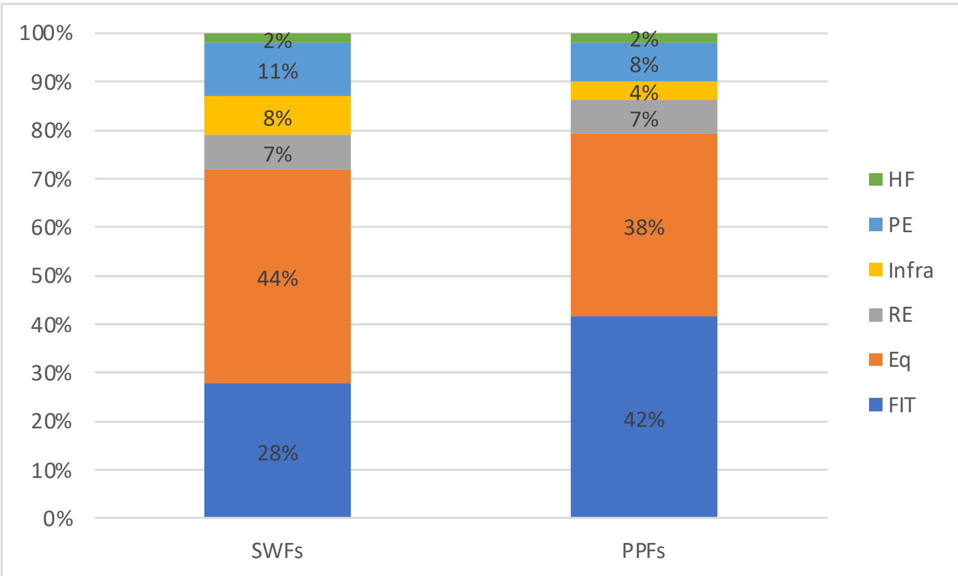
A list of the Top 50 sovereign investors in each of the main asset classes was released throughout 2022. These classes included Public Equities (Eq), Real Estate (RE), Infrastructure (Infra), Private Equity (PE), Fixed Income & Treasuries (FIT), Hedge Funds (HF), and the subgroups of Private Credit (PC) and Venture Capital (VC).

The table below, which shows the allocations for SWFs and PPFs by major area and asset class, presents the combined statistics.

Although noted, venture capital and private credit are not included in the totals because they are usually classified as part of the PE and/or FIT allocations.

The average allocations show that the two investor categories differ significantly: PPFs allocate only 18% of their assets to private markets and 82% of their assets to liquid markets, whereas SWFs allocate an average of 74% to liquid markets and 26% to unlisted real assets and private equity. This year's simultaneous decrease in bond and stock prices has caused a significant upheaval in asset allocation methods.

Graph 3.9 Allocation of funds



Source: Global SWF Data Platform. There are 11.4 trillion US dollars in total funds for SWFs and PPFs.

Table 3.8 Distribution of SOIs' investments by region and asset class

US$ trillion	FIT	Eq	RE	Infra	PE	HF	Total	VC	PC
Asia-Pacific	1,8	2,3	0,3	0,3	0,5	0,1	5,3	0,0	0,0
Middle East	0,8	1,7	0,4	0,5	0,6	0,1	4,1	0,1	0,0
Europe	0,4	0,8	0,1	0,1	0,1	0,0	1,5	0,0	0,0
Rest of World	0,1	0,1	0,0	0,0	0,1	0,0	0,4	0,0	0,0
SWFs	**3,2**	**5,0**	**0,7**	**0,9**	**1,3**	**0,3**	**11,4**	**0,1**	**0,1**
%	28%	44%	7%	8%	11%	2%			

US$ trillion	FIT	Eq	RE	Infra	PE	HF	Total	VC	PC
North America	7,5	2,8	0,6	0,3	0,9	0,2	12,2	0,0	0,0
Asia-Pacific	2,5	2,0	0,2	0,1	0,1	0,0	4,8	0,1	0,0
Europe	1,2	1,1	0,3	0,1	0,2	0,0	2,9	0,0	0,0
Rest of World	0,5	0,3	0,1	0,0	0,1	0,0	1,1	0,0	0,0
PPFs	**11,7**	**6,1**	**1,2**	**0,6**	**1,2**	**0,3**	**21,0**	**0,0**	**0,2**
Adjusted* %	36%	41%	7%	4%	8%	2%			

Source: Global SWF Data Platform. *Adjusted to exclude US federal funds OASDI, MRF and CSRDF, Which only invest in Treasuries

In 2022, state-owned investors deployed a larger amount of capital across fewer deals compared to 2021. This shift towards mega-deals resulted in an average transaction size of US$ 0.35 billion, a level not seen in over five years.

Sovereign Wealth Funds (SWFs) increased their investments by 38% to US$ 152.5 billion across 427 transactions, while Public Pension Funds (PPFs) decreased theirs by 9% to US$ 108.6 billion in 320 deals.

Once again, GIC was at the forefront, deploying US$ 40.3 billion in 2022, a 17% rise from 2021. With a noticeable emphasis on the European and North American markets, this Singaporean SWF regularly participates in some of the biggest transactions in the world, frequently collaborating with other SOIs and private equity firms.

Five Gulf funds, including QIA, PIF, and the three Abu Dhabi SWFs, continued to play important roles in the global dealmaking process after GIC. Canada continued to be an important destination for outbound capital although with lower activity than in prior years. The Top 10 investors' preferred regions changed in response to the changing financial and geopolitical environments.

Five funds have raised their shares in North America and three in Europe, despite ADQ's focus on emerging markets. The share of capital committed to developing economies has been as little as 20%.

Sector-wise, SOIs mirrored overall economic trends by allocating more funds to infrastructure (especially transportation), energy, industrials, financials, and consumer goods and services than to healthcare, consumer goods, and technology (especially venture capital). Investments in real estate stayed consistent.

The emergence of mega-deals, which are defined as investments surpassing US$ 1.0 billion, was the most notable development of 2022. With 60 mega-deals reported for the year, the average ticket size for SWFs hit levels not seen since 2016.

In spite of worldwide obstacles like unstable markets, inflation, and geopolitical unrest, sovereign investors were able to allocate unprecedented quantities of capital.

This resulted from increased activity among SWFs, especially Gulf SWFs supported by rising oil prices, and a tactical decision to prioritize mega-deals over venture capital in order to deploy huge amounts of capital effectively.

In 427 agreements, SWFs deployed a noteworthy US$ 152.5 billion, making this the second-most active year since 2014. SWFs made up seven of the top ten investors, and in 2022, their average deal size increased to US$ 357 million thanks to 41 mega-deals worth more than US$ 1 billion apiece.

PPFs, on the other hand, saw a decrease in both their volume(-16%) and investment value(-9%) in comparison to 2021. At US$ 340 million, the average deal size for PPFs stayed almost consistent. Remarkably, the "Maple 8"—Canada's eight biggest funds—represented half of the total value of investments and were active sellers all year long, offloading more than US$ 10 billion worth of assets.

Notable examples of collaboration among sovereign investors included ADIA and GIC, who together invested in assets in the US, China, India, and the Middle East, among other regions. Direct Chassis (GIC, KIA, OMERS) and Haddington ESP (GIC, AIMCo, OTPP) were two notable joint ventures. For the fifth year in a row, GIC remained at the top of the spender rankings, allocating US$ 40.3 billion in 73 transactions in 2022.

Table 3.9 Top 10 SOIs based on newly deployed capital during the four years (US billion dollars)

Fund	2019		Fund	2020		Fund	2021		Fund	2022
GIC	24.0	=	GIC	17.7	=	GIC	34.5	=	GIC	40.3
CPP	17.4	=	CPP	14.6	=	CPP	23.7	↑	ADIA	25.9
Temasek	13.7	↑	CDPQ	12.1	↑	Mubadala	14.5	↑	PIF	20.7
QIC	12.2	↑	Mubadala	11.9	↓	CDPQ	14.4	↑	Temasek	13.5
PIC	11.5	↓	Temasek	11.4	↑	APG	13.5	↓	CPP	12.1
ADIA	10.2	↑	NYSCRF	11.3	↑	OTPP	12.7	↓	Mubadala	11.3
NYSCRF	9.3	↑	ADQ	8.6	↑	OMERS	12.7	↓	CDPQ	10.3
CDPQ	8.0	↑	DP World	8.5	↑	ADIA	10.8	↑	ADQ	8.7
PSP	7.8	↑	NPS	7.9	↓	Temasek	10.6	↓	OTPP	7.9
Mubadala	7.6	↑	PIF	7.9	↓	ADQ	7.2	↑	QIA	7.1

Source: Global SWF Data Platform.

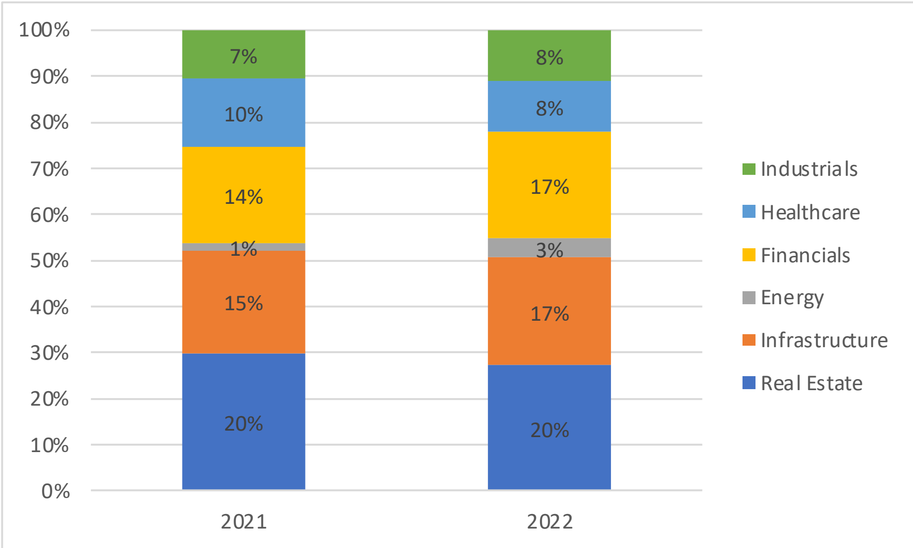
GIC is once again in the lead in the 2022 league table. The Singapore-based sovereign wealth fund completed 73 deals for US$ 40.3 billion, an increase of 17% over 2021. Over half of the funds were used for real estate ventures, mostly with a logistical focus. Furthermore, GIC invested in technology (9%), infrastructure (10%), and industrials (11%). With more than 69% of its investments located in North America and Europe, the fund maintained its bias for developed markets.

The Middle East is home to five of the 10 most active investors in 2022.

Investors in Abu Dhabi exhibited a variety of strategies: ADIA concentrated mostly on North America, Mubadala raised its stakes in Europe during the course of the previous year, and ADQ broadened its holdings throughout emerging countries.

The Public Investment Fund (PIF) of Saudi Arabia continued to operate at a high level both domestically and globally. As predicted by Global SWF projections from the prior year, Qatar's Qatar Investment Authority (QIA) also made a comeback to the top of the leaderboard with a very busy year.

Graph 3.10 Sectorial preferences of SOIs (#deals)



Source: Global SWF Data Platform, Percentage represent proportion of investment deals per year in each sector

The graph offered important insights into fund activity in 2022: as the pandemic subsided and venture capital underwent a recalibration, interest in infrastructure, energy, financials, and industrials increased, while healthcare, consumer goods, and technology showed a decline in momentum.

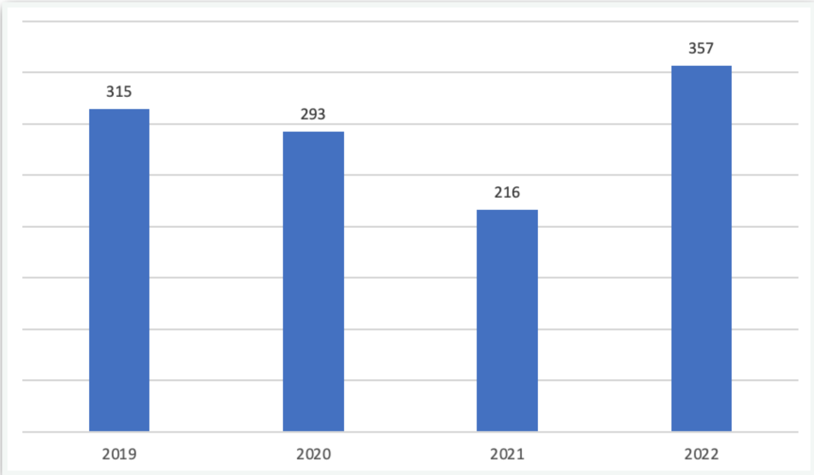
Real estate had a solid position at 20% of all investments, with office and residential buildings making up some of the ground they had lost recently to logistics.

<u>Mega-Deals</u>

Despite fewer transactions, SWFs deployed a notably higher amount of capital in 2022, mostly due to the comeback of mega-deals, or investments that total more than US$ 1.0 billion per transaction and fund. Actually, this year saw five of the biggest investments ever made by SOIs, most of which were in North America and Europe. For US$ 7.0 billion in January, Temasek purchased UK-based Element Materials from PE fund Bridgepoint. Autostrade per l'Italia was acquired by CDP Equity, Blackstone, and Macquarie for US$ 4.4 billion in May. Afterwards, GIC made large investments of US$ 3.9 billion in Canadian Summit with Dream Industrial REIT in September and US$ 7.0 billion in Store Capital in the US with Oak St. in November.

With an injection of $5 billion from the CDPQ in June—half of which came from the GOSI in December—the Jebel Ali free zone in Dubai became the first non-European or North American destination listed in this ranking.

Graph 3.11 Number of mega-deals during 2019-2022



Source: Global SWF Data Platform. Mega-deals refer to investments of US$ 1 billion or more

Fund of the year: Caisse de dépôt et placement du Québec (CDPQ)

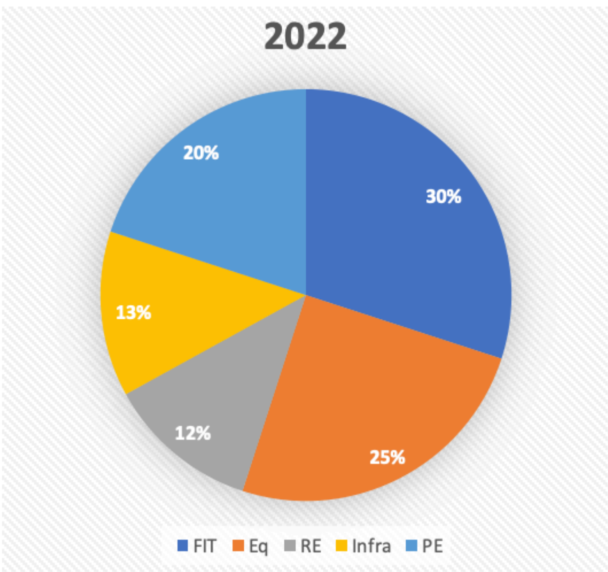
The Caisse de dépôt et placement du Québec (CDPQ) is unique in that it manages pension contributions as well as public funds, juggling two competing goals: maximizing financial returns and advancing the province's economy.

Three-quarters of the funds of the CDPQ are provided by three large pension plans: RREGOP, Finances Québec, and Retraite Québec. The CDPQ uses these money to make investments on behalf of 47 distinct depositor groups. It also oversees the finances of many insurance plans, including those related to health and vehicle insurance.

Blessed with an abundance of natural resources and a diversified economy centred on the service sector, Québec provides an ideal setting for the growth of CDPQ. If Quebec were a country, its economy would rank 42nd in the world. Having made major contributions to Québec's development over the years, CDPQ hopes to increase its investment from US$ 59 billion to US$ 74 billion (CAD$ 100 billion) by 2026. Before 2022, when international sovereign investors experienced significant losses, CDPQ had been steadily increasing its assets under management (AuM) for the previous fifteen

years. Even with a reported -7.9% loss in the first half of the year, the CDPQ beat both the global average of state-owned investors (-9.7%) and its benchmark (-10.5%).
One of the biggest, most active, and knowledgeable international investors in the world today is CDPQ. He has frequently been in the top 10 investors over the last ten years and has seized numerous opportunities to sell assets both domestically and internationally. According to worldwide statistics provided by the GlobalSWF, the CDPQ made around $10 billion in private investments in 2022.
The portfolio of CDPQ has changed dramatically as the company has grown as a global investor. Reducing the domestic portfolio to 26 percent of the total has favored securities and assets headquartered in the United States. The whole portfolio's percentage of Listed Equities dropped by 13%, with Infrastructure and Private Equity taking on more significance. With the ensuing 44% allocation to illiquid markets, CDPQ is comparable to OTPP and CPP in Canada as well as Temasek and Mubadala globally. Given that CDPQ intends to expand its infrastructure portfolio to 16% over the next four years, including initiatives in emerging economies that may change the geographic distribution, this trend is probably going to continue. In spite of this international orientation, CDPQ continues to be a major domestic investor, with plans to increase its portfolio in Québec from US$ 59 billion to US$ 74 billion (CAD$ 100 billion) by 2026.

Graph 3.12 CDPQ's focus by asset



Source: CDPQ's Global Investor Presentation

Asset class of the year: Hedge Fund

The average percentage of sovereign investors' investments in hedge funds increased from 1.0% in 2009 to a record high of 2.0% in 2022. In terms of absolute value, ADIA, CIC, and KIA are the biggest allocators, accounting for over half of all hedge fund investments made by sovereign wealth funds (SWFs).

With proportions similar to American endowment funds, NZ Super (20% of its entire portfolio) and Future Fund (17%) lead the group in terms of relative value.

Because of the public's scrutiny, public pension funds (PPFs) have historically been more cautious when investing in hedge funds.

A number of systems, including ISBI, NYCERS, and CalPERS, ended their absolute returns programs in 2016 because their management fees were "excessively high" in comparison to the returns. A target return of 8.8% is stated for the asset class in NYSCRF's 2022 report, with a five-year annualized return of 6.9%.

In spite of this, NYSCRF wants to raise its allocation to hedge funds from 2.1% to its desired 3.0%. The average PPF allocation to hedge funds increased to 1.6% as of 2022, while it was still less than that to SWFs.

When it comes to hedge fund investments, sovereign investors use a range of tactics from return-enhancers to diversifiers. Macro (Commodity Trading Advisors, active trading, currency plays), event-driven (merger arbitrage, distress), equity-hedge (basic growth and value), and relative value are some of the popular techniques.

When it comes to managing hedge fund investments, sovereign investors differ greatly in their choices of internal versus external management. Future Fund and ADIA, for example, outsource management to a large extent, whereas Alaska PFC manages the asset class nearly wholly internally. The advantages of in-house management are clear: as of March 31, 2022, New York Common had paid incentive and management fees to hedge fund managers totaling US$ 172 million, including US$ 68 million to D.E. Shaw. This amount represented 3.2% of the company's US$ 5.4 billion hedge fund portfolio.

A problem facing the hedge fund sector is the dearth of trustworthy performance measures, as industry sources' measurements differ greatly from one another. The greatest five-year return, +5.6%, was still much less than the annualized return of +7.4% for the S&P 500 during the same time frame.

Although the majority of sovereign investors agree that private markets, including private equity and infrastructure, have promising futures, there is less disagreement over the advantages of participating in hedge funds.

On the other hand, if fixed and variable income markets keep collapsing, it's plausible that more investors will diversify into hedge funds in 2023.

Table 3.10 HF Indices Returns

	CYTD22*	L5Y
HFRI 500	-2.6%	+4.8%
Equity Hedge	-11.2%	+4.3%
Event Driven	-5.9%	+4.9%
Macro	+14.3%	+5.6%
Relative Value	+0.4%	+3.5%
Low Beta	+3.0%	+3.5%
Fund of Funds MV	-5.0%	+3.6%
EurekaHedge HFI	-3.7%	+5.2%

Source: HFRI, Eurekahedge. *CYT22 refers to 11 months ending on Nov 30, 2022

Region of the Year: Indonesia

Indonesia, a country of 260 million people, is a market that is impossible to ignore since it grows quickly. The economy has been growing quickly; in 2022, GDP growth will be higher than 5%. Strong private consumption, increasing investment, and double-digit export growth have propelled this expansion and aided in the nation's continuous change.

Though there's no guarantee Indonesia won't be impacted by volatility in the global market, especially from surges in energy prices, sovereign investors see enormous potential and promising futures for the giant of Southeast Asia.

Indonesia's primary funding sources are currently international sovereign wealth funds and public pension funds.

Around $15 billion in foreign state-owned investment has been drawn to the nation from a variety of asset classes and industry niches, including e-commerce, real estate for logistics, and oil and gas.

Prior to 2019, Mubadala's offshore exploration activities in the Andaman and West Sebuku blocks were the main source of capital flow for sovereign investors into the oil, gas, and petrochemicals sectors.

However, as the government gave priority to the growth of the transportation industry and the establishment of the startup ecosystem, the focus soon turned to infrastructure and private equity.

Global SWF data shows that infrastructure accounts for 49% of sovereign investors' investments, followed by private equity (42%), and real estate (10%). Venture money, which was allocated US$ 2.0 billion within the private equity sector, fueled the fast expansion of fintech and e-commerce firms in Indonesia. Notable investments include Traveloka, Bukalapak, Tokopedia, and Gojek (which have since combined to form GoTo). The remainder of the investment activity was focused on direct investments made either through co-investments or private equity funds.

The 22% of the investment value is attributed to Singapore's Temasek, with GIC coming in at 9%, Abu Dhabi's ADIA at 7%, Canada's CDPQ at 6%, and Qatar's QIA, Malaysia's Khazanah, and China's CIC at 5% apiece. Significant investment is also being driven by Indonesia's own new strategic sovereign wealth fund, INA, mostly in infrastructure and the transition to green energy.

Industry of the year: Infrastructure

Sovereign fund investment in infrastructure is encouraged by a number of variables, particularly in periods of increased risk and energy transition. Infrastructure is desirable in hard times because it is a tangible asset with residual value.

It also provides steady long-term cash flows that match state-owned investors' intergenerational investment horizon.

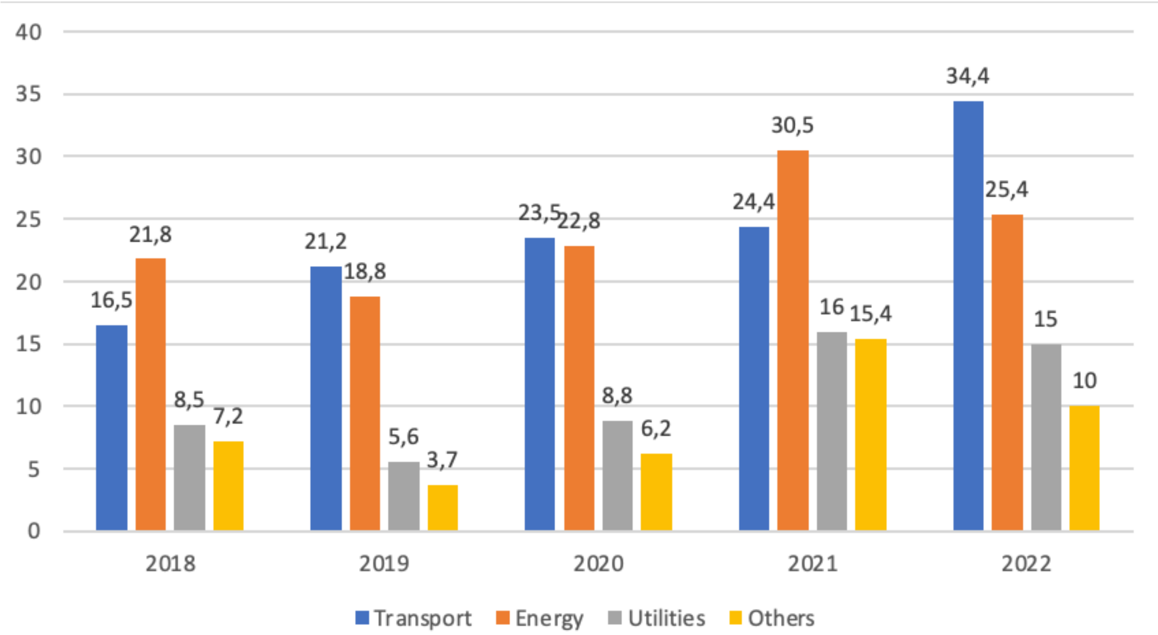
Inflation-indexed fees are common for regulated assets like utilities and toll roads, acting as a hedge against inflation.

This is a particularly important advantage when inflationary pressures are high. Telecommunications and digital infrastructure are essential to the quickly growing digital economy.

In the meanwhile, sovereign investors are seeking to reach net zero targets, decarbonize their portfolios, and take advantage of government support for the energy transition, which is driving up demand for renewables.

State-owned investors can also increase the value of their holdings and diversify their portfolios by investing in infrastructure. Infrastructure, in contrast to venture capital, has a high entry barrier that stifles competition and gives operators a monopoly position in the market. Due to these causes, infrastructure allocations by sovereign investors increased in 2022, reaching a total of US$ 34.4 billion, a rise in transportation assets of US$ 10 billion. Investments in renewable energy have been steadily increasing for the past seven years, while investments in oil and gas infrastructure have decreased. In the short to medium term, it is anticipated that these numbers will continue to rise sharply as monies are allocated to aggressive environmental targets. Utilities saw a prosperous year as well, seeing the sale of many significant assets to sovereign investors, including AusNet, TAQA, and DEWA.

Graph 3.13 SOI investments in Infrastructure (US $ Billion)



Source: Global SWF

Finally, sovereign investors made seven sizable investments in telecom towers during the year, demonstrating their strong level of activity in both developed and emerging economies. Through external managers, the less active and staffed pension funds from North America and Europe were exposed to the business and committed substantial amounts of capital to general funds run by companies such as Blackrock, Stonepeak, GIP, Macquarie, Brookfield, KKR, and ISQ.

An surge in infrastructure spending is being driven by high inflation.

Telecommunications businesses are under pressure to fortify their balance sheets in the utilities sector as rising interest rates drive up expenses and encourage asset sales that sovereign investors may be able to profit from.

Similar to this, investors are looking for companies in the digital infrastructure space that support sustainability objectives, long-term profits, and technology breakthroughs. Significant investment in renewable energy is also anticipated, particularly in Europe, which is expediting its low-carbon energy transition and is susceptible to disruptions in the energy supply.

Cost pressures from inflation are the primary impediments to industry expansion, since materials needed in the renewables sector—from minerals for utility-scale batteries to refined metals for wind turbines—are expected to climb quickly in response to growing demand.

In 2023, more projects will reach final investment decisions due to the demand for energy security and high energy prices, providing new opportunities for sovereign investors. But in an effort to draw in investors, governments will increase subsidies and decrease regulations to offset these costs.

While Europe has unique difficulties, other markets—such as energy-rich nations like Saudi Arabia and Egypt—show comparable patterns. Here, sovereign investors are actively contributing to the rerouting of fossil fuel revenue toward solar energy projects.

3.3 The Norwegian Fund and the Evolution of Alternative Investments

When Norway found oil in the North Sea, the Government Pension Fund Global was founded. The fund was established to protect the economy from fluctuations in oil revenue. In order to ensure that Norway's oil riches benefits both the present and future generations, it also acts as a long-term savings plan and financial reserve. Off the coast of Norway, one of the biggest offshore oilfields in the world was found in 1969 (NBIM, Annual Report 2024). Suddenly, they had a lot of oil to sell, and the economy of the nation took off. Early on, it was determined that prudent usage of oil and gas money would prevent economic imbalances. The Government Pension Fund Global was established in 1990 when the Norwegian parliament passed legislation in support of it. The fund received its first contribution in 1996. It was determined that the fund should solely be invested overseas, as the name implies (NBIM, Annual Report, 2024).

Although Norway has relied heavily on oil money, the oil will eventually run out. The fund's objective is to guarantee that they use this money sensibly, plan forward, and protect the Norwegian economy's future in the process. Even though the fund receives revenue from the production of oil and gas, these reserves make up less than half of the fund's total worth.The majority has been acquired through investments in fixed income, real estate, renewable energy infrastructure, and stocks. With about 1.5 percent of all shares in publicly traded businesses worldwide, the fund has grown to become one of the biggest in the world. This indicates that they own stakes in about 9,000 businesses globally, making them eligible for a tiny annual profit share (NBIM, Annual Report, 2024).

Furthermore, the fund owns hundreds of properties in some of the most prestigious cities in the globe, which bring in rental income. Additionally, the fund earns a consistent stream of money from lending to nations and businesses.

They lessen the chance of the fund losing money by dispersing their investments widely. Though the fund is only available for a limited amount of use each year, it nonetheless accounts for roughly 20% of the Norwegian government's annual budget.

On the best way to manage the money, most politicians agree. They will be in a better position to handle downturns and crises in the future if they spend less now (NBIM, Annual Report, 2024).

Funds are used to address budget deficits; surpluses are remitted to the fund. Put differently, the government can spend more during difficult times and less during prosperous ones.nPoliticians have reached a consensus on a fiscal guideline that guarantees they won't spend more than the fund's anticipated return in order to make sure the fund helps as many people as possible in the future (NBIM, Annual Report, 2024). The true return on the fund, which is projected to be about 3 percent annually, is the only amount that the government is allowed to spend on average. In this sense, the economy only progressively incorporates oil earnings. Simultaneously, the fund's capital is not spent; only the return is. Ensuring the longevity of Norway's national wealth is the fund's primary responsibility.

Because of the highly long-term perspective of its investments, it can withstand significant short-term value changes. As the fund manager acting on behalf of the people of Norway, the objective is to maximize return while assuming minimal risk in order to ensure the fund's longevity and growth.

Table 3.11 Return of Alts in the portfolio

	2022		2021		2020		2019	
	Return	%of the fund	Return	% of the fund	Return	%of the fund	Return	% of the fund
Real Estate	-14,10%	4,40%	18,60%	4,60%	-5%	3,80%	10,40%	4,10%
Unlisted real estate	0,10%	2,70%	13,60%	2,50%	-0,10%	2,50%	6,80%	2,70%
Listed real estate	-30,80%	1,70%	26,80%	2,10%	-14,90%	1,30%	20,90%	1,40%

Source: NBIM Annual report

In 2019, the real estate industry saw a strong return of 10.40%, accounting for 4.10 percent of the total. The non-quoted properties had a return of 6.80%, or 2,70% of the total, whereas the quoted properties demonstrated a noteworthy return of 29,90% with a latency of 1.40 percent. 2020 will see a 5% decline in real estate prices, bringing their total weight down to 3,80% of what it was in the past.

The unquoted real estate investments have maintained a certain level of stability with a low yield of -0.10%, but their overall weight has increased to 2.50%.

The listed real estate, on the other hand, has suffered a significant decline, with a return of -13.10% and their presence in the fund has been reduced to 1.30%. This decline can be attributed to market volatility and uncertainties caused by the COVID-19 pandemic. 2021 saw a recovery in real estate, with a return of 18.60% and a growth in the fund's weight to 4.60%. Unlisted real estate also posted a positive return of 13.60%, contributing to 2.70% of the fund. The listed real estate achieved an impressive return of 26.80%, although their share in the fund was 1.90%.
This year of recovery may reflect economic stabilisation and increased investor confidence. In 2022, real estate had a negative return of -14.10%, but their weight in the fund is increased to 4.40%. Unlisted real estate remained substantially stable with a yield of 0.10% and their weight at 2.70%. The listed real estate again showed a negative performance, with a return of -30.80% and a reduction in their share to 1.40%.
Global concerns, including geopolitical issues and inflationary pressures, are to blame for these swings in 2022. In summary, real estate investments have continued to play a significant role in the fund even during times of significant volatility. While listed assets are more volatile yet have the potential for large rewards during market growth stages, unlisted assets seem to offer some stability during uncertain times.

Table 3.12 Return on the fund's unlisted real estate investments in percentage points

	Since 01.04.2011	2022	2021	2020	2019
Rental income	3,7	3,1	3,4	3,4	3,6
Change in value	1,2	-3	9,8	-3,5	3,1
Transaction costs	-0,7	-0,1	-0,1	-0,2	-0,1
Currency effect	0,2	0,1	0,2	0,3	0,1
Total (percent)	4,3	0,1	13,6	-0,1	6,8

Source: NBIM Global Annual report

Looking at the data on returns from the fund's unlisted real estate investments from 2019 to 2022, interesting dynamics can be observed in each of the components considered. Rental income, which is crucial for cash flow generation, showed a solid 3.6% in 2019. This figure slightly decreased in 2020 to 3.4%, probably due to the economic difficulties imposed by global lockdowns.

Relative stability in 2021, still at 3.4%, was supported by the economic recovery, while in 2022 there was a slight decline to 3.1%, potentially linked to changes in lease dynamics and economic uncertainties.

The change in value of investments has fluctuated considerably. In 2019, the 3.5% increase reflected an expanding market, but in 2020 it fell to -3%, highlighting the volatility and uncertainty generated by the pandemic. The upturn in 2021 with an impressive 9.8% is testimony to resilience and a return of confidence in the real estate markets. However, 2022 saw a drop to -3%, symptomatic of global economic challenges and a possible market correction. Transaction costs during this period had a relatively negligible impact on total returns, showing only slight fluctuations. As regards the effect of currencies, the small changes observed are due to exchange rate fluctuations, which have a marginal influence on total yield.

Finally, when analyzing total return in percentage terms, 2019 saw a positive 6.8%, mainly driven by value growth and solid rental income. The year 2020 saw a sharp decline to -0.5%, reflecting economic difficulties and the decrease in property values due to the pandemic. In 2021, total return recovered to a remarkable 13.6%, thanks to substantial value gains and stabilized rental income. However, in 2022 there was a decline to 0.1%, resulting from a combination of value declines and a slight decline in income.

This analysis highlights how global economic conditions have influenced the return on real estate investments, underlining the importance of active management and strategic adaptation to changing market dynamics. The ability to navigate through periods of economic uncertainty are crucial for the long-term success and sustainability of unlisted real estate investments.

Table 3.13 Fund's unlisted RE investments by sector as at 31 Dec 2022-2021-2020-2019

	2022	2021	2020	2019
Office	53,7%	54,6%	57,2%	56,5%
Logistics	34,2%	32,4%	26,0%	21,9%
Retail	11,7%	12,3%	16,4%	18,2%
Other	0,4%	0,7%	0,5%	3,4%

Source: NBIM Annual report

Investment by Sector

In 2019, unlisted real estate investments were mainly distributed between offices (51.50%), logistics (26.90%) and retail (18.20%). The larger share in offices reflected stability and continued demand for traditional retail spaces, although increasing digitalisation was beginning to change dynamics. Logistics accounted for 26.90%, benefiting from the expansion of e-commerce. The retail sector, with 18.20%, was in a more vulnerable position due to the increasing competition from online sales.

Moving to 2020, we see a slight shift with offices at 54.10% and logistics at 23.20%. The pandemic has accelerated the trend towards remote work, but not enough to decrease the share of offices, underlining the importance of these spaces for business needs. The retail share fell to 16.90%, reflecting restrictions and difficulties for traditional trade.

In 2021, the office share remained stable, while logistics rose slightly to 25.20%, probably in response to the continued positive trend of e-commerce. Retail further declined to 12.70%, highlighting the continued pressure that traditional retail sales were facing. Finally, in 2022, there is a significant increase in logistics investments to 34.20%, suggesting a clear pivot towards this growing area. Offices have maintained a share of stable at 50.70%, while retail investment fell further to 11.70%. This reflects strategic adaptation to new economic realities and changes in the behaviour of consumers.

Table 3.14 Fund's unlisted RE investments by country as at 31 Dec 2022-2021-2020-2019

	2022	2021	2020	2019
US	51,8%	50,1%	46,8%	48,5%
UK	16,4%	17,8%	18,1%	21,2%
France	16,5%	17,1%	19,3%	17,9%
Germany	5,0%	3,9%	4,0%	3,4%
Switzerland	3,4%	3,6%	2,9%	3,5%
Japan	2,4%	2,6%	3,3%	1,4%
Other	4,5%	4,8%	4,6%	4,2%

Source: NBIM Annual report

Investment by country

In terms of geographical distribution, the US accounted for 48.50% of investments in 2019, followed by the UK with 21.20%. This demonstrates the attractiveness and Perceived safety in established markets. France and Germany followed with 16.90% and 4.40%, respectively, underlining the interest in the main European markets.

In 2020, the US share increased to 52.40%, perhaps due to the perception of future economic stability and growth. The UK saw a slight increase, reflecting the resilience of the UK post-Brexit market. France and Germany maintained similar positions.

2021 saw substantial stability in the geographical weights, with a slight recovery of Japan to 2.00%, indicating a potential increase in interest in more stable Asian markets.

In 2022, investment in the US further increased to 53.70%, while Germany saw a significant increase to 8.50%, suggesting a new focus on central European markets. The UK and France have seen slight declines, signaling policy adjustments in response to local economic conditions.

The trend of these investments reflects a strategic adaptation to global economic conditions, sectoral and regional dynamics, and changes in consumer habits, Underlining the importance of reflexivity and diversification in managing a sovereign wealth fund.

Table 3.15 Fund's ownership shares for the listed RE investments as at 31 Dec 2022-2021-2020-2019

Company	Country	Ownership %	Holding in mill. Kron
2022			
Vonovia SE	Germany	14,60%	26908
Alexandria RE equities Inc	US	9,50%	22376
Equity Residential	US	8,10%	17901
Invitation Homes Inc	US	6,20%	11061
Welltower Inc	US	3,50%	10810
Regency Centers Corp	US	9,40%	9936
AvalonBay Communities Inc	US	4,40%	9813
American Tower Corp	US	1,00%	9705
Prologis Inc	US	0,90%	9418
UDR Inc	US	7,20%	8971
Boston Properties Inc	US	8,10%	8427
Simon Property Group Inc	US	2,10%	7869
Federal Realty Investment Trust	US	8,90%	7160
Gecina SA	France	9,30%	7159
Equinix Inc	US	1,20%	7008
Public Storage	US	1,30%	6504
Crown Castle Inc	US	1,10%	6212
American Homes 4 Rent	US	5,80%	6100
Segro PLC	UK	5,50%	6032
Mid-America Apartment Communities Inc	US	3,00%	5307
2021			
Vonovia SE	Germany	11,10%	42007
Alexandria RE equities Inc	US	8,70%	26449
Equity Residential	US	8,00%	24001
Shaftesbury PLC	UK	25,70%	7267
Great Portland Estate plc	UK	15,40%	3399
Regency Centers Corp	US	9,40%	10725
Capital & Countries Properties plc	UK	15,00%	2568
Derwent London plc	UK	9,60%	4376
Vornado Realty Trust	US	9,40%	6660
UDR Inc	US	5,80%	9553
Boston Properties Inc	US	8,30%	13206
Land Securities Group Inc	UK	9,20%	6308
Federal Realty Investment Trust	US	9,20%	8649
Gecina SA	France	9,30%	8811
JBG SMITH Properties	US	9,00%	2966
British Land Company plc/The	UK	8,80%	5187
Kilroy Realty Corp.	US	7,80%	5308
Svenska Cellulosa AB SCA	Sweden	7,20%	7892
Hudson Pacific Properties, Inc	US	6,00%	1995

Source: NBIM Annual report

Company	Country	Ownership %	Value mill. Kron
2020			
Shaftesbury PLC	UK	25,8%	6588
Capital & Countries Properties plc	UK	15,0%	2166
Great Portland Estate plc	UK	13,1%	2590
Federal Realty Investment Trust	US	9,5%	5241
Vonovia SE	Germany	9,5%	33654
Regency Centers Corp	US	9,5%	6297
Vornado Realty Trust	US	9,4%	5765
Gecina SA	France	9,4%	9455
Derwent London plc	UK	9,2%	3730
Land Securities Group Inc	UK	9,2%	5328
Deutsche Wohnen SE	Germany	9,1%	15031
Paramount Group Inc	US	9,0%	1539
JBG SMITH Properties	US	8,8%	3136
British Land Co PLC/The	UK	8,8%	4674
Alexandria RE equities Inc	US	8,6%	17731
Boston Properties Inc	US	8,4%	10516
Kilroy Realty Corp.	US	7,9%	4451
Equity Residential	US	7,7%	14577
Svenska Cellulosa AB SCA	Sweden	7,2%	7558
Kleppierre SA	France	4,9%	2831
Unibail-Rodamco-Westfield	Nethelands	4,4%	4130
Hudson Pacific Properties Inc	US	4,1%	1269
Douglas Emmett Inc	US	3,4%	1475
Mitsubishi Estate Co Ltd	Japan	3,2%	6061
Essex Property Trust Inc	US	3,1%	4123
Swiss Prime Site AG	Switzerland	2,7%	1695
Avalonbay Communities Inc	US	2,6%	5069
Sunstone Hotel Investors Inc	US	2,4%	492
Aroundtown SA	Germany	2,3%	2291
PSP Swiss Property AG	Switzerland	2,3%	1209
2019			
Shaftesbury PLC	UK	25,9%	8765
Capital & Countries Properties plc	UK	11,2%	2916
Great Portland Estate plc	UK	10,8%	2733
JBG SMITH Properties	US	9,8%	4597
Vornado Realty Trust	US	9,4%	10535
Gecina SA	France	9,4%	11246
Deutsche Wohnen SE	Germany	9,1%	11790
Paramount Group Inc	US	8,7%	2432
Vonovia SE	Germany	8,7%	22400
Boston Properties Inc	US	8,4%	15736
Federal Realty Investment Trust	US	8,2%	6998
Kilroy Realty Corp.	US	8,2%	6380
Land Securities Group Inc	UK	7,5%	6449
Svenska Cellulosa AB SCA	Sweden	7,2%	4537
Equity Residential	US	6,4%	16889
Derwent London plc	UK	6,3%	3264
Regency Centers Corp	US	6,0%	5611
Alexandria RE equities Inc	US	5,7%	9346
British Land Co PLC/The	UK	5,2%	3591
Unibail-Rodamco-Westfield	Netherlands	4,4%	8461
Kleppierre SA	France	3,1%	3170
Essex Property Trust Inc	US	2,4%	4265
Avalonbay Communities Inc	US	2,0%	5244

Source: NBIM Annual report

Analysis of Ownership Shares

In 2019, the fund concentrated its listed real estate investments mainly in large US companies such as Prologis Inc and Equinix Inc, with large ownership shares of 9.88% and 9.07%, respectively. This market orientation reflected a desire to reap the benefits of economic and technological growth in the US. The presence of investments in Vonovia SE in Germany with 6.92% demonstrated an interest in stable European real estate markets.

In 2020, despite the global economic disruptions due to the pandemic, the fund maintained a significant investment in reality like Prologis Inc, slightly expanding the share to 10.00%. This can be seen as an act of trust in the logistics infrastructure, which has gained importance with the acceleration of e-commerce. Investment in Vonovia SE has remained steady, while other companies such as Digital Realty Trust Inc in the US have seen participation increase, suggesting a positive assessment of the data center industry during the pandemic.

With the arrival of 2021, the fund has expanded its holdings in institutions such as Goodman Group in Australia, and other key companies reflecting growing exposure to Asia-Pacific markets. This diversification represents a strategic response to the global economic recovery, seeking to exploit growth in emerging markets and technologically advanced areas.

Finally, in 2022, while global economic challenges such as inflation and geopolitical tensions affected markets, the fund moderately reduced some holdings like that in Prologis Inc, maintaining a balanced global portfolio. Investments in Vonovia SE remained stable, while the presence in other smaller companies was reorganised to mitigate risks related to global economic instability.

The data from 2019 to 2022 shows a careful and reactive investment strategy by the Norwegian sovereign wealth fund, which is characterised by a balance between stability and technological innovation. In a context of economic uncertainty and global change, the fund has demonstrated its capacity to adapt through well-calibrated geographical and sectoral diversification. Annual quota adjustments reflect a continuous assessment of market conditions, aimed at maximizing returns and mitigating risks, often anticipating emerging economic and technological trends. This approach underlines the need for flexibility and proactivity in managing a sovereign wealth fund’s listed real estate investments.

Table 3.16 Investment methods' contributions to the fund's relative return in 2022-2021-2020-2019 in percentage point

	Equity manag.	Fixed-income manag.	Real Asset manag.	Allocation	Total
2022					
Market exposure	0,11	0,05		0,01	0,16
Asset positioning	0,08	0,04		0,01	0,13
Securities lending	0,03	0			0,03
Securities selection	0,05	0,04			0,09
Internal security selection	0,03	0,04			0,07
External security selection	0,01				0,01
Fund allocation	0,2	0,36	0,04	0,03	0,64
Systematic factors	0,08				0,08
RE			0,02		0,02
Unlisted RE			0,37		0,37
Listed RE			-0,35		-0,35
Enviromental related mandates	-0,02		0,02		0,01
Allocation	0,14	0,36		0,03	0,53
Total	0,36	0,44	0,04	0,04	0,87
2021					
Asset management	0,18	0,03		0	0,21
Asset positioning	0,14	0,03		0	0,17
Securities lending	0,03	0			0,04
Securities selection	0,19	-0,01			0,18
Internal security selection	0,12	-0,01			0,1
External security selection	0,07				0,07
Fund allocation	0,16	-0,03	0,33	-0,09	0,36
Systematic factors	0,15				0,15
RE			0,31		0,31
Unlisted RE			0,16		0,16
Listed RE			0,15		0,15
Enviromental related mandates	0		0,01		0,01
Allocation	0,01	-0,03		-0,09	-0,11
Total	0,53	-0,02	0,33	-0,09	0,74

Source: NBIM Annual report

	Equity manag.	Fixed-income manag.	Real Estate manag.	Allocation	Total
2020					
Fund allocation	-0,03	-0,01	-0,64	0,01	-0,67
Reference portfolio	-0,24	-0,01		0,01	-0,24
of which systematic factors	-0,35				-0,35
RE			-0,64		-0,64
Unlisted RE			-0,25		-0,25
Listed RE			-0,39		-0,39
Allocations	0,2	0			0,2
of which enviromental mandates	0	0,01		0	0,01
Securities selection	0,59	0,12			0,71
Internal security selection	0,37	0,12			0,49
External security selection	0,22				0,22
Asset management	0,12	0,11		0	0,23
Asset positioning	0,07	0,1		0	0,17
Securities lending	0,03	0,01			0,04
Total	0,68	0,22	-0,64	0,01	0,27
2019					
Fund allocation	0,02	0	-0,16	0,02	-0,12
Reference portfolio	-0,07	-0,01		0,01	-0,08
of which systematic factors	-0,11				-0,11
RE			-0,16		-0,16
Unlisted RE			-0,19		-0,19
Listed RE			0,04		0,04
Allocations	0,09	0,01	0	0,01	0,11
of which enviromental mandates	0,08	0			0,08
Securities selection	0,19	-0,03			0,16
Internal security selection	0,16	-0,03			0,13
External security selection	0,03				0,03
Asset management	0,13	0,06		0	0,19
Asset positioning	0,08	0,05		0	0,13
Securities lending	0,05	0,01			0,06
Total	0,33	0,03	-0,16	0,02	0,23

Source: NBIM Annual report

Analysis of the Relative Performance Contributions

In 2019, the total relative return contributions from investment strategies were moderate. The stock selection strategy had a neutral impact, with a near-zero contribution reflecting market-conform performance. The strategic allocation also showed limited contribution. However, asset management has contributed positively, suggesting effective management of the fund's resources.

In 2020, the data show a significant increase in stock selection, which contributed negatively by -0.41 percentage points. This reflects the market volatility caused by the COVID-19 pandemic and the difficulties in identifying the right stocks in an uncertain environment. The strategies for risk allocation and systematic factor selection made a positive contribution, demonstrating adequate management of systemic risks during a year of economic turbulence.

2021 saw a change with a strong performance of stock selection, which contributed positively, suggesting a recovery in the ability to identify growth opportunities in post-pandemic markets. Asset management also saw an improvement in its contributions, indicating effective operational and financial management of the portfolio.

In 2022, asset allocation and selection strategies had a neutral or negative impact, showing the difficulties of navigating in an environment characterized by high inflation and geopolitical tensions. The allocation of environmental and social risk continued to be moderate, highlighting a greater focus on ESG in investment decision-making despite external pressures.

The evolution of yield contributions from 2019 to 2022 reflects the sovereign fund's ability to adapt to changing market conditions. The fluctuating contribution of stock selection highlights the cyclical challenges, influenced by global crises such as the pandemic and subsequent economic disruptions.

Risk management strategies have, however, shown some resilience, adapting quickly to external shocks. The growing focus on environmental, social and governance (ESG) criteria underlines the strategic importance attached to these factors in the search for sustainable performance. Overall, this analysis demonstrates the importance of a flexible and integrated investment strategy that embraces both short-term performance dynamics and long-term sustainability considerations.

Final Comments

Norway's Government Pension Fund Global is a paradigmatic example of sovereign wealth management, with a sophisticated asset allocation architecture and a deep commitment to long-term economic sustainability. The data analysed confirms the fund's ability to mitigate risks associated with energy sector volatility, resulting from its dependence on oil revenues, and highlights the importance of the geographical and sectoral diversification of its investments.

In the context of real estate investments, the distinction between listed and unlisted assets emerges as crucial. Unlisted investments ensured relative stability during the market fluctuations induced by the COVID-19 pandemic, while listed assets, while exhibiting higher volatility, have provided significant growth in periods of economic expansion. This dual approach demonstrates a sophisticated understanding of market dynamics and the importance of a well-balanced portfolio.

The sectoral evolution shows an increase in the exposure to logistics, fueled by the expansion of e-commerce, and a corresponding decrease in the retail sector, subject to competitive pressures from online sales.

This strategic reorientation reflects informed forecasting and adaptation to emerging market needs. Geographically, the fund has consolidated its presence in markets perceived as stable, such as the US and Germany, demonstrating its ability to adapt flexibly to changing global economic conditions. Variations in geographical distribution reflect policy decisions to optimise returns in a dynamic macroeconomic environment. The incorporation of ESG (environmental, social, and governance) factors, which highlights the commitment to responsible and sustainable investment, is another important tenet of the fund's strategy. This strategy guarantees that the fund contributes positively to global issues like social justice and climate change in addition to encouraging prudent risk management.

In conclusion, the management approach of the Government Pension Fund Global, which takes into account both economic profitability and social responsibility, embodies the core principles of modern public finance.

The successful paradigm for intergenerational economic sustainability is highlighted by the combination of creative investment ideas and responsible governance. In the face of a constantly shifting global environment, other sovereign entities might use this case study as a guide to develop robust and adaptable strategies that will preserve and grow collective wealth.

Chapter IV — Conclusions

4.1 Summary of the main findings

The COVID-19 pandemic has had a significant impact on the landscape of state-owned investors (SOIs), resulting in a notable decline in invested capital and forcing these investors to reevaluate their investment strategies.

When the pandemic hit in 2020, the SOIs had to deal with numerous logistical challenges that significantly affected their business operations. For many directors, the requirement to obtain approvals from committees without physical unions has made the investment process even more difficult. As a result, caution has become the general feeling among SOIs, particularly the sovereign wealth funds (SWFs), who have to make the necessary payments with potential capital demands in order to address the budget imbalance.

The comprehensive investment activities of the SWFs saw a noticeable decline in 2020, with a reduction of 33% in invested money, falling to 83,7 billions of dollars in 280 transactions compared to 2019 levels. This decline may be attributed to the growing caution by SWFs, who were aware of the potential economic benefits and the fiscal challenges following the pandemic.

However, the Public Pension Funds (PPFs) have shown a divergent trend, with a little increase in both the volume and value of operations, reaching 78.6 million dollars in 223 transactions. This resilience among PPFs highlights their steady capital flow and ability to maintain investment pace even during economic downturns.

The SWF, drawing lessons from the 2008 financial crisis, have adopted a "don't waste a good crisis" approach during the pandemic. Development funds such as Mubadala, PIF, and Temasek have demonstrated agility in quickly acquiring important assets. This proactive approach is in contrast to the most sought-after strategy employed by savings funds such as ADIA, CIC, GIC, and QIA during the previous financial crisis.

One observable trend has been the revaluation of asset allocations in response to market conditions that are now present. Real assets, especially property and infrastructure, have had a significant experimental impact on the efficacy of treatments aimed at reversing recessive impacts. In 2020, the real asset SWF transactions accounted for only 29% of the total, down from 38% in 2019.

There has been a noticeable shift away from luxury hotel chains and high-end urban real estate, with growing interest in logistics, data centers, warehouses, employee housing, and student housing. This strategy turn aligns with the volatile dynamics of the global economy, giving priority to resilient sectors immune to pandemic-related disruptions.

The comparison between the global financial crisis of 2008 and the COVID-19 pandemic reveals the evolution of SOI over the past 25 years. Assets under management for the SOI grew from $13.8 trillion in 2008 to $27.5 trillion in 2020, reflecting a doubling of their financial resources.

Over this time, there has also been a noticeable increase in the allocations to alternative investments, rising from 12% to 24%. This change highlights the growing sophistication of SOI, which have developed into experienced and strategic investors capable of risk, strategy, and allocation valuation.

The turbulent landscape of investments in 2020 has witnessed some significant transactions despite the lower composite volumes. One of the largest single transactions was carried out by Dubai World, which regained 20% of DP World's share on the Nasdaq Dubai. On the same day, CDPQ changed its participation to Bombardier in Alstom's operations, achieving an operational position worth $3,1 million.

Other significant transactions included the ADIA investing $2.8 million in elevator technology and the CPP investing $2.8 million in pattern energy. Mubadala has also made a significant contribution to an Apollo-managed prestitious platform worth $12 million dollars.

The investment behavior monitored in 2020 highlights the significance of liquidity, strategic longevity, and adaptability in managing large private and public funds.

The ability of SOI to control allocations and seek out robust sectors throughout market volatility is seen in several of their evolving strategies.

While traditional asset classes faced challenges with market volatility and valuation, the shift toward technology, logistics, hygiene, and private financing demonstrated an adaptive approach to risk management and opportunity recognition.

The pandemic has accelerated the trend of SOIs emerging as sophisticated investors who no longer fit the stereotype of "dumb money".
Changes in investments and strategic reorganizations show a dedication to long-term value development and a thorough awareness of the dynamics of the global market. These tactics will probably keep evolving, bolstering SOI's capacity for development and resilience in the wake of the epidemic.
2021 proved to be an exceptional year for state investors as the world's corporate markets kept rising from their March 2020 lows. The S&P 500 index more than doubled, the Dow Jones Industrial Average increased by 90%, and the S&P Global 1200 index increased by 86% in response to this downward trend. With a large amount of exposure to US equities, sovereign wealth and public pension funds have profited greatly, realizing some of their best returns.
The SWF sector has surpassed 10 trillion dollars in assets, growing at a rate of 6% annually, while PFF sector has grown to exceed 20 trillion dollars. The boom has been supported by rising gasoline prices and expanding business markets. Notwithstanding the general market recession, there has been a notable variation in the activity class results. The only significant class of activities that have seen negative returns are financial holdings, as demonstrated by the worldwide obligation benchmark S&P 500 index. In contrast, the individual companies have continued to have a strong performance, as evidenced by the S&P Global 1200 index.
Hedge funds have once again undervalued themselves in comparison to businesses, while private markets, with their inherent valuation bias, have witnessed the rise of real estate as the most performing asset class in 2021, closely followed by private equity.
This year has marked the beginning of a new phase, known as State-Owned Investors (SOIs) 3.0, which follows several evolutionary phases. Initially, until 2008, the sole pools of capital (SOIs 1.0) functioned independently. The subsequent decade, from the global financial crisis to the COVID-19 pandemic (SOIs 2.0), has witnessed a notable increase in investments and activities.

By 2021, the industry will have transitioned to SOE 3.0, which is characterized by a growing interest in venture capital, a shift in preferences toward real-world activities, and a notable increase in investment volume.
Even if the number of transactions has increased, the total transaction values have shown a less noticeable variation. In 2021, the sovereign wealth funds achieved a record with 500 different investments, demonstrating a significantly evolved behavior. Despite this increase, total investments have not reached the 2016-2017 highs, largely due to SoftBank's and Mubadala's structural increases.
The average size of the investments made by the sovereign funds has decreased to 212 million dollars from 522 million dollars in 2016. PPFs have experienced their best year yet, both in terms of volume and value, surpassing 110 billion dollars for the first time. This growth has been guided by funds such as CPP, GIC, and others; of them, CPP alone has invested close to $24 million in 76 transactions.
An example of excellence in 2021 was Mubadala, which demonstrated its transition from origins as a development fund to global strategic investors. In 2021, Mubadala's diversified portfolio expanded to over 50 countries, making a significant contribution to the EAU's economic engine in line with Abu Dhabi's Vision 2030.
Mubadala's structural upgrade at the beginning of 2021 has demonstrated the company's shift from its traditional approach to one based on technology and alternative investments.
Unquestionably, the asset class of the year was venture capital, which had a sharp increase in value due to the high number of unicorns and decacorns. The rise in this data has been led by the SOIs, with venture capital investments rising from 81% to a record $18,2 million. A large range of worldwide start-ups have been supported by them, with a particular focus on the technology, healthcare, and digital transformation sectors.
Australia is emerging as the top destination for foreign direct investments in 2021, attracting a record $23.8 million in real estate, infrastructure, and private equity investments. This flow has taken use of Australia's geographic advantages and resources, with infrastructure investments accounting for 47% of the total and real estate accounting for 39%.

The intense activity in 2021, particularly in venture capital, makes the market risks and valuations realistic.
The elevated failure rates of early-stage startups highlight the inherent risk associated with risk capital investments. However, the investors' solid financial resources and strategic flexibility enable them to manage and absorb potential losses.
Furthermore, regulatory developments, particularly the Chinese government's suppression of advanced technologies, may indicate similar actions in international markets and have a potentially significant impact on the evaluation of State-of-the-Art investments in technology. Despite these challenges, long-term goals and adaptable strategies of sovereign investors provide a buffer against short-term market fluctuations.
To sum up, 2021 was a year of significant growth and strategic evolution for state investors.
The flexibility exhibited by these investors in reducing the scope of their activities and increasing their stake in developing markets highlights the dynamic nature of global investments in dynamic market conditions. With an emphasis on emerging technologies, risk capital, and strategic regional investments, SOIs are well-positioned to navigate next economic landscapes. 2022 was among the most challenging years for state investors in recent memory. The Russian invasion of Ukraine has created geopolitical unrest that has resulted in a dramatic increase in oil prices and the greatest rates of inflation seen in the previous forty years.
As central banks responded by raising interest rates to curb inflation, the global economic landscape became increasingly unstable. SWFs have experienced a decline in value, with an estimated value of approximately one trillion dollars, however the figures remain disputed due to late or incomplete data disclosure from several external funds.
Also, PPFs have seen a decline in their wealth of $1.3 trillion, resulting in a deterioration of their financing coefficients.
This trend is observed outside the United States, encompassing the main global indicators, with the exception of the FTSE 100, which has closed the year in positive territory. Strong global refining parameters for quoted private markets have led to the emergence of private credit and infrastructure as safe refuges.

However, hedge funds have managed to avert significant losses, positioning real estate as a preferred class of investment among foreign investors.
In 2022, state investors have shifted their focus, allocating larger amounts of resources to fewer number of operations. This preference for mega-offers has led to a medium-sized transaction volume of roughly 0.35 million dollars, a level not seen in more than five years. The SWF increased their investments by 38% to $152.5 million in 427 transactions. On the other hand, PPFs investments have decreased by 9% to 108,6 million dollars in 320 operations. GIC has led once again, employing 40,3 billion dollars, with an increase of 17% regarding the 2021.
The revival of mega-deals, investments above 1 billion dollars, was a remarkable trend in 2022. There have been 60 mega-deals reported in total, sparked by the increasing activity among the SWF, particularly those in the Gulf supported by the high prices of petroleum. Changes have also affected infrastructure, energy, industrial and financial investments, reflecting increasingly broad economic trends. Remarkable joint ventures, ADIA and GIC have co-invested in activities in several regions, indicating more cooperation among foreign investors.
The top portion of the 2022 ranking was dominated by GIC, which completed 73 transactions for a total of $40,3 million.
With significant investments in the industrial sector as well as logistics, real estate accounted for more than half of this capital. A request for suggestions for a new research and development plan has been released by the European Commission.
Five of the initial fifty investors were based in the Middle East and employed a variety of strategies: While ADQ has boosted its market share in emerging economies, Mubadala has increased its investments in Europe, while ADIA is primarily focused on North America. Canada has emerged as a major hub for emerging capital, even though activity has decreased from prior years.
The speculative funds are emerging as the year's class of activities, with a median allocation of supranational investors reaching a record of 2.0%, up from 1.0% in 2009.

The largest investors, such as ADIA, CIC, and KIA, have represented about half of all SWF hedging investments. Although they are traditionally more conservative with their investments in hedge funds, public pension funds have also increased, with a median allocation of 1.6%.

Investors outside of the country have employed a variety of strategies for hedge funds, including macro, equity-hedge, event-driven, and value-based approaches.

Some have chosen internal management, while others have chosen external management, demonstrating the many approaches within the industry.

Lack of reliable performance indicators remains a challenge, with the highest quarterly return of +5,6%, yet behind the S&P 500's annualized return of +7,4%.

In 2022, Indonesia will stand out as a rapidly developing market with a PIL growth rate above 5%. The foreign investors have contributed about 15 million dollars to several sectors, including e-commerce, real estate, and logistics. The focus has shifted from gas and oil to private equity and infrastructure, stemming from the government's emphasis on transportation and startup ecosystems.

The most significant investors are CDPQ from Canada, GIC, ADIA from Abu Dhabi, and Temasek from Singapore. Infrastructure investments have been very favorable for supranational funds in 2022, particularly in an environment of high risk and energy transition. This type of activity offers tangible residual value and predictable financial flows, making it appealing in the event of economic difficulties.

Investments in regulated activities, such as commerce in education and public utility services, have provided a hedge against inflation. The transportation industry has seen a 10 billion dollar increase in benefits because to investments in renewable energy sources that maintain a strong upward trajectory.

The year 2022 was a testament to the resilience and adaptability of state investors in the face of unprecedented challenges. The shift in strategy towards mega-deals, increased infrastructure activity, and larger allocations to hedge funds have demonstrated the evolution of the investment landscape. Despite the global economic boom, savers have managed to distribute record amounts of cash, highlighting their critical role in directing long-term investment policies and economic development.

The emphasis placed on infrastructure, risk capital, and emerging markets demonstrates the dynamic nature of SOIs strategies and positions them to navigate effectively through future uncertainties.

4.2 Practical implications and possible future research

This thesis presents an overview of the many types of SWFs in existence today and describes their different investment behavior. Geopolitical and financial developments of a tectonic scale are changing the investing world, and SWFs have emerged as important global investors (Megginson, Malik, Zhou, 2023).

Studying SWFs should increase our direct understanding of these investment vehicles but may also offer a unique perspective into how different economies around the world view their development in relation to global financial markets.

With that being said, the literature on SWFs can be extended in two main directions. First, more research can investigate the effect of SWF ownership on stakeholders beyond shareholders (Megginson, Malik, Zhou, 2023).

Direct causal evidence, however, may be difficult to arrive at since SWFs tend to be passive investors and prefer screening rather instigating CG change.

It may also be interesting to quantify empirically when SWF funded projects are likely to be allowed to go ahead by the target nation.

Current literature on this topic seems limited to case studies. To answer such a question, engagement with the legal literature may be necessary, as many target nations have enacted committees to screen foreign investment due to national security fears.

The COVID-19 pandemic has demonstrated that SWFs have been called to help the domestic economy in times of financial crisis (Megginson, Malik, Zhou, 2023).

Beyond explicit bailouts by SWFs, what other benefits do funds hold for the domicile country? A second research direction is thus to analyze the impact of SWFs on their domestic economy as well as investments into emerging economies.

SWFs have formed South-South partnerships and it will be interesting to see the role government organized investments can play in the economic development of other emerging economies.

SWFs investments can perhaps be contrasted with developmental aid, since SWFs can play a major role in infrastructure (Megginson, Malik, Zhou, 2023).
Supply chain and manufacturing issues during and after the pandemic have raised new concerns to diversify and increase resilience. In a 2021 survey by McKinsey, 93% of respondents said that they intended to make their supply chains far more flexible, agile, and resilient. SWFs have recently started investing more in infrastructure, extending our analysis, 42% of total infrastructure deals before 2020 were done in developed countries and the rest in developing and transition economies (Megginson, Malik, Zhou, 2023). However, during and after 2020, only 28% of infrastructure deals were done in developed countries. While it is difficult to ascertain if these investments were made to diversify supply chains, without looking at each infrastructure investment in detail, the results provide some indication that SWFs may be using infrastructure investments to diversify their national supply chain from disruptions (Megginson, Malik, Zhou, 2023).
Over the last decade, we have observed how the asset allocation of SWFs has shifted towards riskier alternative assets in private equity and venture capital, with a special focus on the most innovative sectors.
This thesis has explored the field of investment performance within this asset class to understand what are some of the driving factors, acknowledging that the venture capital industry as a whole has been suffering a severe correction since the last quarter of 2021. The analysis provided a list of the relevant deal and round-specific factors that can help explain differences in investment performance (Megginson, Malik, Zhou, 2023).
And finally, while investment rounds led by SWFs were less successful than those from other institutional investors, the performance gap has decreased over time. These insights can provide grounds to gain a deeper comprehension of what makes the investment strategies of SWFs successful and potentially benefit a wide range of sovereign stakeholders.

Bibliography

- Bernardo Bortolotti, Veljko Fotak, William L. Megginson, “The rise of sovereign wealth funds: Definition, organization and governance”, 17 Dec 2014, link: https://baffi.unibocconi.eu/sites/default/files/media/attach/SWF-PPP-Palgrave-1.pdf
- Javier Blas, Protecting Nigeria oil SWF is no easy task, Financial Times, October 10, 2013, link:https://www.ft.com/content/69325c28-2440-11e3-a8f7-00144feab7de
- Global SWF, 2024 Annual Report, SOIs Powering Through Crises, 2024, link: https://globalswf.com/reports/2024annual#executive-summary-1
- Sameer Jain, “Integrating Hedge Fund Strategies in Sovereign Wealth Portfolios” Citi Capital Advisors, November 2009, link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1769222
- Transparency International, Corruption perception index, 2023, link: https://www.transparency.org/en/cpi/2023
- Heritage Foundation, Economic Freedom Index, 2024, link: https://www.heritage.org/index/pages/all-country-scores
- Linaburg-Maduell Index, Sovereign Wealth Fund Index, 2024, link; https://www.swfinstitute.org/research/linaburg-maduell-transparency-index
- IWG, International Working Group of SWFs, Sovereign Wealth Funds, Generally accepted principles and practices, “Santiago Principles”, October 2008, link: https://www.ifswf.org/sites/default/files/santiagoprinciples_0_0.pdf
- Morningstar, Amy C. Arnott, “How to Use Alternatives in Your Portfolio”, February 20, 2024, link: https://www.morningstar.com/alternative-investments/how-use-alternatives-your-portfolio
- CFA Institute, “Introduction to Alternative Investments”, 2023, link: https://www.cfainstitute.org/membership/professional-development/refresher-readings/introduction-alternative-investments

- Morgan Stanley, Michael J. Mauboussin, Dan Callahan, “Public to private equity in the United States: a long-term look”, August 4, 2020, link: https://www.morganstanley.com/im/publication/insights/articles/articles_publictoprivateequityintheusalongtermlook_us.pdf
- McKinsey & Company, “Private markets rally to new heights. McKinsey Global Private Market Review 2024”, March 28, 2024, link: https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/mckinseys-private-markets-annual-review
- Andonov Aleksandar, “Delegated investment management in alternative assets”, May 11, 2022, link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2458224
- Ivashina V, Lerner J, “Looking for alternatives: pension investments around the world, 2008-2017”, August 24, 2018, link: https://www.bostonfed.org/-/media/Images/research-conference-2018/presentations/ivashina-lerner- presentation.pdf
- Amenc N, Martellini L, Ziemann V, “Infation-hedging properties of real assets and implications for asset-liability management implications”, 2009, link: https://www.newyorkfed.org/medialibrary/media/research/conference/2009/inflation/Amenc_Martellini_Ziemann.pdf
- De Fontenay E., “The deregulation of private capital and the decline of the public company”, 2017, link: https://scholarship.law.duke.edu/faculty_scholarship/3741/
- Ewens M, Farre-Mensa J, “The deregulation of private equity markets and the decline in IPOs”, 09 May 2020, link: https://academic.oup.com/rfs/article/33/12/5463/5835291
- Biesinger M, Bircan C, Ljungqvist A, “Value creation in private equity”, 24 Sep 2020, link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607996
- Begenau J, Liang P, Sirwardane E, “Unpacking the rise in alternatives”, 11 May 2022, link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4105813
- Merrill Lynch, “Consider the Alternatives—Beyond Stocks & Bonds”, 1 July 2020, link: https://www.pbigsit1.ml.bac-assets.com/articles/what-alternative-investments-are-right-for-me-old.html

- Hedge Fund Research, HFRI® world Index, 2024, https://www.hfr.com/family-indices/hfri/
- Elmar Björnsson, Ragnar Már Hannesson, "How interest rates impact the allocation of alternative investments", 16 May 2022, link: https://research-api.cbs.dk/ws/portalfiles/portal/76441939/1352924_Final_EB_RMH.pdf
- Secondaries Investor, Hannah Zhang, "Secondaries market records second biggest year ever-Evercore", 17 January 2024, link: https://www.secondariesinvestor.com/secondaries-market-records-second-biggest-year-ever-evercore/
- New Direction Company, "Interest Rates and Their Impact on Alternative Investments", 15 November 2023, link: https://ndtco.com/blog/interest-rates-and-their-impact-on-alternative-investments/
- Thomas Young, "Inflation and Alternative Investments", 6 October 2022, link: https://www.rocketdollar.com/blog/inflation-and-alternative-investments
- David Prosser, "It's Been A Dark Time For Alternative Assets. That May Soon Change", 30 November 2023, link: https://finimize.com/content/why-alternative-assets-may-be-worth-a-second-look
- Global SWF, Annual Report 2023, link: globalswf.com
- Global SWF, Annual Report 2022, link: globalswf.com
- Global SWF, Annual Report 2021, link: globalswf.com
- KKR Global Institute, "Regime Change: The Role of Private Equity in the 'Traditional' Portfolio", March 2023, link: https://www.kkr.com/content/dam/kkr/insights/pdf/regime-change-private-equity-march-2023.pdf
- William L. Megginson, Asif I. Malik, Xin Tue Zhou, " SWFs in the post pandemic era", 12 April 2023, link: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10092925/
- NBIM, Annual Report 2019, link: https://www.nbim.no/contentassets/3d447c795db84a18b54df8dd87d3b60e/spu_annual_report_2019_en_web.pdf
- NBIM, Annual Report 2020, link: https://www.nbim.no/contentassets/fd871d2a4e2d4c1ab9d3d66c98fa6ba1/annual-report_2020_government-pension-fund-global_web/

- NBIM, Annual Report 2021, link: https://www.nbim.no/contentassets/f8c5e301ff804c09881b1beb5299dc30/gpfg-annual-report-2021.pdf
- NBIM, Annual Report 2022, link:https://www.nbim.no/contentassets/99de366397a847db99ab7a156e15aaa0/gpfg_annual-report-2022.pdf
- NBIM, Annual Report 2022, link: https://www.nbim.no/en/publications/reports/2024/half-year-report-2024/
- World Economic Forum. 2015. "Alternative Investments 2020 - An Introduction to Alternative Investments." Retrieved May 29, 2022 (https://www3.weforum.org/docs/WEF_Alternative_Investments_2020_An_Introduction _to_AI.pdf)
- S. Trimborn, M. Li, and W. K. Härdle, "Investing with Cryptocurrencies - A Liquidity Constrained Investment Approach", 19 July 2017, link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2999782