



2022 ANNUAL REPORT

“State-Owned Investors 3.0”

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Diego López, Founder and
MD of Global SWF

I am delighted to present you our second Annual Report, launched on January 1 with absolutely no reporting delay. At Global SWF, our mission is to lead the research and analysis of the activities of the world's major State-Owned Investors, by producing timely and insightful data and by staying relevant and independent. And we are uniquely positioned to do so, after providing services on the ground for many years and by nurturing a close relationship with all the important players.

Covering sovereign investors is both fascinating and challenging. On the one hand, they are intrinsically linked to their hosting economies and finances and there are usually more issues at stake than just pursuing superior returns. On the other hand, because of their global and heterogeneous nature, everything that goes on in the world, from geopolitics and pandemics, to climate change and technological disruption, unequivocally affects them. The industry is always evolving and can change significantly in a single year.

2021 was no exception. The world failed to get “back to normal” despite getting 4.5 billion people vaccinated against Covid-19 and entered a situation of great uncertainty that affected economies in different manner. Global GDP may have grown a 5.9%, but there is a general sense of discontent and insecurity among the population. COP26 highlighted the urgency of stopping global warming and of tackling resource scarcity. Other key concerns throughout the year included growing poverty, inequality, geopolitical tensions, rising energy prices, supply chain disruption, and inflation rates we had not seen in the West in three decades.

In that context, Sovereign Wealth Funds and Public Pension Funds continue to operate cautiously. The heterogeneity of the industry was magnified by the pandemic as some funds were asked for capital and / or for domestic bailouts, while others pursued opportunities overseas and greatly benefited from the stock rally. The line between asset owners and asset managers is becoming blurrier, with rising collaboration among them. SOIs are also looking at asset classes, regions, and industries in very different manner now. We argue that the pandemic has indeed marked a new phase, which we call **State-Owned Investors 3.0**.

At Global SWF, we were very busy and worked extremely hard to stay on top of it all. We have written 250 proprietary and original articles that were posted publicly on our website every weekday of the year, for anyone to read. Every first day of the month, we also distributed insightful newsletters to our clients, including interviews with the funds' C-suite, and we released the first-ever mobile app to track SOIs' daily activities. And all this has not gone unnoticed: our Data Platform is now trusted by a few dozen global clients including several SWFs; we have over 4,000 active followers in our social media channels; and we have been mentioned more than 200 times by the international media, including FT, WSJ, Reuters, Bloomberg, and Forbes.

We did much more than feeding our Data Platform and collaborating with media partners, though. We submitted formal academic articles to the *Annual Review of Financial Economics* and to the *Journal of International Business Studies*, delivered presentations at the UK Parliament in London and at the OECD in Paris among others, and completed several projects. I am particularly proud that we helped Framtiden and Fossielvrij identify the opportunity cost of not investing in green stocks for GPF and ABP. After publishing our findings, the latter committed to divesting US\$ 17 billion in fossil fuels by the first quarter of 2023.

I would like to take the opportunity to thank all team members – in particular, Daniel Brett – who have worked tirelessly to meet commitments and deadlines, as well as our esteemed advisory council, which has proven to be an effective sounding board to keep us on track. Also, our work would have not been possible without the excellent doing of our three partner-firms, Appoly, Odyssey, and Vizualytiks. We firmly believe in the global aspect of our business and have now team members, advisors and partners in all continents.

Please enjoy our annual report and we look forward to continuing our dialogue in the year ahead.

Happy 2022!



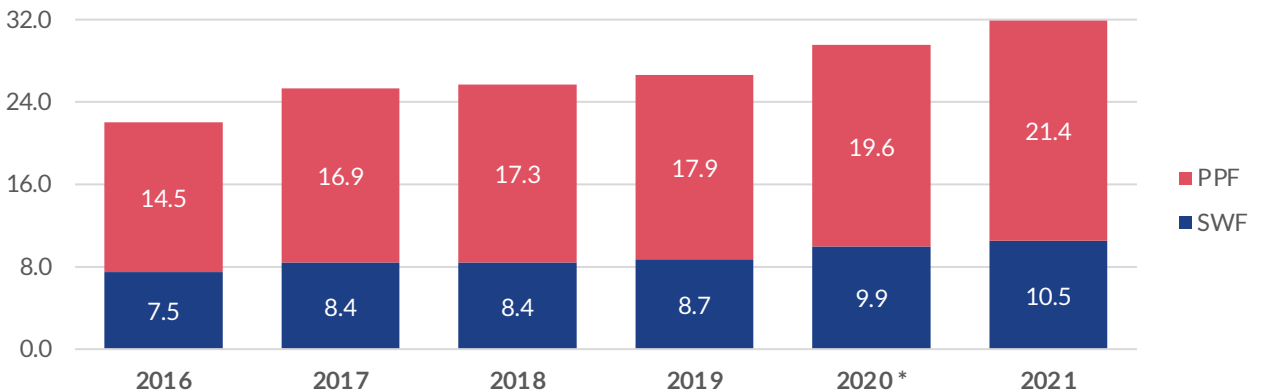
1. Executive Summary



2021 was yet another formidable year for state-owned investors. Global stock markets, especially US stock markets have not stopped going up since March 16, 2020. In the 21 months to the end of 2021, the S&P500 has more than doubled, the Dow Jones Industrial Average grew 90%, and the S&P 1,200 Global Index was up 86%. And, for better or for worse, sovereign wealth funds and public pension funds still have a very significant exposure to American stocks – which has allowed most to score their best ever results, and to boost their AuM.

The size of the SWF industry increased a 6% year-on-year in 2021 and exceeded the US\$ 10 trillion mark for the first time in history. This was not only helped by the price of equities, but also by the recovery of oil prices, and to a lesser extent by new funds established during the year. Public pension funds also accomplished a historical milestone after growing past the US\$ 20 trillion and experienced a higher y-o-y growth of 8.7% due to increased exposure to US stocks, and to rising contributions from pensioners around the world.

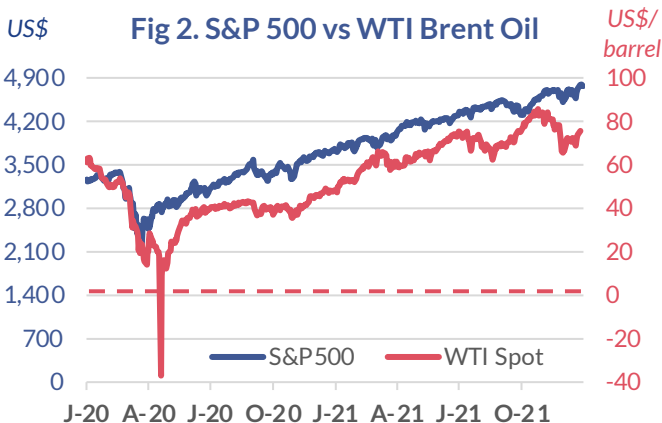
Figure 1. SWF & PPF AuM (US\$ trillion)



Source: Global SWF Global Track at <https://globalswf.com/>

* The 2020 figures have been adjusted with the official results published by the funds after Jan 1, 2021

There was a big disparity between the performance of the different asset classes during 2021. Fixed Income was the only asset class with negative returns, as measured by the S&P 500 Bond global index. Public equities continued to display a strong performance, according to the S&P Global 1,200 index. Hedge funds disappointed again with returns significantly below stocks. Private markets are always more difficult to track as SOIs do not necessarily carry out valuations every quarter, and if they do, they have certain lag. Yet, according to indices of listed companies, real estate was best performing asset class of 2021, followed closely by PE.



Source: Yahoo Finance, EIA

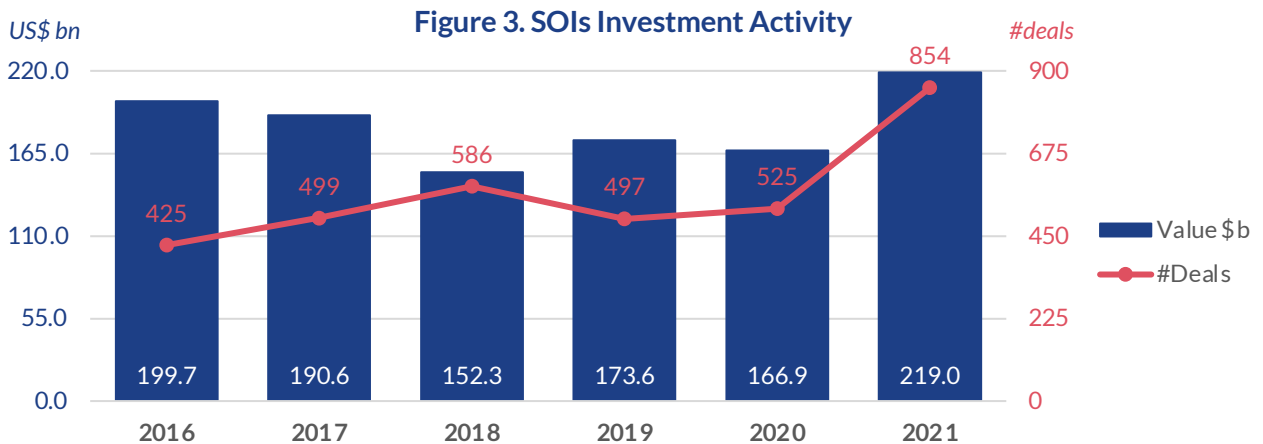
Table 1. Return of asset classes in 2020, 2021

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



In 2021, state-owned investors deployed more capital than in any of the previous six years – both in terms of number of deals and in terms of deal value, which was over US\$ 219 billion. Compared to 2020, SWFs deployed 19% more, with **US\$ 106.1 billion** in 500 transactions; while investments by PPFs increased significantly in terms of both value and volume, up to **US\$ 112.9 billion** in 354 deals.



Source: Global SWF Data Platform. Figures include private market transactions and sizeable and long-term equity deals, and exclude domestic developments and Government transfers

GIC was again miles ahead of everyone else. The Singaporean SWF deployed US\$ 34.5 billion in 110 deals, almost double of what it did in 2020. Almost half of that capital was invested in real estate, with a clear bias to logistics. The next biggest spender was **CPP** with US\$ 23.7 billion, of which 61% was invested in real assets. Interestingly, both funds present a strong preference for North American assets and a smaller than average appetite for Emerging Markets. Other Top 10 funds including **ADIA** and **Mubadala** think differently.

Emerging markets only attracted 22% of the capital this year, one of the lowest figures in six years, to the benefit of Developed Asia-Pacific. Another key trend during the period 2016-2021 was the change in SOIs' sectorial preferences. In 2016, over half of the deals were in the real assets. Today, that figure has decreased to a third of the total. The industries that have gained importance are, not surprisingly, healthcare, retail and consumer, and technology. All three sectors are touched by the magic wand of Venture Capital.

But not everything was private markets. Sovereign funds are now very active in **stock markets** around the world, and some have started diversifying away from the US markets. After the shopping spree of March 2020, **PIF** changed its strategy and consolidated its position by holding mainly ETFs and technology stocks – including a 63% stake in Lucid Motors, which tripled its holdings when it went public in October 2021. **CPP** demonstrated a strong interest in US equities, increasing its portfolio to US\$ 88.3 billion (21% of its AuM).

China and India are providing an alternative to diversify public holdings. Most SOIs proved to be bullish on Chinese stocks, especially **ADIA**, which shut down its Japanese program to focus on China, and **PIF**, which recently applied for QFII status. Indian stocks on the other hand were dominated by **GIC**, with US\$ 14.8 billion in holdings. This is in stark contrast with **CDPQ**, which sold most of its Indian positions.

SOIs were also **active sellers** in 2021 and divested US\$ 32.1 billion in 45 transactions, half of which involved properties and infrastructure assets. **Mubadala** was very active with two IPOs and the sales of Aldar, Cologix, MATSA and Oil Search; **CPP** scored the largest monetization of the year when it sold 45% in GlobalLogic to Hitachi; **PIF** raised US\$ 3.2 bn from the sale of 5% in STC; and **ADIA** exited Scotia Gas and various properties in Australia and China. Over the past six years, SOIs have monetized over US\$ 285 billion.



Besides growth in assets and deal activity, one of the key trends we are witnessing is the change in investment strategy, and whether it makes sense for SOIs to stick to the traditional view of strategic asset allocation or to adopt a more streamlined and dynamic approach to portfolio construction. We discuss this in detail in Section 4 from a technical point of view, demonstrating that those funds that adopt **Total Portfolio Management** usually have better financial returns, suggesting that more funds may implement this approach.

We carefully evaluated performance and deal-making to consider which state-owned investor should be recognized as “**2021 Fund of the Year**”. There were funds that displayed high levels of deal activity; there were others that played a crucial role at home during the economic recovery; and there were others pursuing agreements with governments around the world. Only one SOIs combined all three factors and was therefore a worthy recipient of the award: **Mubadala Investment Company**. We are fascinated by the role the fund is playing in Abu Dhabi and abroad and were very happy to offer the prize to its Chief Strategy & Risk Officer.

The “**Asset Class of the Year**” was obvious this year, as **Venture Capital** absolutely boomed. Not only did VC investments by SOIs surged by 81% to a record US\$ 18.2 billion in 328 deals, but VC also contributed to the globalization of their portfolios. Only 120 of these investments went to Silicon Valley, with the rest being distributed across 32 countries. SOIs switched preference to late rounds including pre-IPOs, which signals the entry of newer and more risk-averse investors. **Temasek**, **CPP**, **GIC** and **Mubadala** continue in the Top 5 league table and are joined this year by **QIA**, which is showing more activity in VC than in any other department.

The prevalence of big opportunities and increasing interest in its real assets, as well as the consolidation of its superannuation schemes, made us go with **Australia** for the “**Region of the Year**”. There is a fine line between inbound capital and outbound players as demonstrated by the privatization of WestConnex, with its proceeds going to feed the local SWF, the **NGF**. Canadian pension funds continue to lead foreign direct investments Down Under and have maintained offices in Sydney for several years. They will be joined by **GIC** in early 2022, which could also drive a fresh interest in the Australian start-up ecosystem.

Healthcare as a sector has been building momentum since the start of the pandemic in 2020, and it was a fair choice for the “**Industry of the Year**”. SOIs have backed some of the most known vaccine manufacturers and reaped some healthy rewards, especially **ADIA** in Moderna and **Temasek** in BioNTech. **RDIF** continues to drive the efforts to distribute Russian vaccine all around the world, which changed the whole dynamic of strategic funds. They were followed by other players including **CPP**, **GIC** and **OMERS**. However, the largest deals were seen in pharma (Acino, Amoun), devices (Medline, IVC) and services (Biomat, Healthcare Activos).

We are extremely happy to report that SOIs have, for the first time, invested more capital in renewable energy than in oil and gas. This milestone was a few years in the making and has concluded a trend that has been driven by social pressure and financial returns and accelerated by the Covid-19 pandemic. State-owned investors spent US\$ 22.7 billion in 37 “**green investments**”, including stakes in brownfield assets, investments in greenfield assets, shares in listed companies, and commitments to new climate-focused funds. We also continue to track the commitments around net-zero portfolios, which we expect to ramp up in 2022.

The document also explores **organizational matters**, including the establishment of new funds – and the depletion of others; the opening of new offices overseas – and the closure of others; and the appointment of new CEOs – and the dismissal of others. We saw a few leaders being removed overnight during 2021, including **TWF**'s Zafer Sönmez and **Alaska PFC**'s Angela Rodell. We interviewed them both, highly respect what they were doing in their respective funds and could not be more disappointed with the outcome. There were 18 other CEO appointments in 2021, which represents a high level of disruption and churn rate at the top.

Finally, we offer a revised set of projections for **State-Owned Investors 2030**, which we started last year. It is never easy to predict 10 years down the road for an ever-changing industry like this, but we expect global AuM to reach US\$ 53.6 trillion by the end of the decade. This could increase further if territories like Germany, Switzerland, Japan and Taiwan finally decide to join the “SWF Club”. In any case, we expect most funds to be underway towards their net zero goals by 2030 – and we look forward to telling you all about it.



Figure 4. Top 15 Countries by SOIs (\$b)

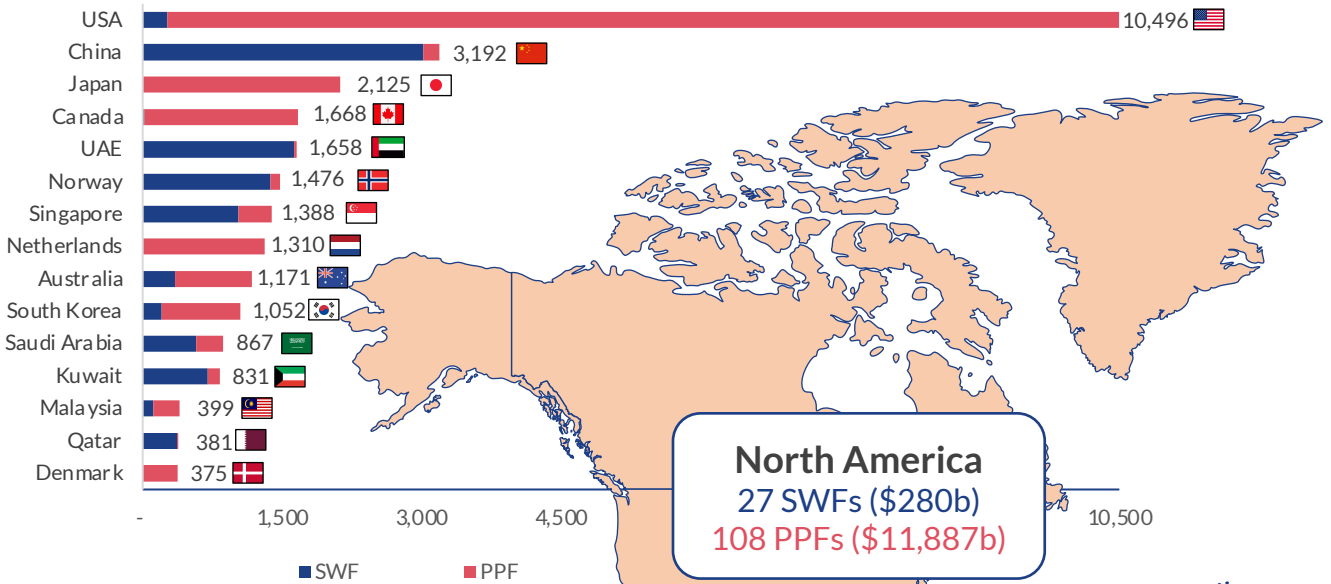
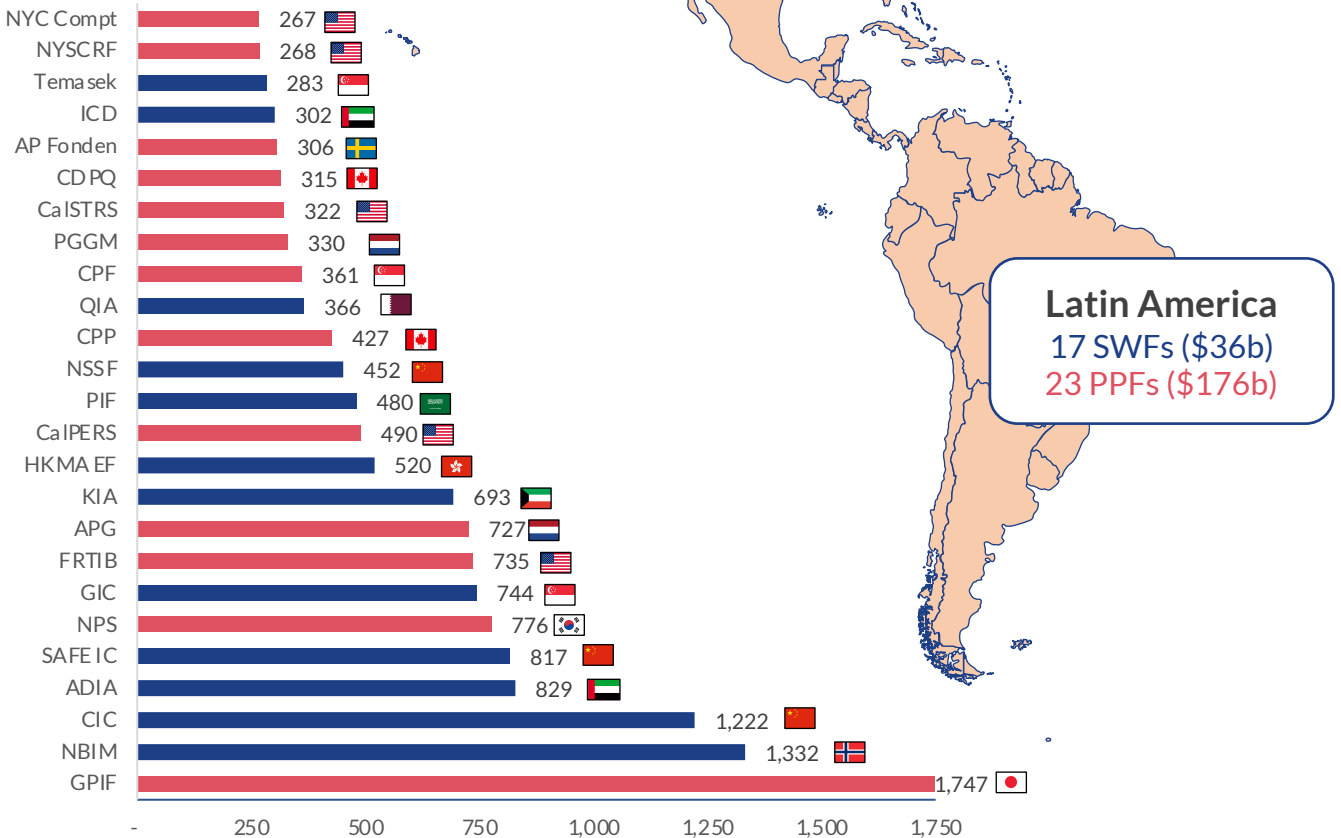


Figure 5. Top 25 SOIs (\$bn)



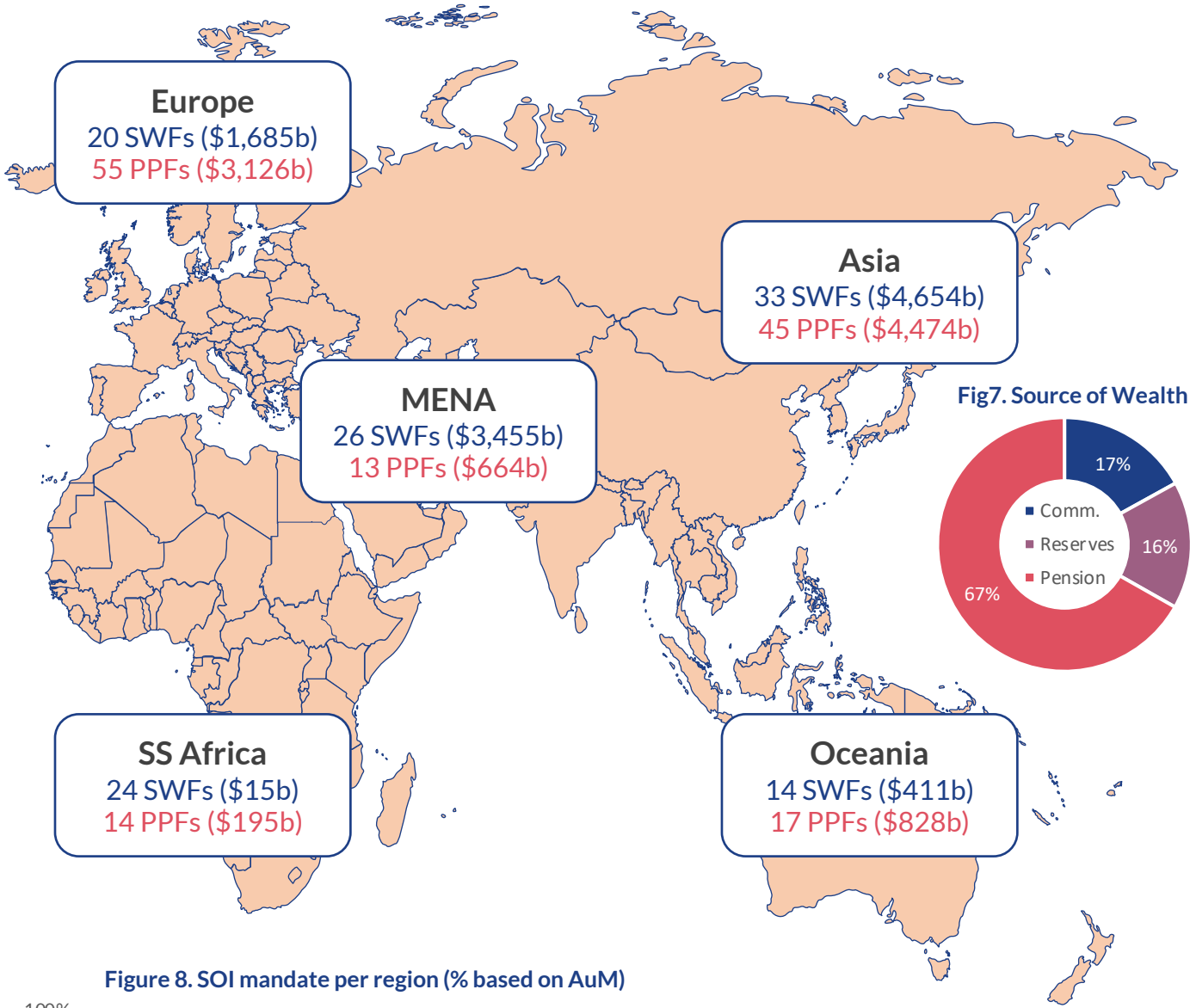
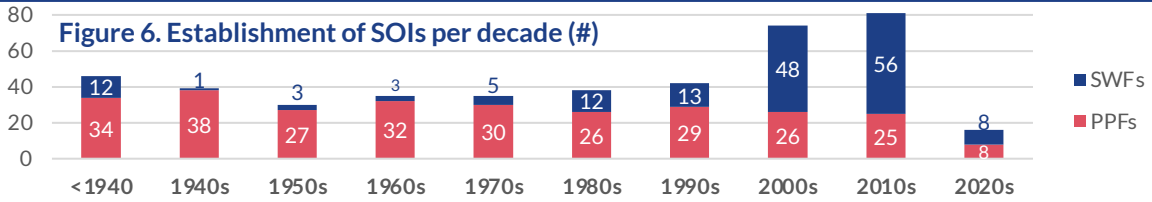


Fig7. Source of Wealth

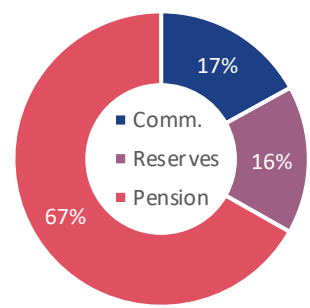
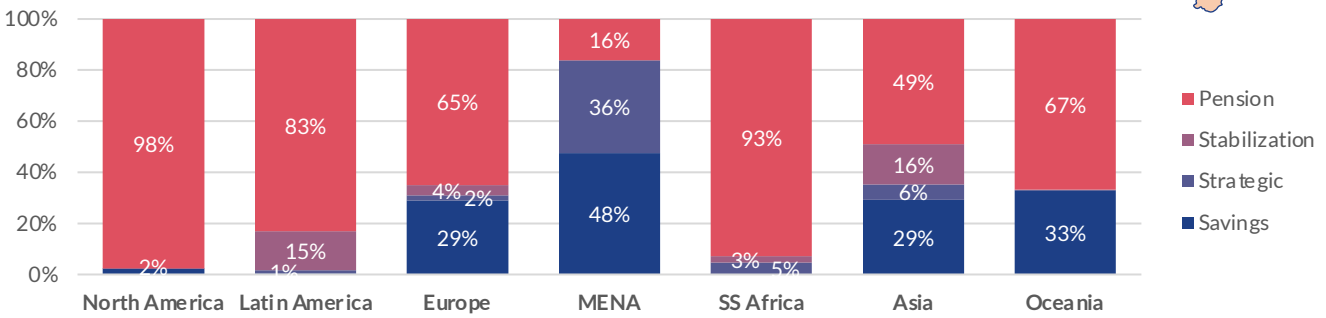


Figure 8. SOI mandate per region (% based on AuM)





2. Year 2021 in Review

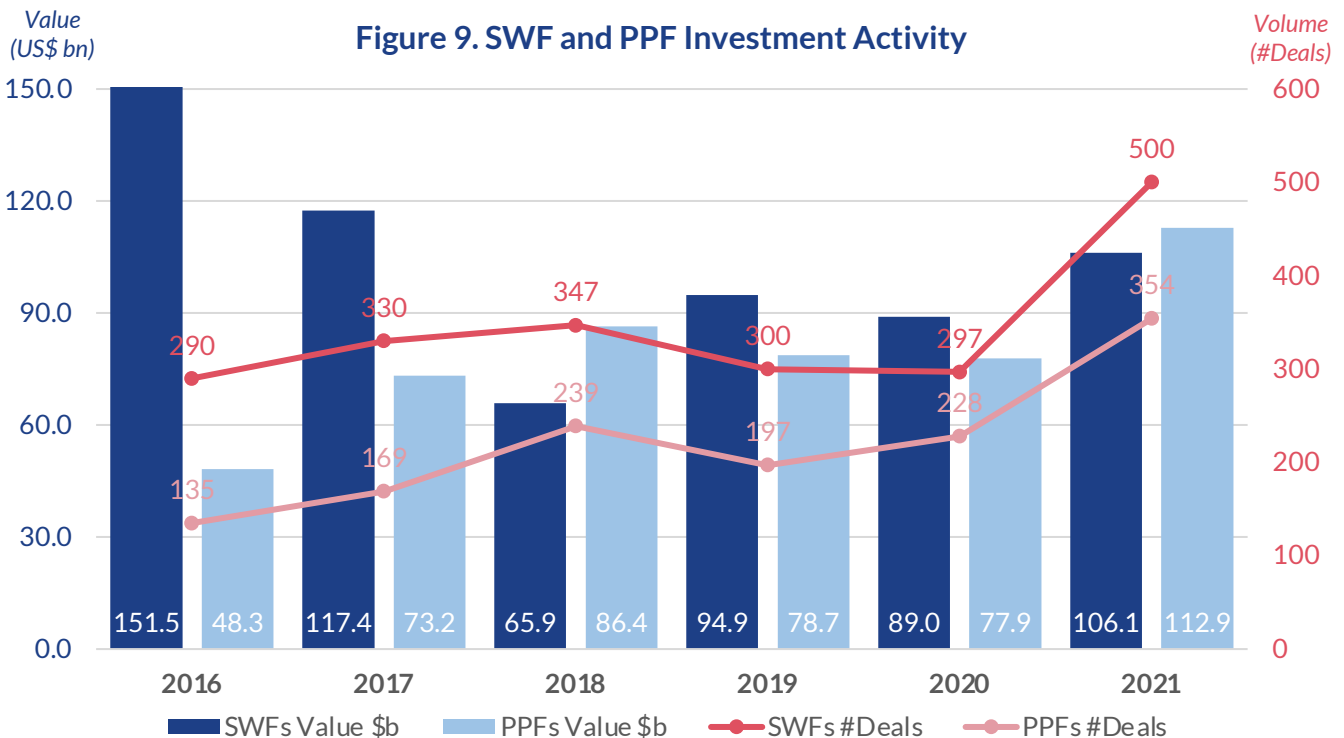


Year 2021 demonstrated that the industry has entered a new phase, which we call **State-Owned Investors 3.0**. This follows a first period until 2008 with largely scattered and independent pools of capital (“SOIs 1.0”) and a second stage from the global financial crisis to Covid-19 that boosted AuM and investments (“SOIs 2.0”). The rising appetite for venture capital and the changes in preferences around real assets, means that deal volume has rocketed but the change in aggregate deal values is not as noticeable. In the past 12 months, both sub-segments of SOIs have been extremely busy with a behavior that has evolved significantly from prior years:

- **SWFs** have been especially active this year with 500 different investments, more than in any previous year. Yet, the level of investment is not yet at 2016-2017 levels. Those two years are inflated by the US\$ 60 billion raised by Softbank from **PIF** and **Mubadala**, but 2021 does not beat 2016 even if we isolate that effect. The average ticket deployed by SWFs has decreased from US\$ 522 million in 2016 to US\$ 212 million in 2021.
- **PPFs** had their best year yet, in terms both volume and value, which exceeded US\$ 110 billion for the first time. Canadian funds are directly responsible for two thirds of that value. **CPP** alone invested almost US\$ 24 billion in 76 transactions, several of them as a co-investor with **GIC** and other SWFs. The average ticket deployed by PPFs is much more stable, around US\$ 320-430 million over the period under review.

Some of the largest transactions of the year were co-investments between SWFs and PPFs. **ADQ** and **Samruk Kazyna** committed US\$ 6 billion to build power (mostly green) assets in Kazakhstan. **ADIA**, **AustralianSuper** and **CDPQ** doubled-down their bet on WestConnex in Australia with a US\$ 4 billion combined value. **ADIA**, **APG** and **CDPQ** invested with **INA** with US\$ 3.8 billion to be invested in Indonesian infrastructure. And **GIC** spent US\$ 9.1 billion in logistics properties in three different deals in the US, Europe and Australia.

The largest tickets outside of real assets were **GIC**’s acquisition of 30% of Czech telecom CETIN a.s. for an estimated US\$ 2.3 billion; **ADIA** and **GIC** combined investment in American healthcare provider Medline, which we believe was in the tune of US\$ 2.0 billion; and **CPP** and **AIMCo** joint injection of US\$ 1.9 billion into Australian telecom group BAI Communications, which the group used buy Mobilite in the US. Of course, the real boom in terms of number of deals happened in Venture Capital – but more on that on pages 26-29.



Source: Global SWF Data Platform. Figures include private market transactions and sizeable and long-term equity deals, and exclude domestic developments and Government transfers



Table 2. Top 10 SOIs by fresh capital deployed* in the past 6 years (US\$ billion)

Fund	2016	Fund	2017	Fund	2018	Fund	2019	Fund	2020	Fund	2021
PIF **	61.2	PIF **	31.4	GIC	18.8	GIC	24.0	GIC	17.7	GIC	34.5
GIC	21.3	CIC	19.9	CDPQ	13.7	CPP	17.4	CPP	14.6	CPP	23.7
QIA	18.7	CPP	18.6	CPP	13.3	Temasek	13.7	CDPQ	12.1	Mubadala	14.5
CPP	11.7	MIC **	17.8	NYSCRF	1.7	QIC	12.2	Mubadala	11.9	CDPQ	14.4
CDPQ	7.8	GIC	17.3	Temasek	8.2	PIC	11.5	Temasek	11.4	APG	13.5
Temasek	6.6	CDPQ	13.3	PIC	6.5	ADIA	10.2	NYSCRF	11.3	OTPP	12.7
CIC	6.2	OMERS	6.3	OTPP	5.9	NYSCRF	9.3	ADQ	8.6	OMERS	12.7
QIC	6.0	APG	6.2	OMERS	5.8	CDPQ	8.0	DP World	8.5	ADIA	10.8
PSP	4.7	OTPP	5.9	PSP	5.7	PSP	7.8	NPS	7.9	Temasek	10.6
OMERS	4.4	PSP	5.6	TCorp	4.6	Mubadala	7.6	PIF	7.9	ADQ	7.2

* Investment data refers to private market transactions (RE, Infra, PE) and certain public market deals that are sizable and long-term in nature.

It does not include investments in domestic developments (e.g., PIF's NEOM) or transfers of assets from Government (e.g., ADQ's TAQA).

** Includes significant fund commitments such as Softbank Vision Fund I (US\$45b PIF, US\$15b MIC) and Blackstone Infra Fund (US\$20b PIF).

The 2021 league table is led, once again, by **GIC**. The Singaporean SWF completed 110 deals for US\$ 34.5 billion, 95% more than it did in 2020. Almost half of that capital was invested in real estate, with a clear bias to logistics. This was followed by infrastructure and energy, with a 15%, and by financials, healthcare, technology, and retail, evenly distributed with 9% of the total each. Only 8% of the overall value was in VC.

Following **GIC**, although well behind, was **CPP**, with US\$ 23.7 billion. The Canadian pension fund also had a clear preference for real assets, which took 62% of the capital it invested. A quarter of the deals involved technological companies, in line with the Venture Capital activities. In the past six years, **CPP** and **GIC** have invested a combined US\$ 233 billion, and in 2021 alone, they co-invested in 10 deals* around the world.

After the Singaporean and Canadian funds, we find no other than the Fund of the Year, **Mubadala**, which has proven to be the most active Middle Eastern investor, well ahead of its stablemates **ADIA** and **ADQ**. The once-omnipresent **QIA** and China's **CIC** have changed their profile and missed the Top 10 since 2016-17. Dutch investor **APG** is coming back with renewed strength, after investing over US\$ 13.5 billion in 2021 alone.

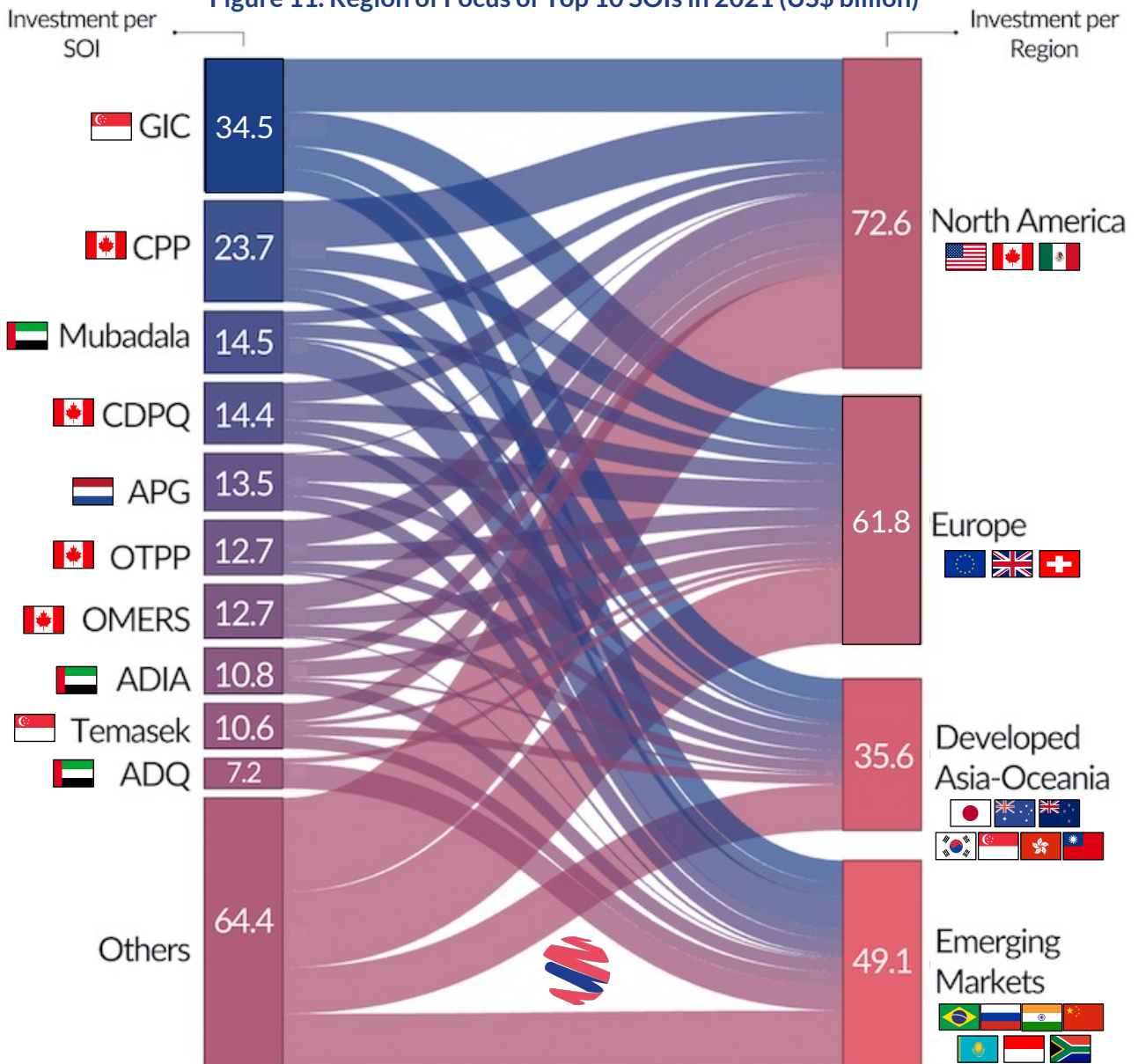
In any case, let us have a deep look at the two leaders, which are more similar than one may think:

Figure 10. Comparison between Singapore's GIC and Canada's CPP Investments

SWF 1981 SG	GIC	vs	CPP Investments	PPF 1997 CA
- AuM: US\$ 744 billion (estimated by Global SWF)			- AuM: US\$ 427 billion (Sept 30, 2021)	
- Strategy: 76% liquid, 24% illiquid			- Strategy: 51% liquid, 49% illiquid	
- Domestic Investments: 0%			- Domestic investments: 16%	
- Externally managed: 10%			- Externally managed: 20%	
- Staff: 1,800+ in 10 offices. Sydney is next.			- Staff: 1,936 in 9 offices. Beijing may be next.	
- Returns: 37.5% (FY21), 6.2% (10y US\$ Nominal)			- Returns: 20.4% (FY21), 10.8% (10y Net Nominal)	
- Investments: US\$ 133.6 billion in 2016-2021			- Investments: US\$ 99.4 billion in 2016-2021	
- 57% in Real Assets, 43% in PE / VC			- 51% in Real Assets, 49% in PE / VC	
* 2021 co-investments: Safeco, BXP, DB (US), Loft (BR), Cellnex (ES), Flipkart, Zomato, Virtusa (IN), Kuaishou (CN)				

Source: Global SWF Data Platform

Figure 11. Region of Focus of Top 10 SOIs in 2021 (US\$ billion)



Source: Global SWF Data Platform

Figures represent investment values in 2021 and are measured in US\$ billions

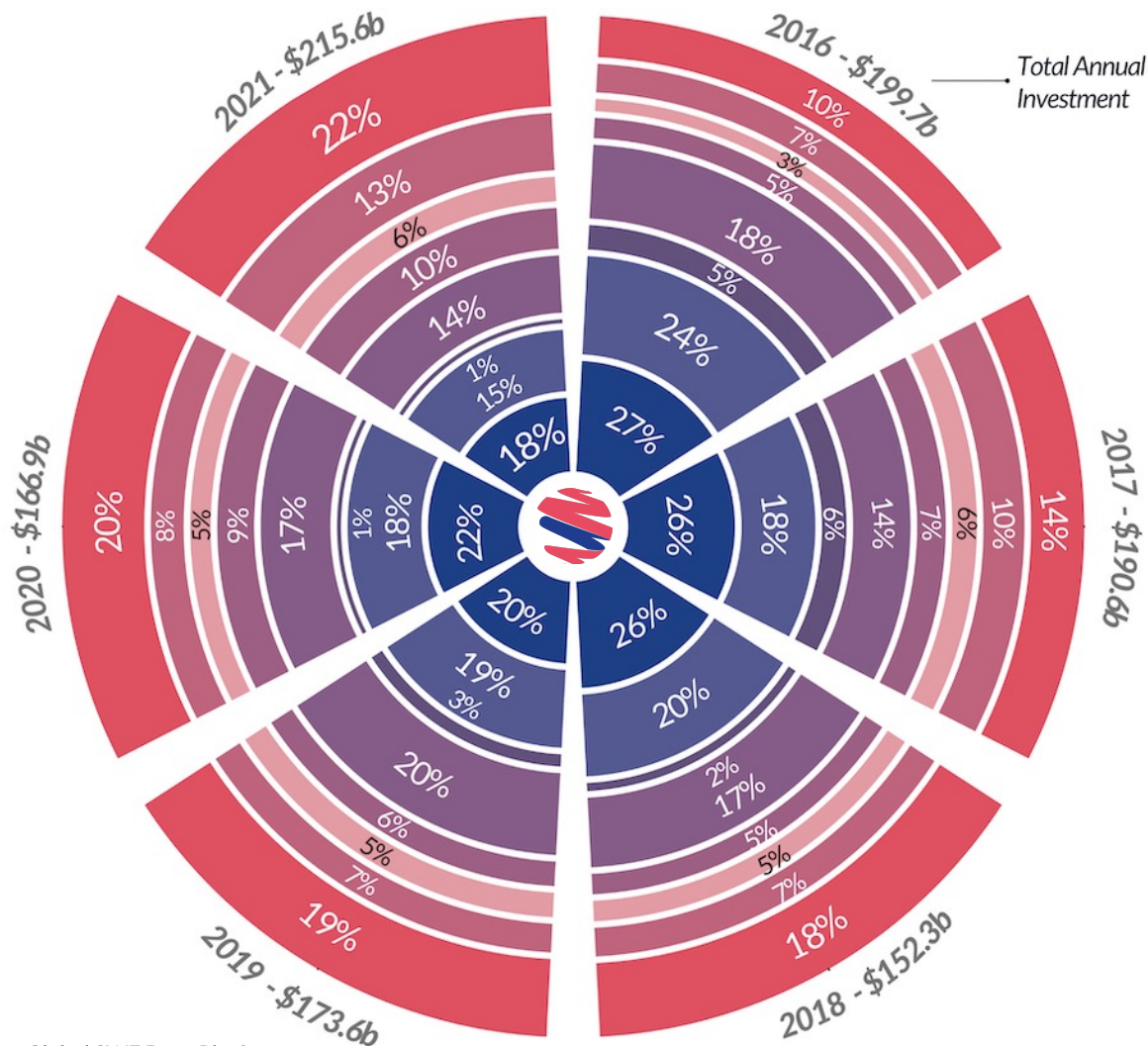
Interestingly, the Top 10 funds present very different geographical preferences. The two leaders, **GIC** and **CPP**, present a similar regional profile, with a strong weight in North America and Europe (69% and 67% respectively), and just a 15%-13% in Emerging Markets. **Temasek** thinks similarly, although with less weight in Europe (10%) and more in Emerging Markets (29%), while the three Abu Dhabi funds have a clear appetite for emerging markets, including not only the UAE but also Brazil, Russia, India, and China.

The overall balance between regions for 2021 was 78% for developed markets and 22% for emerging markets, which is one of the lowest figures in the past six years. The big winner of such rebalance has been Developed Asia-Pacific (especially, Australia), which now attracts a sixth of all capital invested by SOIs globally.



Figure 12. Sectorial preferences of SOIs during 2016-2021 (#deals)

Percentages represent proportion of investment deals per year in each sector



Source: Global SWF Data Platform

● Real Estate
 ● Infrastructure
 ● Energy
 ● Financials
 ● Healthcare
 ● Industrials
 ● Consumer
 ● Technology

We can run a similar analysis in terms of industries, and how SOIs have changed their sectorial preferences over the past six years. In this case, we analyze deal volume, as opposed to deal value, to avoid skewing the sample towards real assets, which normally involve much larger tickets.

The results of the exercise are astonishing. In 2016, over half of the deals (51%) pursued by SOIs were in the real estate and infrastructure space. Today, that figure has decreased to a third of the total (33%). The industries that have gained importance are, not surprisingly, healthcare, retail and consumer, and technology. All three sectors are touched by the magic wand of VC and are therefore increasingly present in SOIs' minds.



Listed Equities:

Sovereign funds are very heterogeneous when it comes to investing in stock markets. Some of them have very capable and active teams in-house; some others use external managers, index investing or special purpose vehicles and stick to holdings below the disclosure thresholds – which makes them very difficult to be tracked; some others seek short-term gains; and several of them have started diversifying away from the US markets.

Let's take Saudi's **PIF**, which made the news at the onset of the pandemic for investing US\$ 7.7 billion in 23 stocks in energy, entertainment, and financial services. **PIF**'s shopping spree was not typical of a SWF in the sense that it sought short-term gains, and 20 of those positions were divested from within a year. Since then, it has followed a very different strategy by holding mainly ETFs and technology stocks – including a 63% in Lucid Motors, which tripled the Saudi fund's holdings in US listed equities when it went public in October 2021.

Other SOIs were more conservative. **NBIM**, which is one of the largest investors in US equities, saw its holdings increase a 5% from Dec-19 to US\$ 376 billion today; **KIC** reaped the benefits of the stock rally but did not make significant changes; and neither did **Temasek** except for a 4% in Blackrock Inc., which is now worth US\$ 4.6 billion and boosted its US holdings. Unfortunately, other leading SWFs including **ADIA**, **GIC**, **KIA** and **QIA** use external vehicles and invest below the disclosure thresholds, so we have been unable to track them.

Pension funds do not usually make as many headlines but are also significant investors in US stocks. In 2020-2021, **APG** slightly decreased its holdings to US\$ 72.6 billion, **CDPQ** increased them to US\$ 47.0 billion, and **CPP** boosted its portfolio by a 73%, holding today US\$ 88.3 billion (21% of its AuM) in US listed equities.

In addition, sovereign investors have started looking at other equity markets such as those of China and India. Despite the geopolitical tensions and regulatory concerns, most SOIs are bullish on Chinese stocks – except for Singapore's **GIC**, which has reduced its portfolio since the pandemic started. In 2020, **ADIA** shut down its Japanese equity program and has since then increased its weight in Chinese equity markets.

SOIs need a Qualified Foreign Institutional Investor (QFII) license to invest in RMB-denominated A Shares and more recently, to participate in financial derivatives, commodity futures, and stock index options. In November 2021, **PIF** applied to become a QFII, aiming at some activity in Chinese stocks in early 2022.

Lastly, we have seen a very different behavior when it comes to Indian stocks. **GIC** is miles ahead of the pack, with holdings worth US\$ 14.8 billion, although it did not change them during the pandemic. **NBIM** and **KIA** increased their positions significantly, while **CDPQ** seems to have scratched its Indian equities altogether.

US equities will certainly stay an important part of SOIs' portfolios, but we expect them to ramp up their holdings in growth markets, as they seek higher returns, liquidity, hedging, and above all, diversification.

Table 3	US Equities			Chinese A Shares			Indian Stocks		
US\$ billion	Dec-19	Sep-21	%	Dec-19	Sep-21	%	Dec-19	Sep-21	%
ADIA	n.a.	n.a.	n.a.	0.6	1.4	139%	0.9	0.8	-9%
APG	75.8	72.6	-4%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
CDPQ	41.1	47.0	14%	0.3	0.4	60%	1.2	0.1	-94%
CPP	50.9	88.3	73%	1.3	1.5	16%	3.3	3.0	-9%
GIC	n.a.	n.a.	n.a.	2.0	1.6	-20%	12.7	14.8	16%
KIA	n.a.	n.a.	n.a.	0.2	0.7	310%	0.3	1.4	407%
KIC	27.4	33.5	22%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
NBIM	358.4	376.4	5%	1.3	1.7	32%	3.3	6.9	110%
PIF	2.2	43.4	1891%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Temasek	15.3	29.9	95%	0.4	0.9	170%	0.9	1.0	21%
Top 10 SOIs	571.1	691.1	21%	5.8	8.1	39%	22.6	28.1	24%

Source: SEC, QFII and BSE official filings, Global SWF analysis

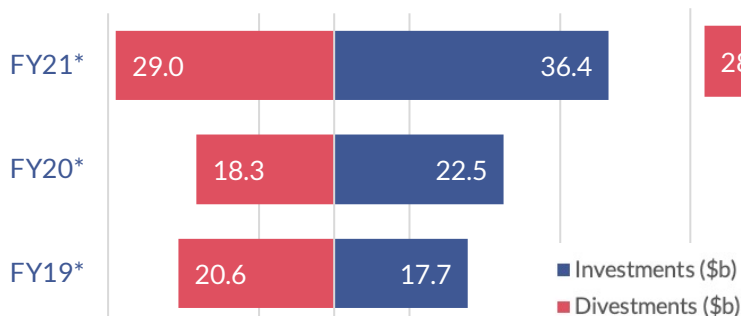


Divestments:

Long gone are the days when SOIs invested year after year and held to the assets forever. Institutional investors are now mature and sophisticated, and able to cash out their position when they deem it beneficial. **Temasek** divested more than invested in two of the past five years and has cashed US\$ 208 billion since 2004.

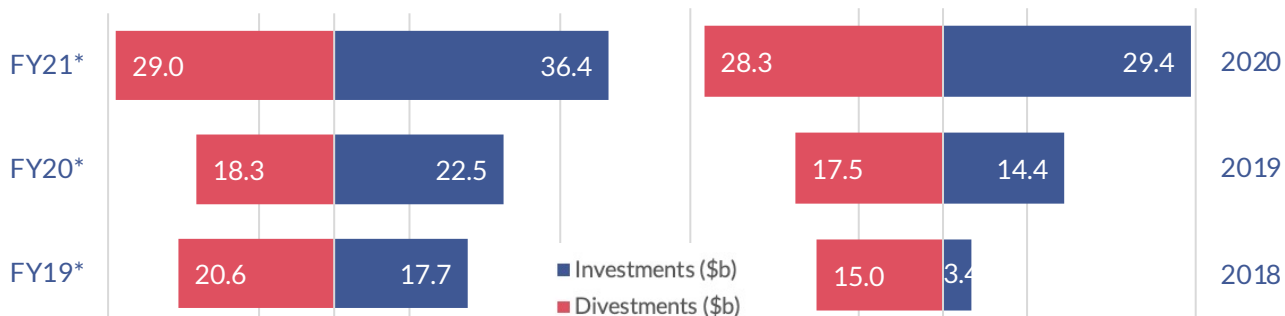
The trend is even more noticeable in its Middle Eastern peer, **Mubadala**. The Abu Dhabi investor inherited from IPIC several assets that were not considered strategic and has monetized US\$ 60.8 billion in the past three years alone, via private placements (e.g., EMI Music, CEPESA, Borealis) or, more recently, via IPOs.

Figure 13. Temasek's 3-year activity 



Source: Temasek Review 2021. * Year ended March 31

Figure 14. Mubadala's 3-year activity 


















Source: Mubadala 2020 Annual Review

Global SWF has tracked divestments totaling US\$ 285 billion in the past six years. The most significant was PIF's "sale" of SABIC to Aramco for US\$ 69.1 billion in June of 2020. But SOIs were also big sellers in 2021. **Mubadala** was again very active with two IPOs and the sales of Aldar Properties, Cologix, MATSA and Oil Search. In most cases, the Gulf investor decided to pursue partial sales and to stay with some skin in the game.

Other active sellers in 2021 included **CPP**, which scored the year's largest monetization when it sold 45% in GlobalLogic to Hitachi; **OTPP**, which stayed active in the PE market; **PIF**, which raised US\$ 3.2 bn from the sale of 5% in STC; and **ADIA**, which exited Scotia Gas and properties in Australia and China. In total, we saw US\$ 32.1 billion generated in 45 divestments, half of which involved properties and infrastructure assets.

Table 4. Top 15 divestments by SOIs in 2021

Fund/s	Divestment	Buyer	Country	Industry	Value (\$b)	Stake (%)
CPP 	GlobalLogic	Hitachi	US	TMT	4.3	45%
PIF 	Saudi Telecom	Tadawul	SA	TMT	3.2	5%
Mubadala 	GlobalFoundries	Nasdaq	US	IP	2.6	9%
QIA 	Tiffany and Co	LVMH	US	RC	1.6	11%
GIC 	Aust Logistics Trust	Blackstone	AU	RE	1.5	49%
AusSuper 	AusGrid	APG	AU	Infra	1.4	17%
AIMCo/OMERS 	ERM	KKR	UK	ENR	1.4	52%
OMERS 	Scotia Gas Networks	GIP	UK	Infra	1.2	25%
Mubadala 	Aldar Properties	ADH	AE	RE	1.0	12%
Mubadala 	MATSA	Sandfire	ES	ENR	0.9	50%
PSP 	Alpha Trains	PGGM	EU	Infra	0.9	30%
Temasek 	Cypress Creek	EQT	US	ENR	0.9	50%
PGGM 	One Rail Australia	Aurizon	AU	Infra	0.9	51%
ADIA 	Scotia Gas Networks	OTPP	UK	Infra	0.8	17%
Temasek 	LF Logistics	Maersk	SG	Infra	0.8	22%

Source: Global SWF Data Platform



If 2020 was a quarantined year and 2021 was a hybrid year, what will 2022 be? What will the “new normal” look like? By now, it seems clear that the “future of work” may have changed forever and that Zoom calls – or a more metaverse-like version of them – are here to stay. But what about the “future of investing”?

In 2022, sovereign investors will pay, as it is customary, a lot of attention to national elections. And these will happen in Asia-Pacific (South Korea, Philippines, Australia) in Q1-Q2; in Africa (Kenya, Angola) in Q3; and in Latin America (Brazil) in Q4. These are all-important to our industry from both an inbound and an outbound perspective. In addition, there will be interest in the new dynamics of Europe, with the absence of Chancellor Merkel, and the Presidency of the EU rotating to France, which will also have elections in April. In November, there will be some heat in the US with the mid-terms and potential candidacy of Trump 2024.

Table 5. The calendar ahead 2022

January	February	March	April	May	June
-France assumes Presidency of Council of EU	-Winter Olympics in Beijing	-Elections in South Korea, Hong Kong	-Elections in Costa Rica, France	-Elections in Philippines, Australia	-Elections Malta -World Oceans Day
July	August	September	October	November	December
-Global SWF issues GSR'22 (200 funds)	-Elections in Kenya, Angola	-Elections in Sweden, Austria -UNGA 77 in NY	-Grand Prix SG -Elections Brazil -WBG-IMF MO	-US mid-terms -COP27 in Egypt -IFSWF in Baku	-Red Sea Project opening in KSA -FIFA WC Qatar

Source: Global SWF elaboration from public sources

In addition, investors will continue watching the dynamics within China, especially around the crackdown of President Xi on Chinese tech firms, which is expected to continue. Games and shopping may lose momentum against geostrategic investment, and that may affect the overall Chinese Venture Capital market. Investors like Temasek seem to be “too deep” in China to seek an exit, but others may continue to seek alternatives in India, Southeast Asia, or other untapped markets beyond the continent.

Crypto may have boomed elsewhere, but it continues to generate very little excitement in the SWF / PPF world. If Central Banks decide to launch their own, centralized, digital currencies, we may start to see some significant moves especially from stabilization and savings funds exposed to the domestic public coffers. Others may approach it as a subset of the increasingly important allocation to venture capital.

Over 2020 and 2021, the disconnect between *Wall Street* and *Main Street* was evident, and investors will be more concerned about the end of the bull market. But the economy is also important, and there are reasons to be worried: global GDP is expected to grow at 4.9% but this could prove over-optimistic if the supply chain disruption, energy prices and labor issues are sustained. The price of crude at end-2021 was around US\$ 75, up from US\$ 50 a year ago, and that jump is a game-changer for many economies.

Of course, that is good news for Middle Eastern SWFs especially, which may enjoy a break from plugging public deficits. Oman is still expecting some deficit that will be covered partly by the **OIA**, but Saudi Arabia is hoping to run on surplus for the first time in eight years. In that context we expect not only **PIF** to become more prominent, but other institutions like **NDF** and **GOSI** to take a leading role, as well.

The Middle East and North Africa is set to be subject of international attention. The WBG-IMF biannual meeting overseas will be finally held in Marrakesh in October, and the new UN session on climate change (COP27), in Sharm el-Sheikh in November. Just 500km South across the border between Umluj and Al Wajh, **PIF** will be finalizing phase 1 of development of the Red Sea Project, one of its multi-billion, giga-projects.



We also expect sports to keep playing an important part in SOIs' actions. Beside any political controversy, the Winter Olympics to be held in Beijing in February may bring some investment opportunities. And perhaps more relevant, Qatar will hold the FIFA World Cup for which it has been preparing for 12 years. Gulf funds have invested in PSG and Malaga CF (Qatar), Newcastle and Sheffield UFC (Saudi), Manchester City (Abu Dhabi) and Paris FC (Bahrain). At the time of writing this report, **PIF** showed interest in Italy's Inter Milan and France's OM, among others. We would not be surprised if we see more clubs acquired or sponsorship deals struck (like CVC in La Liga) by Gulf SWFs in the next 11 months before the festivities start in Doha.

The other area that may finally awaken significant interest from state-owned investors is the space race, given the expected boom in space tourism in 2022. In February 2021, the UAE Space Agency beat the Chinese and American rockets and entered Mars' orbit successfully, and **Mubadala** is already heavily invested in the Fourth Industrial Revolution (4IR). Elon Musk's Space X is today the world's second largest unicorn (just after Bytedance) with a US\$ 100 billion valuation, and other SOIs may want to follow **OTPP** as investors.

Regardless of the potential transition of Covid-19 into an annual virus / booster, we believe healthcare will continue to be an important part of sovereign investors' portfolios and activities. Coupled with technology and consumer, healthcare will continue pushing the bet for Venture Capital and start-ups. Every SOI should aspire to replicate the success of **PIF** with Lucid Motors (40x RoI) even if 90% of startups are doomed to fail.

Lastly, we look forward to seeing new SWFs being formed in Israel, Namibia, Ethiopia, Mozambique and even Germany; and to merged pension schemes arising in the Middle East and Australia. We are also hoping for some of the depleted Latin American stabilization funds to start receiving capital again as oil revenues accumulate. Finally, we can't wait to see new offices blossoming from New York (**BCI**) to London (**PIF**), and from Singapore (**HOOPP**) to Sydney (**GIC**). SOIs will keep creating employment everywhere they go.

One thing is certain: the industry will continue to be fascinating in 2022, and we will keep covering it for you.

"Will 2022 be the year, where global authorities tighten monetary and fiscal policies to ensure that inflation expectations remain well anchored? Will risk assets continue to perform well, as investors find no home in the risk-free (or return-free) assets hovering around zero? Long-term investors cannot accept that negative real interest rates gradually, but surely, evaporate the future purchasing power of their portfolios. Or will the current economic tailwinds be overshadowed by another wave of healthcare related problems and unexpected global events triggering economic slowdown. A slowdown that will renew the need for authorities to stimulate growth, while central banks adds yet more assets to their expanding balance sheet.

Whatever the outcome, the global sovereign investors community will continue to embrace diversification and will seek alpha and innovative global investment opportunities. Hopefully, sovereign investors continue to invest in a counter-cyclical manner by taking more risk, when risk are best rewarded, and vice versa. That allows sophisticated long-term investors to stabilize the global economy and ensuring liquidity in the financial markets during crisis, while reaping the long-term benefits of diversification and accumulation of sovereign wealth. A buildup of sovereign wealth that can offset rising liabilities and work to the benefit of future generations. Future generations challenged with a more volatile climate, changing demographics and the emergence of new sophisticated technologies. These global forces will change our workplace and everyday life in ways we are yet to imagine.

Whatever 2022 brings, we should all be thankful for the long-term vision and investment horizons that make highly talented sovereign investors able to go to work each day to make a global impact and accumulate sovereign wealth for this and future generations."

Kristian Flyvholm, Inaugural CEO of IFSWF and CIO at Central Bank of the UAE *

** views expressed are personal and not reflecting the views of the Central Bank of the UAE.*





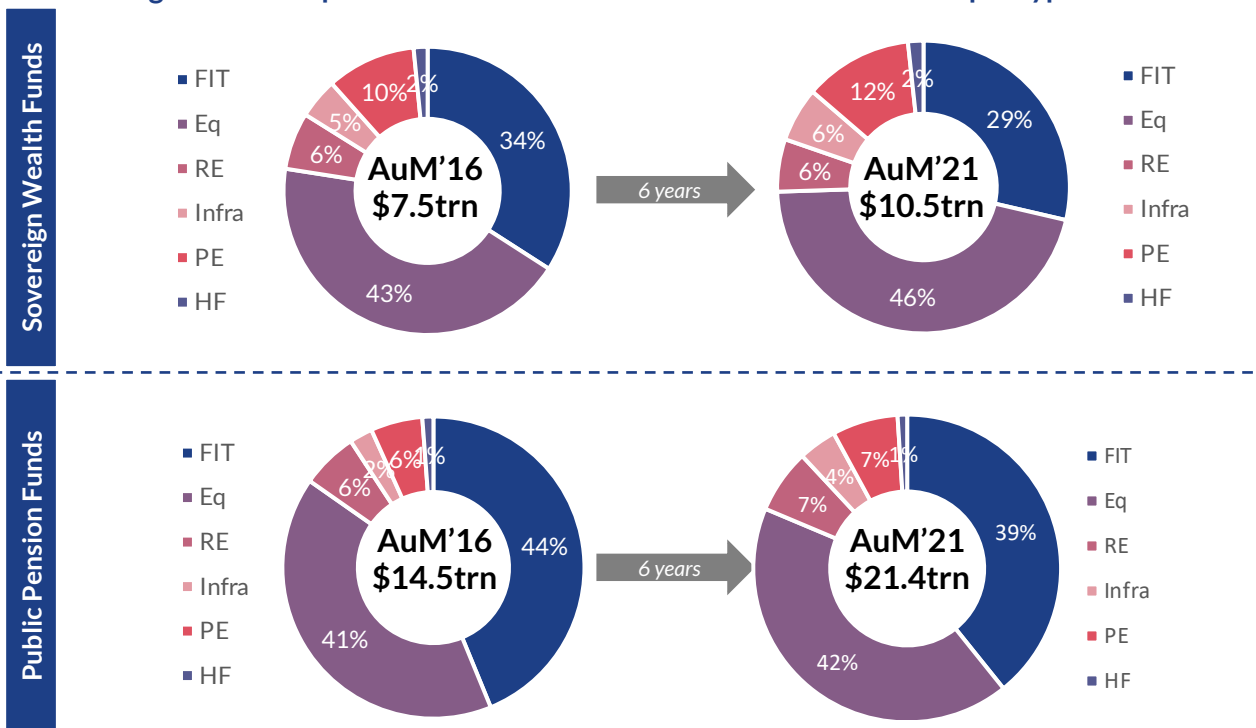
4. The Future of Asset Allocation



There is no doubt that state-owned investors have gained maturity and sophistication in the past few years. They have also been growing their internal teams, including strategists, economists, and allocation specialists. Many of them are starting to disagree with the traditional approach to strategic asset allocation, i.e., splitting the capital into the most commonly adopted categories, namely fixed income and treasuries (“FIT”), public equities (“Eq”), real estate (“RE”), infrastructure (“Infra”), private equity (“PE”), and hedge funds (“HF”).

Such mix of asset classes has changed significantly in the past few years. Sovereign wealth funds have increased the part of the pie invested outside of stocks and bonds from 15% in 2008, to 23% in 2016 and 25% in 2021. Similarly, public pension funds have increased the allocation to alternatives from 11% in 2008, to 15% in 2016 and 19% in 2021. Considering the growth in assets these vehicles have experienced in the past few years, we are talking about a tremendous amount of new capital in real assets, private equity, and hedge funds.

Figure 15. Comparison between 2016 and 2021 asset allocations per type of fund



Source: Global SWF Data Platform

Most likely, the trend will not stop here. After interviewing the C-suite of the SOIs throughout the year ([link](#)), one message has come across loud and clear: asset owners are looking at increasing further their allocation to private markets. For example, Canada’s **CDPQ** increased its allocation from 27% in 2016 to 36% in 2021 and is targeting 45% by 2024; Abu Dhabi’s **ADIA** recently raised its allocation target bands for private equity and infrastructure, and Korea’s **KIC** is aiming to boost alternatives from 15% in 2021 to 27% by 2027.

Now, does it make sense to continue being rigid about this classification, forcing allocations, portfolios, and teams to operate independently? What happens to the management of private investments that are listed? Who looks at real assets that combine characteristics of both real estate and infrastructure? Should private credit be part of the fixed income allocation and teams, or come under private equity instead? How do you integrate ESG in your investment decision approach if you do not have a holistic view of your portfolio?



Many argue that it is absurd to keep calling alternatives anything that falls outside of bonds and stocks, given the new reality we operate in now with the blending of some of these categories. The solution takes different names – total portfolio management (TPM), total fund management (TFM), total portfolio approach (TPA) or thematic investing (TI) – but it all refers to the same idea: a more streamlined and dynamic approach to portfolio construction.

Such distinct methodology has been praised for creating a more agile response to market events, for being less dragged by benchmarks and for centering the decision making on risk factors. More importantly, internal teams do not find themselves fighting for capital or yearly allocations and can collaborate and invest together.

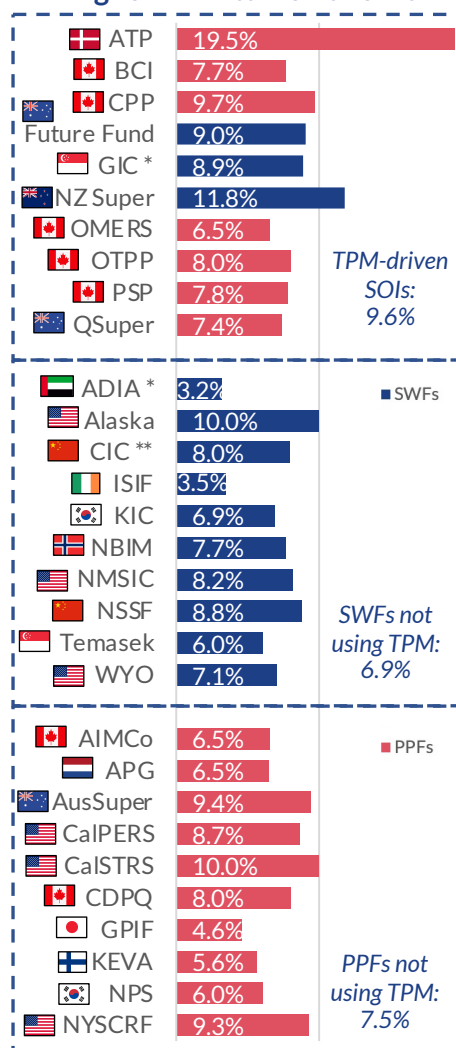
During 2021, we witnessed a few SOIs setting up new teams and hiring seasoned strategist. For example, **OTPP** created a new Global Investment Strategy group, and **Future Fund** hired its first Chief Economist, a position which we can find in a few other funds including **ADIA**, **CDPQ**, **GIC**, **NZ Super**, **OMERS**, and **PPGM**.

Yet only a handful of funds so far identify themselves with this line of thinking and have established separate teams or initiatives. The list of names won't surprise anyone: five Canadian pension funds (**BCI**, **CPP**, **OMERS**, **OTPP**, **PSP**), three Oceanian funds (**Future Fund**, **NZ Super**, **QSuper**), Denmark's **ATP**, and Singapore's **GIC**.

We have run an analysis with these ten funds and looked at their average annual return over 2016-2021, revealing a superior return (9.6%) to those SWFs not following TPM (6.9%) and to those PPFs not following TPM (7.5%). Even if we remove the outlier, Denmark's **ATP**, the TPM-driven funds still perform better (8.5%).

Obviously, the usual caveats apply to this kind of exercise, as funds report returns in very different ways – and some only report rolling returns, in which case we estimated their single-year returns. However, if the most sophisticated funds are looking at this issue and achieving superior returns (for this and other reasons), they may be followed by the rest of state-owned investors soon.

Fig16. Av Returns 2016-2021



Source: Global SWF Data Platform
* Estimated by GSWF ** Intl investments only

“The world has fundamentally changed, and how we respond to the changes is critical. In recent years, some profound structural changes were already impacting the investment environment, such as demographic trends and responses to climate change. The pandemic has likely accelerated existing trends in the political and geopolitical order, the way economies and societies work and interact, the way global policymakers make decisions and manage economies, and how financial markets behave. The evolution of these secular forces over coming years will have fundamental implications for the global economic and investment environment and may accentuate regional and sectoral divergences. Also, many of these long-run changes impact the cost base of economies, adding to concerns that higher inflation may take hold. While the near-term economic outlook appears robust, uncertainty on the evolution and policy response to inflationary pressures, divergent regional and sectoral recoveries, and possible fundamental shifts in the global economic and investment environment combine to create a challenging environment for investors. Nevertheless, opportunities may emerge from these uncertainties.”



Sue Brake, Chief Investment Officer of Australia's Future Fund



5. Fund of the Year: Mubadala

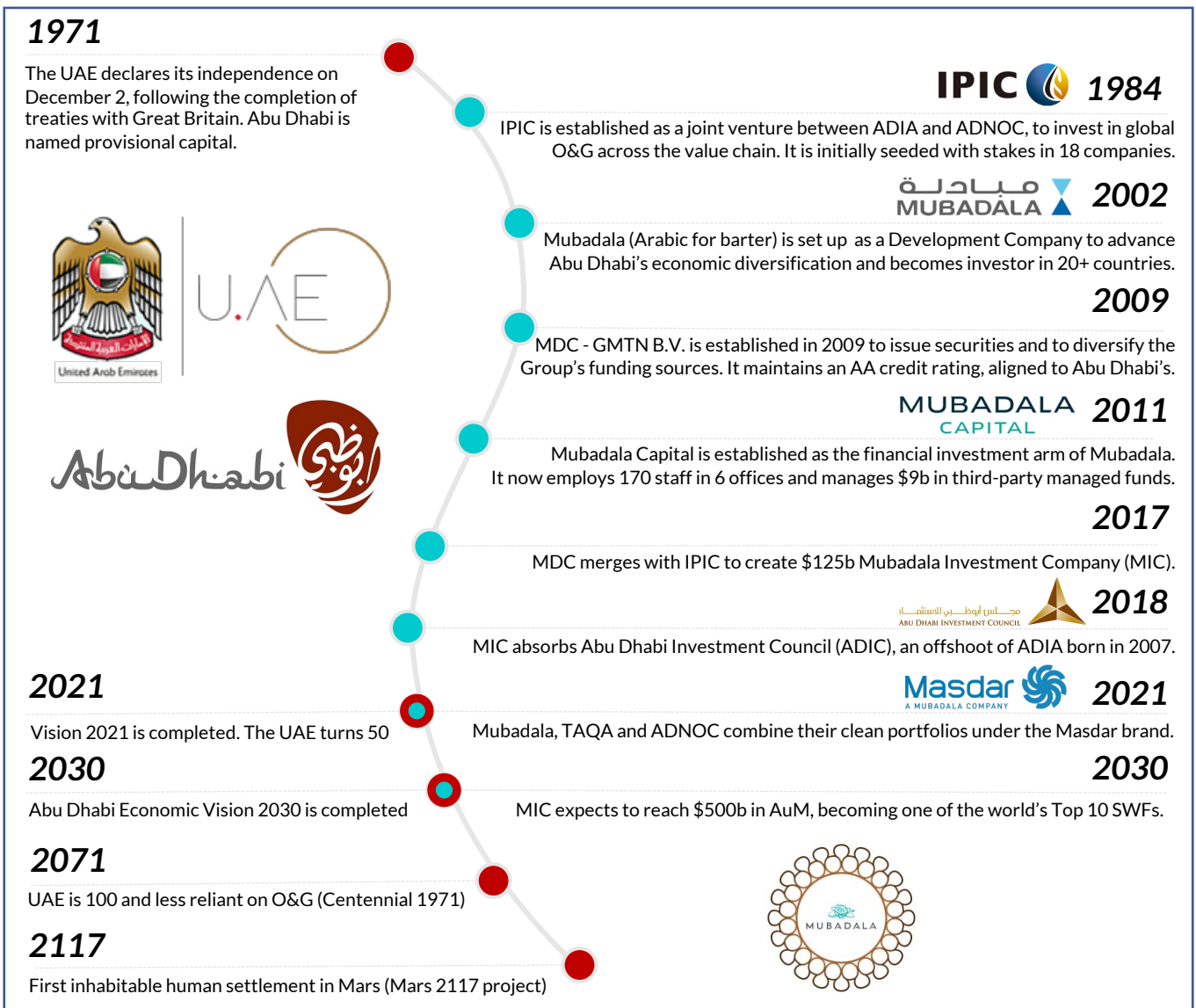


One cannot talk about the development of the United Arab Emirates without mentioning **Mubadala** (the Arabic word for *exchange*). Oil was first discovered in the Umm Shaif field in 1958, and since the unification of the Emirates, the UAE has made its mission to diversify the economy so that growth is self-sustaining once its oil runs out. The best way to achieve that ambition is through leading investment and development organizations.

Mubadala Development Company (**MDC**) was established in 2002 to drive diversification of the UAE economy while also delivering social returns to Abu Dhabi. In 2017, MDC merged with the International Petroleum Investment Company (**IPIC**) to establish Mubadala Investment Company (**MIC**), with the ambition of being a global investor, while continuing to support the development and diversification of the UAE economy.

A year later, the Abu Dhabi Investment Council (**ADIC**), joined the **Mubadala** group, doubling the value of its AuM with a globally diversified portfolio. Today, the combined entity has holdings across most industries in 50+ countries and is an important part of Abu Dhabi's economic engine and Economic Vision 2030.

Figure 17. Timeline of the UAE / Abu Dhabi vs Mubadala



Source: Abu Dhabi Government and Mubadala websites, Global SWF analysis



The SWF Capital of the World:

Abu Dhabi is one of the world's most prominent cities when it comes to sovereign wealth management. **Global SWF** estimates that the Emirate manages today around US\$ 1.3 trillion through four different SWFs: **ADIA**, **Mubadala**, **ADQ** and **EIA**, the federal fund. This makes it the third largest concentration, after Beijing and Oslo.

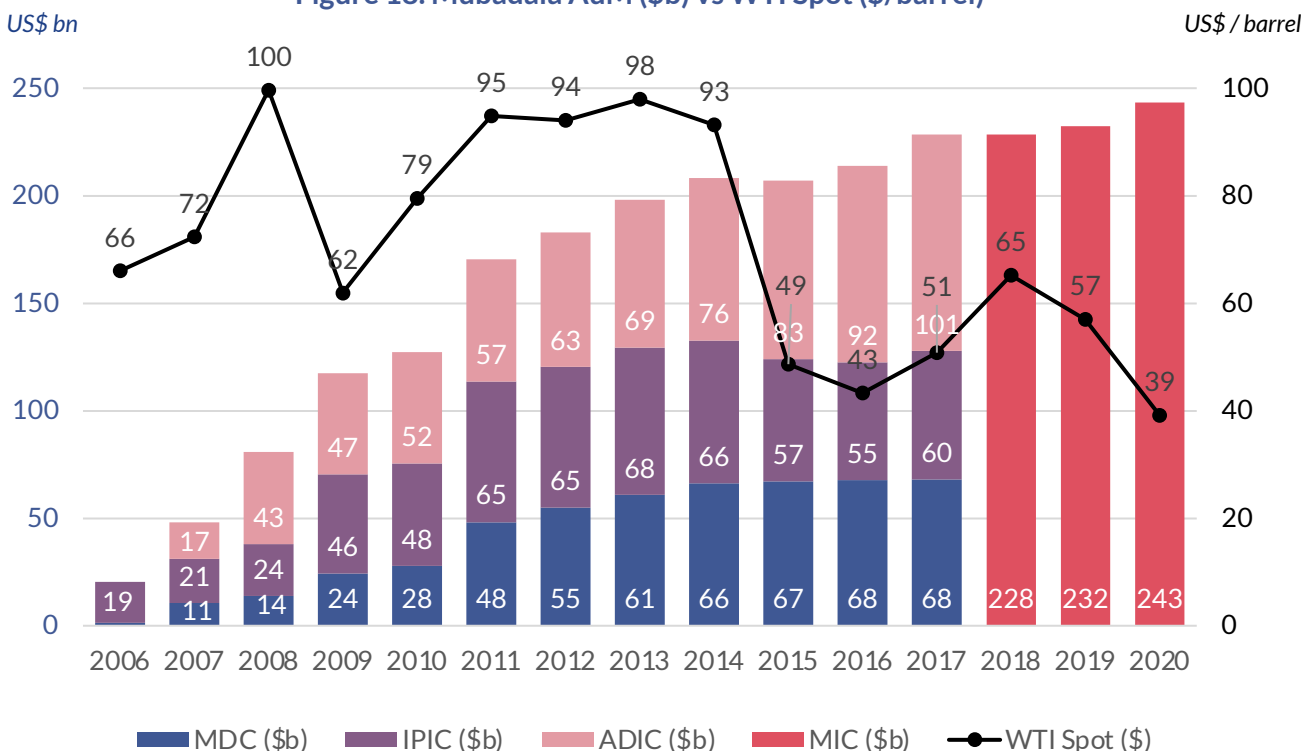
The first sovereign-related investor was an early version of **ADIA** (*the Financial Investment Board*) in 1967, after oil was discovered but before the UAE's independence. Today, **ADIA** continues to manage budget surpluses – and contributes to covering deficits – and has grown to be the world's third largest SWF. Its focus is to grow capital through a disciplined investment process.

Since 2007, **ADIA** does not invest domestically. That year, it was decided that its local portfolio of financial institutions would be spun off to form a new SWF, called **ADIC**, or *the Council*. With oil at US\$ 100 / barrel, the new entity was receiving surpluses that could not be absorbed locally, so it also started investing overseas. In the same year, the **EIA** was formed to oversee a federal portfolio of key assets.

In 2014, the five SWFs (**ADIA**, **MDC**, **IPIC**, **ADIC**, **EIA**) were reaching a combined US\$ 1 trillion AuM. However, Abu Dhabi's leadership determined that there would be benefits from driving consolidation within its government-related entities, and by 2018, **MDC**, **IPIC** and **ADIC** had merged into the Mubadala group. The five SWFs had now become three: the stabilization / savings fund (**ADIA**), the strategic investor (**Mubadala**) and the federal vehicle (**EIA**). In the same year, certain state assets were transferred to a newly formed entity, **ADQ**.

Today, **ADQ** has grown significantly (US\$ 110 billion according to **Global SWF**) including the creation of a separate subsidiary for start-ups, ADG. It is unclear how many funds Abu Dhabi will decide to operate in the future, but whatever that number may be, they will surely earn international interest and respect. And **Mubadala** will continue to be central to the government's diversification and global integration efforts.

Figure 18. Mubadala AuM (\$b) vs WTI Spot (\$/barrel)



Source: Mubadala annual reports, EIA, Global SWF Data Platform



For its significant contribution to the development of Abu Dhabi and the UAE, for its leadership in pursuing global partnerships, for its unparalleled investment and divestment activity displayed throughout the year, and, in general, for its contribution to the advancement of the SWF industry, **Global SWF** believes that **Mubadala Investment Company** is a worthy recipient of the **2021 Fund of the Year** award. We spoke with **Ahmed Saeed Al Calily**, its Chief Strategy & Risk Officer, about the fund's performance and ambitions.

[GSWF] How has the fund's strategy changed over the last 20 years and how will it continue to evolve?

[MIC] Mubadala's journey has reflected the growth and evolution of Abu Dhabi itself: always forward-leaning, looking to future possibilities and how to leverage the strengths of today to create opportunities for generations to come. Mubadala arrived in its current form by complementing substantial organic growth with two significant mergers, while successfully evolving from a local development company into a globally recognized best-in-class investor.

Today, Mubadala is a global, unique, and responsible investor with an ambition to double its size over the next decade. Our organizational structure, strategy and global partnerships are meant to take advantage of a range of investments, particularly in sectors with significant "tailwinds", including technology, life sciences, renewable energy and fintech to name a few. We will also seek opportunities in more traditional sectors.

Investing responsibly has always been central to Mubadala's approach, focusing on both financial and social returns. With our evolution, we have continued to drive and institutionalize our approach to ESG principles and factors. Our dual focus of driving value-accretive diversified economic growth within the UAE, combined with deploying capital into global investments seeking positive economic trends and market dynamics, is well-grounded within our organization.

[GSWF] The investment landscape of Abu Dhabi has changed dramatically in the past five years with the merger of some funds and the emergence of others. How does this align with the Economic Vision 2030?

[MIC] Mubadala's mandate has always been to create sustainable financial returns for our shareholder. Following the inauguration of MIC in 2017, ADIC joined the group in 2018. This is an acknowledgment of our Leadership's belief in the strength that comes from collaboration and from integrating diverse perspectives and backgrounds.

As a responsible investor, we are committed to supporting the economic diversification of Abu Dhabi while leaving a positive lasting impact on the communities where we invest worldwide. As we progress with our activities and ambitions, we will continue to align ourselves with the Economic Vision 2030 including supporting a large empowered private sector, maintaining strong and diverse international relationships, and optimizing the UAE's resources.

Mubadala is looking to create the next new clusters such as supporting the energy transition. Our recent partnership with ADNOC and TAQA will propel Masdar's renewable capacity to more than 50GW by 2030 and create a global clean energy powerhouse. This partnership will also support the UAE's role in the energy transition and contribute to its strategic goal of achieving carbon neutrality by 2050, while becoming a global leader in green hydrogen.

[GSWF] How will Mubadala fund its ambitious growth plans? Do you expect to make distributions?

[MIC] Mubadala has set the ambitious goal of doubling our portfolio while maintaining sustainable financial returns, supporting Abu Dhabi's diversification and positively impacting the communities where we invest. Reaching our target will require a dynamic approach comprised of active management of our investments and growing our global partnerships as well as the appropriate and conservative use of leverage. This will be supported by the prudent and pragmatic monetization of existing investments and recycling of capital into new investments. Mubadala also has an established and prudent dividends policy and, consistent with other economically-driven entities, during any given year we assess our balance between potential new investments and distributions.

[GSWF] In 2020, Mubadala sold almost as much as it invested. How are you pursuing monetization?

[MIC] 2020 was one of our most successful years, during which we achieved record investments, profit and growth. We deployed US\$ 29.4 billion while realizing US\$ 28.3 billion through monetizations and distributions. 2021 has also been one of our most active years. Our investments this year have involved global partnerships with BlackRock, Silver Lake, SoftBank, Bpifrance, and the UK government, to name just a few. Monetization activities included the partial sale of Aldar, one of the largest private share purchases in a UAE-listed company, the IPO of Yahsat, our first-ever listing on ADX; and the listing of GlobalFoundries on the NASDAQ, one of the largest IPOs of 2021.



[GSWF] Mubadala has been very active in green energy, especially via Masdar, but also in oil and gas. Why?

[MIC] As we drive to double the size of our portfolio, our relative exposure to the hydrocarbon industries is intended to reduce over time. While our strategy calls for significant and focused investment in high growth sectors with strong tailwinds such as technology, life sciences, fintech, renewable energy and traditional infrastructure, natural gas, for example, is expected to remain part of our capital deployment in the immediate future in support of the transition to cleaner energy alternatives. More broadly, Mubadala is investing in a range of energy assets and initiatives, from renewables to partnerships focused on the development and commercialization of the green hydrogen market.

[GSWF] In 2021, Mubadala restructured itself into five main business lines. What was the rationale?

[MIC] To achieve our growth plans, we reorganized our structure to create five distinct platforms that align us with our mandate as well as facilitate Abu Dhabi's integration with the global economy.

- **UAE Investments:** This platform consolidates all Mubadala's domestic assets. Significant highlights include the landmark listing of Yahsat (Mubadala's first IPO) and the partial monetization of Aldar.
- **Direct Investments:** This platform focuses on global high growth, high profitability sectors such as life sciences, tech and financial services. It has had an active year that included the US \$26 billion listing of GlobalFoundries.
- **Disruptive Investments:** This platform includes asset management subsidiary Mubadala Capital, as well as Ventures & Growth, Credit Investments, and Country Direct Investment Programs in Russia & CIS, France, China, and the UK.
- **Real Estate and Infrastructure Investments:** This platform focuses on physical and digital assets around the world. Investments included CityFibre and Calisen in the UK, and logistics deals in Australia, Korea, and Mexico.
- **Globally Diversified Investments:** ADIC focuses on international direct and indirect investments across private and public markets by selecting top-quartile fund managers combined with an active asset allocation policy.

[GSWF] Can we talk about Mubadala Capital, which recently became a subsidiary of the parent company?

[MIC] Although Mubadala Capital recently commenced operations as a standalone portfolio company, it remains a wholly-owned asset, enabling it to pursue its highly focused investment strategies while leveraging Mubadala's scale and network. Mubadala Capital's management of third-party capital makes it unique among Mubadala's businesses, and its success in attracting global blue-chip investors has positioned it well to maintain its growth trajectory going forward. Today, the company manages over US\$ 9 billion in third-party capital on behalf of its institutional investors.

[GSWF] How are the Country Direct Investment Programs scoped and motivated?

[MIC] Our strong focus on partnership is one of our greatest strengths that makes us unique. Our country-specific partnerships are focused on strong economic fundamentals and the conviction that allows us to develop relationships and commercially driven direct investment programs in key markets including Russia & CIS, France, China, and the UK.

[GSWF] Where do you see growth going forward and what regions and industries are you bullish on?

[MIC] Even though our focus has been largely on private equity, we have a diversified portfolio that is balanced across asset classes and sectors. We've built a dynamic engine that allows us to capitalize on various short- and long-term trends that are fundamental to our investment thesis. We're not exclusive to any particular sectors but we continue to focus on developed markets and are bullish on emerging economies like India and China.

[GSWF] What are your global strategy and growth aspirations?

[MIC] Mubadala now has a global network of offices, which includes London, New York, Moscow and Beijing as well as our headquarters in Abu Dhabi. As we continue to grow, we will assess the benefits of opening new offices in other markets. A local presence allows us to be closer to the markets where we invest, helps with sourcing deals, and strengthens our global partnerships – a key focus for us. We also believe that our expanding footprint offers an invaluable opportunity to identify, cultivate and develop talent – both within our organization and locally – in ways that will help our people achieve their potential and positively contribute to the Mubadala story and to the communities in which we invest.



Ahmed Saeed Al Calily,
Mubadala's Chief Strategy & Risk Officer



From “Development” to “Strategic”:

Until 2017, **Mubadala** was characterized as a “Development Fund”: its teams and portfolios were organized in sectors (Petroleum & Petrochemicals; Aerospace, Renewables & ICT; Technology, Manufacturing & Mining; and Alternative Investments & Infrastructure), its asset allocation was structured around industries as opposed to asset classes, and the annual review talked about revenues instead of returns.

Since then, the fund has evolved beyond its development mission and started thinking very differently. Its 2019 annual review offered a first glimpse into its asset allocation; in 2020, it started reporting financial returns; and in January 2021, it announced a change in its structure, which would separate local and global holdings, and adapt to the increasing weight of technology and alternative investments in its portfolio.

The changes in **Mubadala**’s geographical preferences are also very evident. From 2019 to 2020, the UAE portfolio decreased from 28% to 20% of AuM as it pivoted towards Asia and Pacific, thanks to the US\$ 2 billion spent in Indian conglomerate Reliance (RRVL and Jio), among others. While the geographical split at the end of 2021 is still not available, the activity seen during the year leads us to believe it will maintain this course.

Figure 19. Mubadala’s structure and selected assets



In 2021, **Mubadala** displayed a high level of deal activity across a variety of sectors and geographies. The Credit Investments team closed a record volume of transactions with combined assets of c. US\$ 1 billion.

The Life Sciences team invested in Evotec’s Nasdaq IPO, which supported the German drug discovery company in raising an additional US\$ 500 million to develop its biologics manufacturing capacity. The team also invested in Rodenstock, the premium ophthalmic lens producer and supported PCI Pharma with the acquisition of LSNE (Lyophilization Services of New England), a premier contract development and manufacturing organization. This acquisition helped to expand PCI’s breadth of services.

Renewable energy was also high on the agenda, with investments in Israel (Masdar-EDF JV), Brazil (Renova Energia), Uzbekistan (Nur Navoi Solar), Greece (Taaleri Solar) and Armenia (Ayg-1 project with **ANIF**). Masdar, **Mubadala**’s future energy subsidiary, has become one of the world’s largest investors in clean energy, with a US\$ 20 billion portfolio of wind and solar farms all around the world. In December 2021, the Crown Prince of Abu Dhabi announced the consolidation of **Mubadala**’s, **ADQ-TAQA**’s and **ADNOC**’s renewable and hydrogen assets, under Masdar with the expectation of reaching 50GW of total capacity by 2030.

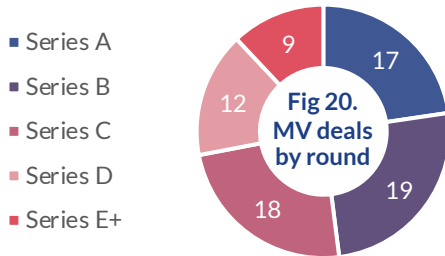
Other significant deals in 2021 included real estate (logistics in Australia and the US and residential in the Netherlands and Russia), infrastructure (MetrôRio in Brazil and CityFibre in the UK), water filtration (Culligan in the US), healthcare (Certara in the US, Activos and IVC in Europe, and UEMedical in the UAE), and some other PE transactions via Mubadala Capital (K-MAC, Apex, and Archer). But the most active group was without a doubt Mubadala Ventures, which has become one of the most prominent VC investors worldwide.



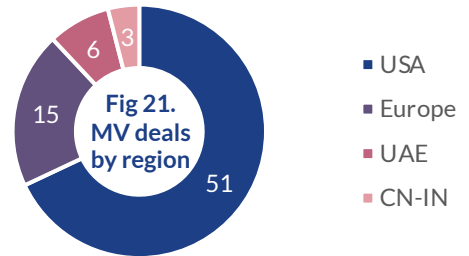
Embracing Disruption:

In October 2017, **Mubadala** announced the launch of its latest business, Mubadala Ventures, which would oversee the US\$ 15 billion commitment its parent company had done in Softbank Vision Fund I. In addition, the subsidiary would look at managing a US\$ 1 billion portfolio, comprised of a US Venture Fund (Series A+), a Fund of Funds, a European fund (Series B+) and a UAE-focused early-stage fund. All of this is managed by a small team based in San Francisco, London (in a Mayfair office steps away from Softbank's) and Abu Dhabi.

According to **Global SWF Data Platform**, since 2017 Mubadala Ventures has invested in 75 startups. Over half of those funding rounds happened in 2021, when we estimate it may have deployed US\$ 1.4 billion. The investor covers all stages of development from Series A to pre-IPO rounds, and the big majority of the portfolio companies sit in the US and Europe, although it has also started investing in the UAE, India, and China.



Source: Global SWF Data Platform



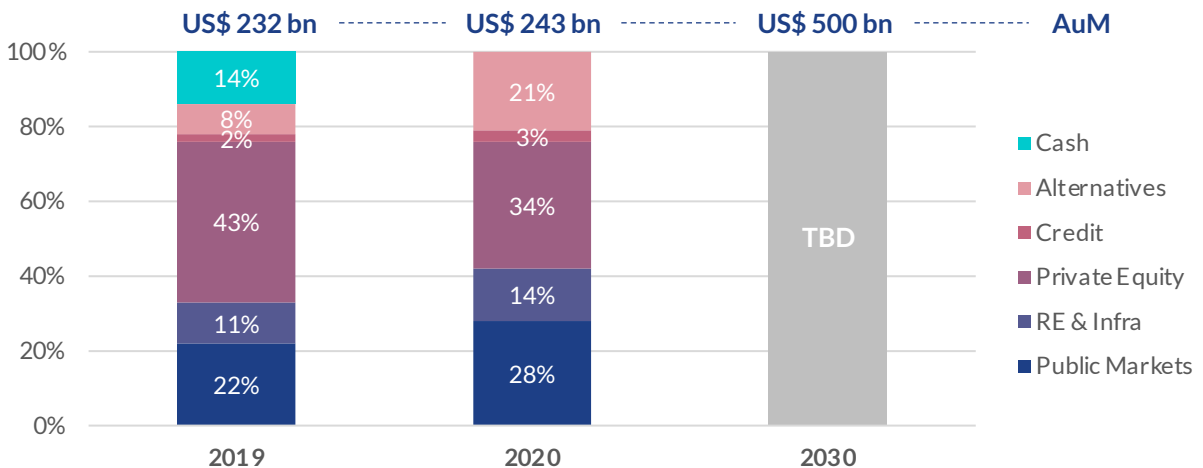
Source: Global SWF Data Platform

The team leverages on a strong connectivity to Chinese VCs through other Mubadala Capital managed vehicles. The Country Direct Investment Programs have facilitated investment programs with China (CDBC, **SAFE**), Russia (**RDIF**), France (**Bpifrance**), Greece (**HDBI**) and Kazakhstan (**Baiterek**). In addition, in 2021, **Mubadala** signed a commitment with the UK's Office for Investment (OfI) to deploy US\$ 13.3 billion in British life sciences, energy transition, infrastructure and technology assets over the next five years.

Outlook:

All in all, the sovereign investor has grown and evolved significantly in the past five years. It is difficult to predict how it will look in another eight or nine years when it expects to grow double the size of its portfolio – but it will surely keep evolving with both the domestic and global investment landscape.

Figure 22. Mubadala's changes in asset allocation over time



Source: Mubadala Annual Reviews 2019, 2020



6. Asset Class of the Year: VC



2021 marked a year of a unicorn population explosion and the birth of *decacorns* on a tidal surge of Venture Capital, with sovereign investors at the crest of the tsunami. While VC remains a small slice of SOIs' overall portfolios, allocations provide them with exposure to market disruptors with high growth potential. Valuations are at all-time highs encouraged by a fast pace of exits and strong liquidity potential, including IPOs and SPACs.

Top-Line Figures: 2021 Heralded VC Boom

Venture capital by SOIs in 2021 surged 81% over 2020 levels to a record US\$ 18.2 billion, with the number of deals more than doubling to 328. In the past six years, SOIs have invested a total of US\$ 117 billion in 1,101 deals – including investments in the tech-focused SoftBank Vision Fund 1 by **PIF** (US\$ 45 billion) and **Mubadala** (US\$ 15 billion) in 2016 and 2017, respectively. SVF1's investments ended in 2020, having backed a range of start-ups from WeWork to Uber. SOIs did not support SoftBank Vision Fund 2, signaling the evolution and improved capability of SOIs, which now prefer to develop their own venture capital expertise in-house.

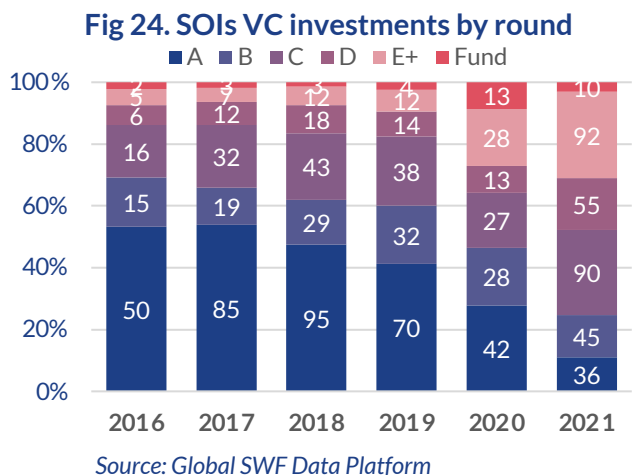
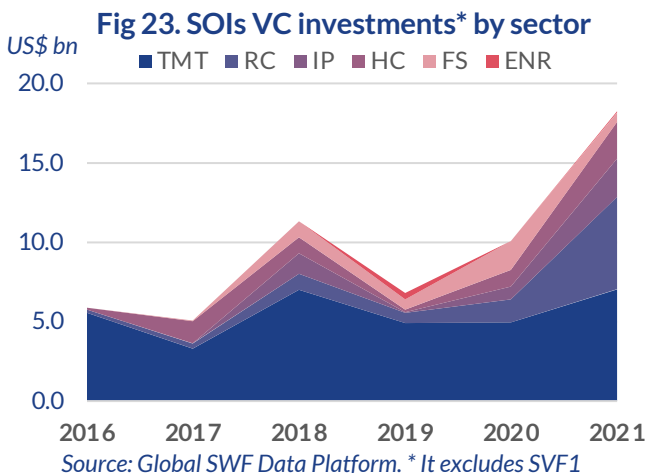
Temasek has consistently had the biggest appetite for VC and 2021 was no exception. In 2021, it invested US\$ 5.1 billion, well ahead of **GIC** (US\$ 2.8 billion) and **CPP** (US\$ 2.7 billion). The pandemic provoked a seismic change in strategy, with a shift towards sectors that are set to soar amid the change in lifestyles, consumer behavior, and public needs. SOIs are betting on increasing use of technology in every sector of life with emerging markets the key driver of growth as the digital economy grows exponentially.

Technology was the most popular sector with US\$ 6.9 billion, 40% more than in 2020. But the most impressive y-o-y growth was observed in Retail & Consumer and Healthcare segments, which have benefitted from the radical shift elicited by Covid-19. The former saw increased interest in e-commerce platforms to capitalize on changing consumer behavior, and the latter drew in capital attracted to biotech and healthtech.

IPOs Boost Allocations to Late-Stage VC

Global SWF's transaction database shows that both in volume and value terms, SOIs have shifted towards later funding series, focusing on growth and late-stage investments. This should not be seen as undue intensity in mature, large VC-backed enterprises, but as desire to back start-ups through the company lifecycle to IPO stage. Sovereign funds invested more than US\$ 3 billion in pre-IPOs – a sixth of the total value in 2021 – with many of them acting as anchor investors in public floats of start-ups they had backed in earlier stages.

In terms of individual funding rounds, Series C was the most popular target, representing 27% of the total, followed by Series D (17%) as SOIs picked out established start-ups at growth stage. The volume of Series C and Series D investments grew two-fold and three-fold, respectively, while at the same time the volume of Series A deals actually fell 24%, continuing the trend that was evident with before the onset of the pandemic.

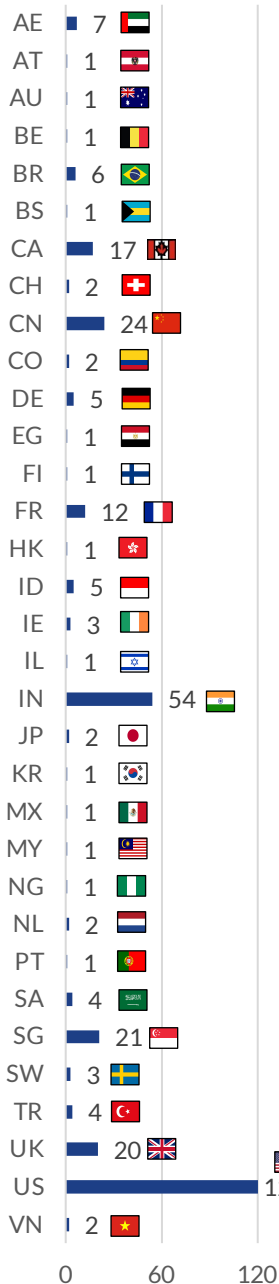




Geography: VC Goes Global

With its strong R&D community, especially in biotech and healthtech, it came as no surprise that just over a third of SOI investment flowed into start-ups in the USA. In 2021, SOIs participated in twice as many funding rounds for American startups than they did in 2020, and we saw growth in every segment of the USA market. Yet, there was a clear shift into Asian markets (particularly, China and India), and, overall, startups from 33 countries received some form of financing from SOIs, which represented a new level of globalization for VC.

Fig 25. VC'21 (#)



The Chinese market seems to have waned slightly since October, amid a clampdown on Big Tech and Beijing's antipathy towards Chinese IPOs in the US. Billions of dollars were wiped off start-up values as the government moved from edtech to gaming, wary of their growing power within China. The slash in asset values should be of concern to **Temasek** in particular, with 27% of its portfolio (underlying assets) exposed to China – more than its exposure to its home market.

Foreign capital was banned from China's EdTech sector in 2021, posing massive headaches for both **Temasek** and **GIC** as well as SVF1, which was heavily invested on behalf of **PIF** and **Mubadala**. Startups like Kuaishou and Yuanfudao were highly successful during the fundraising process but are now forced to go non-profit, and investors have found themselves stuck without many options. However, SOIs are likely to wise up to the risks, rather than withdraw from Chinese VC, thanks to their flexibility and long-term horizon. Lessons are being learned and **Temasek** appears undaunted, as it continues to back biotech, life sciences, gaming and e-commerce, from Didi Freight Unit to 3D printer WeNext.

The big surprise of the year was the attention commanded by Indian start-ups, largely due to a rapidly evolving digital economy, a relatively open economy and robust valuations at IPO stage. In July, food delivery company Zomato went public with US\$ 0.6 billion gained from 186 anchor investors including **ADIA**, **CPP**, **GIC** and **OMERS**. **Temasek** had invested in its Series J in 2020 – and likely achieved a big return on exit. Also in July, e-commerce platform Flipkart raised US\$ 3.6 billion with a new funding round that included **ADQ**, **CPP**, **GIC**, **Khazanah** and **QIA**, and consolidated its position as India's largest unicorn. Other Indian unicorns chased by SOIs included Byju's, Ola, Delhivery, PolicyBazaar, and Sharechat.

India is also not without challenges and there are significant risks for investors, especially around loss-making start-ups with big ticket valuations. If private equity funding rounds or IPOs don't match expectations, there is a danger that asset values come under attrition. **Temasek** suffered a significant setback with Indian ride-hailing app Ola, after opting out of funding rounds, which diluted its stake, and after the pandemic, which drove the app's valuation down a 25%. India will likely position itself as a Western ally amid rivalries with China, creating a regulatory environment that provides better protections for tech companies.

Domestic SOIs are directly responsible for the emergence of other VC ecosystems around the world, including Singapore (**GIC**, **Temasek**), France (**Bpifrance**), Canada (**CDPQ**, **CPP**, **OMERS** and **OTPP**), and Abu Dhabi (**ADQ**, **Mubadala**). The UK continues to be miles behind the US, but it continues to push the agenda thanks to the **British Business Bank's** Future Fund. The presence in the chart of other geographies such as Indonesia, Brazil, Turkey and Germany, with four to five deals each, seems to be promising and may stick in 2022.

Source: Global SWF Data Platform



Players: Temasek Leads, Others Follow

Temasek has been ahead of the curve in terms of developing its VC strategy, much of which has been carried out by Vertex Ventures. While the SOI universe has shifted towards later stage VC, Temasek is focusing on early-stage funding – largely at home. In 2021, 20% of Temasek’s VC was deployed in early-stage Series A and B rounds (up from 15% in 2020). Series C rounds were still its most popular target, contributing to 39% of the total value. With a strong appetite for healthcare, tech, and e-commerce, Temasek made a significant pivot to China and India, which represented 25% and 23% of its VC investment – up from 18% and 10% in 2020.

In terms of early-stage start-ups, **Temasek** has focused on supporting the deep-tech innovation sector in Singapore, to help the country become a global hub for life sciences, foodtech and advanced manufacturing. The investor is also establishing its own suite of in-house start-ups, such as AI tech and solutions provider Aicadium, travel pass software developer Affinidi, and cybersecurity company Istari. Temasek’s efforts are accompanied by the government-backed SG Equity, which supports biopharma, medtech, and agtech start-ups.

Unlike **Temasek**, **GIC** is mandated to invest overseas only, and its focus is on later-stage VC. Nearly half the value of its VC allocation was in pre-IPO rounds while just 7% was in Series A and B. Indian start-ups garnered the most attention from the SWF, making up 47% of its VC in e-commerce platforms such as Flipkart, Zomato and Delhivery, followed by the USA with 25% in Silicon Valley tech companies.

Outside of Singapore, Korea’s **NPS** – the world’s second biggest PPF – dipped its toe further into the VC pool with the goal of US\$ 0.8 billion allocation by the end of 2021. It is shrugging off its reputation as a conservative investor to tap into the fast growth of Korea’s home-birthered unicorns and successful IPO exits. Yet, VC still represents little over 1% of its total AUM, indicating room for accelerated investing in the future.

Canadian funds are further ahead in deal origination, especially in the last couple of years. Altogether, they deployed US\$ 5.2 billion in VC in 2021 – a two-fold leap from the previous year. **CPP** led the pack with more than half of that amount deployed in 23 funding rounds. **OTPP** is planning to ramp up its bets on start-ups by at least US\$ 12 billion by 2026, thanks to its Teachers Innovation Platform (TIP), which launched in 2019. Its stablemate **OMERS** is arguably the most experienced PPF in the VC sector, with OMERS Ventures celebrating its 10th anniversary in 2021. Its lion’s share was dedicated to the technology sector and to domestic start-ups.

Turning to the Gulf, we find some upcoming players such as **ADQ**. In 2020, the newly formed SOI made a surprising shift in emphasis from Infra to VC, by establishing the Alpha Wave Incubation Fund and buying interests in start-ups in India and Southeast Asia. In 2021, it invested US\$ 0.6 billion in VC, including Flipkart, PolicyBazaar and Byju’s in India; Getir and Trendyol in Turkey; and Amoun in Egypt. The investor’s intentions are serious as signaled by the hiring of seasoned professionals and the setup of a VC-focused subsidiary, ADG.

An experienced VC investor, **Mubadala** is less risk-averse and, since the full deployment of SVF1 in 2020, it has sought to emulate its tech-oriented early-stage strategy. Series A and B rounds made up 43% of Mubadala’s deal volume in 2021, and we expect that the spin-off of Mubadala Capital as a wholly-owned asset management will give the VC team even further autonomy. The significant monetizations that the investor is pursuing, including GlobalFoundries’ and Yahsat’s IPOs in 2021, will also provide it with plenty of dry powder.

The Middle East’s four largest SWFs were also active buyers of VC in 2021, with 25 deals altogether. Half of them were completed by **QIA** – more than in all previous years combined – with activity not only in the US, where its Head of Technology sits, but also in India, Turkey and the UK. **ADIA** focused on late-stage funding of Indian and Indonesian start-ups and **KIA** invested in North Africa’s rapidly growing startup ecosystem. Lastly, **PIF** was not as active in VC as in previous years, but it scored one of the best goals of the season when Lucid Motors went public in July. The Saudi fund invested US\$ 1.3 billion for 63% of Lucid in 2018, when the startup was running short of money. Three years later, the stake is worth US\$ 41 billion, and the transaction showcases the competitive advantage of SWFs when it comes to VC investing, thanks to liquidity and long-term horizon.



The rest of the activity we tracked in 2021 came from strategic funds supporting the domestic VC ecosystem. This included **Bpifrance** in France, **ISIF** in Ireland, **RDIF** in Russia, **Khazanah** in Malaysia (and China), and **NIIF** in India, which has also flexed its mandate for the fear of missing out the momentum in local start-ups.

Table 6. Top 5 SOIs by VC investments in the past 6 years (US\$ billion)

Fund	2016	Fund	2017	Fund	2018	Fund	2019	Fund	2020	Fund	2021
PIF*	48.5	Mubad.*	16.2	Temasek	2.5	Temasek	1.7	Temasek	2.1	Temasek	5.1
CIC	1.0	Temasek	1.8	PIF	2.2	Bpifrance	1.2	CPP	1.1	GIC	2.8
Bpifrance	0.7	Bpifrance	0.7	GIC	1.2	OTPP	0.9	ADQ	1.1	CPP	2.7
Temasek	0.4	GIC	0.5	CPP	0.8	Mubadala	0.8	GIC	1.0	Mubadala	1.5
Khazanah	0.1	Alaska	0.2	Bpifrance	0.8	GIC	0.4	Mubadala	0.8	QIA	1.2

Source: Global SWF Data Platform. * It includes fund commitments to Softbank Vision Fund I (US\$45b PIF, US\$15b MIC).

Outlook: High Risk

The feverish activity of 2021 raises concerns over whether valuations are realistic, although any VC investor will be mindful that risk is the nature of the game and early-stage start-ups have a high mortality rate. The huge heft of sovereign investors means that a certain amount of failure can be easily absorbed.

China's clampdown on Big Tech could augur similar moves in other markets where concerns over privacy and the power of tech companies, particularly social media, could clip the value of start-ups favored by SOIs. Regulatory action against monopolistic behavior and threats to data and cybersecurity are not going away, but thanks to their inter-generational goals, SOIs can afford to be patient as well as increasingly nimble.

We anticipate more SOIs entering the VC space, including strategic investors. India's **NIIF** and Indonesia's **INA** made their first tentative steps into VC in 2021 to support domestic start-ups, and they are eager to forge relations with foreign SOIs to support the VC ecosystem. This would mirror **Temasek's** strategy of cultivating home-grown tech to boost national R&D and, in turn, economic competitiveness.

We expect fintech, e-commerce, and biotechnology to remain major VC targets for SOIs, but ESG will be an overriding theme with sustainability and climate change increasingly at the heart of SOI strategy. As such, capital will flow into ESG-related tech and limiting the impact of climate change.

Regulatory shifts concerning SPACs and public market volatility could upset IPOs, undermining exits for assets targeted by SOIs. With listings potentially delayed to achieve more optimal valuations, we can expect a rebalancing of SOI investment in VC towards early-stage and growth-stage.

"Pension funds, by our very nature, play a long game. So, it should be ideally suited to venture investments that traditionally have a long feedback loop. But it does require a different type of investing mindset - and it's not easy to do. Any investment strategy targeting average returns will not produce sufficient returns to warrant the investment program, so to get it right, a fund needs to commit to putting the right structure in place. As a venture fund, we represent only a very small part of OMERS overall asset make-up. So, the risk is small, but with venture-level returns, the potential reward is huge.

Having recently celebrated a decade in venture investing, we have the ability to see first-hand the impact that many of these companies are having on the world - pushing the boundaries of autonomous driving through investments like Waabi, supporting developments in quantum computing through our investment in Xanadu and contributing to a world where online search doesn't mean giving up your personal privacy through our investment in DuckDuckGo. The benefit of our direct insight into innovation is that OMERS can keep its finger on the pulse of the latest technology disruptions across the board."



Damien Steel, Global Managing Partner, OMERS Ventures



7. Region of the Year: Australia



Australia emerged as a hot destination for state-owned investors in 2021, reaching new heights as US\$ 23.8 billion was poured into real estate, infrastructure assets and private equities. **Global SWF** believes the trend will persist as the government drives forward its infrastructure program, capitalizing on the country's geographical and resource strengths to play a leading role in regional economic integration.

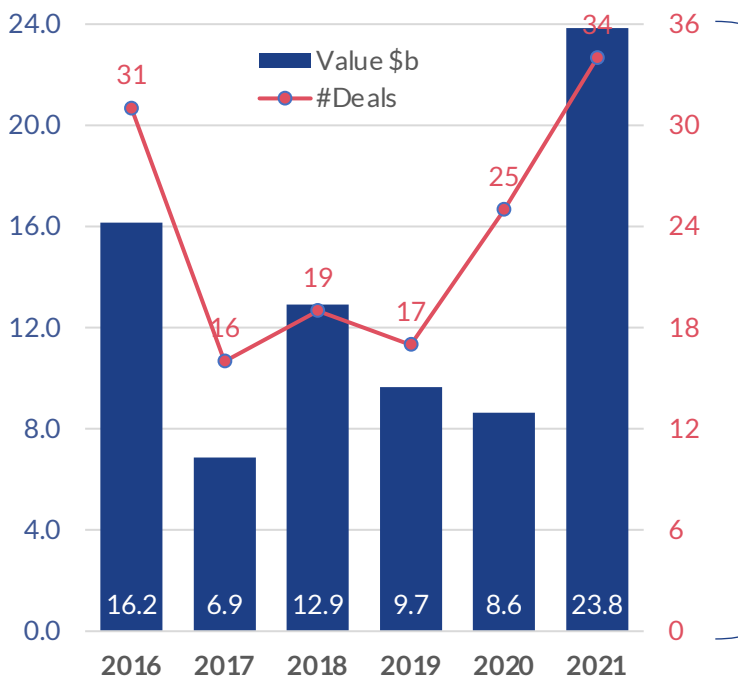
Real assets have long been a focus for SOIs investing in Australia and 2021 was no exception. In terms of value, infrastructure represented 47% of the total for the year and real estate, a 39%, with the remainder made up of private equity. Foreign state-owned investors took the lead, contributing to 69% of the total.

Canadian pension funds feature prominently in the Australian markets, representing 31% of the total sovereign capital in the country since January 2016. They are also the funds that have established offices in Australia's financial capital Sydney, beginning with **OPTrust** in 2013 with **OMERS**, **CDPQ** and **CPP** entering in each subsequent year. Dutch investor **Bouwinvest** joined them in 2019, and Singapore's **GIC** will do so in 2022.

In 2021, **CPP**, **CDPQ**, **OMERS** and **OTPP** each invested over US\$ 2 billion in Australia. However, they were eclipsed by **GIC**, which invested US\$3.7 billion. Over the past six years, the Singaporean fund has deployed over US\$ 12 billion Down Under, making it the biggest investor among sovereign funds.

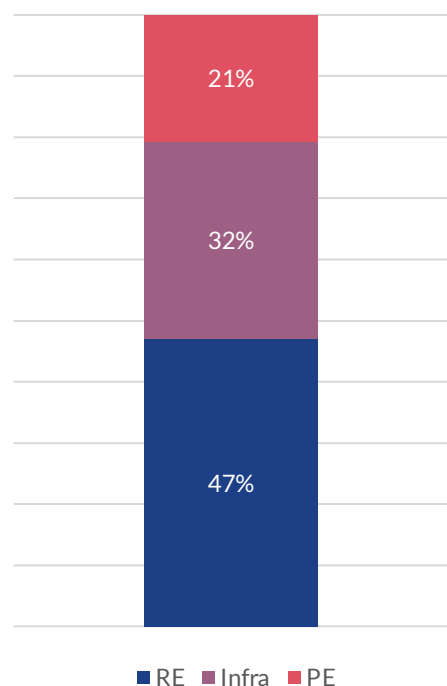
There is yet another twist to Australian public finances and a link between its inflows and outflows of capital. In 2018, the state government established the NSW Generations Fund (**NGF**) with US\$ 7.3 billion from reserves and from the sale of a 51% stake in WestConnex. In 2021, when the remaining 49% of the motorway was sold, the revenue was used to alleviate public debt levels and boost the growth of the **NGF**. In other words, the domestic SWFs was funded through the acquisition of prime domestic assets by foreign sovereign investors. According to the NSW budget 2021-2022, the **NGF** is expected to grow 7.5 times to US\$ 65 billion in 10 years thanks to such foreign acquisitions and to the issuance of debt. The entity expects to market bonds at a rate of 1.5%, which compares to the fund's target investment return of about 6.5%.

Figure 26. SOI investments in Australia



Source: Global SWF Data Platform

Fig 27. 2021 AU by Industry (#)





Domestic Champions:

What distinguishes Australia from other markets is the role of domestic funds, which often establish consortia with foreign SOIs in bidding for big ticket assets. Australia hosts nine federal-level funds with combined AuM of US\$ 736 billion in 2021, and 11 state-level funds with US\$ 428 billion – altogether, the country has US\$ 1.2 trillion in its balance sheet spanning sovereign wealth funds and superannuation funds.

The most prominent and active federal funds are the **Future Fund**, **AustralianSuper** and newly-created Australian Retirement Trust (**ART**), which will become the second largest federal superannuation fund. At a sub-national level, the NSW Treasury Corporation (**TCorp**), the Queensland Investment Corporation (**QIC**), and the Victoria Funds Management Corporation (**VFMC**) are among the biggest and most active state investors.

Future Fund has over 40% of its portfolio invested in alternatives, which is remarkable for a savings fund, and has a strong global network of asset managers to offset the lack of offices overseas. **QIC** is highly focused on real assets with a significant foreign portfolio, while **TCorp** and **VFMC** are smaller and more domestic. **AustralianSuper** has a more conservative investment profile with 79% of its portfolio in liquid assets.

Deal activity and size are not the only factors that make Australian funds stand out. They are also known for their best practices, and **Future Fund** was the only SOI to have a perfect score in our **2021 GSR Scoreboard**, which assesses the efforts of global investors around Governance, Sustainability and Resilience.

Triggered by the declining returns and pressure on costs caused by Covid-19, the Australian regulator is calling on superannuation schemes to consider mergers & acquisitions that increase their scale and allow them to provide attractive investment options at competitive fees. Consolidation has been ongoing on for a several years: from 2013 to 2019, the number of funds regulated by APRA decreased from 279 to 185. Only since 2020, we have seen nine M&A processes that have involved the pensions of 8.6 million Australians.

The M&A transactions take very different shapes and forms. The recent acquisition of **Club Plus Super** by **AustralianSuper** represented the swallowing of a smaller fish by a larger one, but some other deals are mergers of equals with a new name adopted by the NewCo, such as the merger between **QSuper** and **SunSuper** to form Australian Retirement Trust (**ART**) in early 2022. Others are more akin to a change in name (e.g., **LGS** becoming **Active Super**) or to a pooling mechanism without legal changes (e.g., **MaritimeSuper** and **HostPlus**).

In any case, the creation of these larger pools of capital is a game-changer for the global investment landscape. **AustralianSuper**, **ART** and **Aware Super** are now funds with more than US\$ 100 billion each that compete and co-invest with other state-owned investors both at home and abroad – a trend that is also observed among British pension funds and with Middle Eastern sovereign entities (both SWFs and PPFs).

Table 7. Consolidation of Australian superannuation schemes in the past 18 months

NewCo	Merging Schemes	State	AuM (US\$b)	Members (m)	Effective
TBC	CBUS, Media Super	Federal	50	0.9	Jul-22
ART	QSuper, SunSuper	QLD	152	2.0	Apr-22
AustralianSuper	AustralianSuper, Club Plus Super	Federal	174	2.5	Dec-21
Active Super	Local Government Super	NSW	9	0.1	Jul-21
LGIASuper	LGIASuper, Energy Super	QLD	17	0.1	Jul-21
Pooled Super	Maritime Super, HostPlus	Federal	43	1.5	Apr-21
Spirit Super	Tasplan, MTAA Super	TAS	18	0.2	Apr-21
Togethr	Equip, Catholic Super, MySuper	VIC	18	0.2	Mar-21
Aware Super	First State Super, VicSuper	VIC	112	1.1	Jul-20
		Total	593	8.6	

Source: Global SWF Data Platform

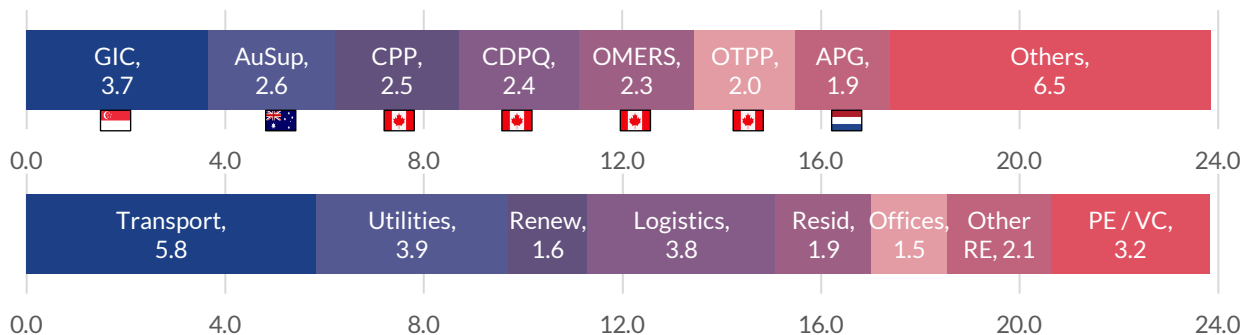


Real Assets: The Big Attraction

Investment in Australian infrastructure was boosted by one deal: the sale of a 49% stake in the 70 km WestConnex motorway that links Sydney's west to the city center, Port Botany (partly owned by **ADIA**) and Sydney Airport (in the process of being invested by **AustralianSuper** and **ART** among others). Led by giant operator Transurban, a consortium including **ADIA**, **AustralianSuper**, **CDPQ** and **CPP** bought the remaining 49% stake in WestConnex for US\$ 8.0 billion. The NSW Government plans to transfer the proceeds to the NSW Generations Fund (**NGF**), a sovereign fund managed by **TCorp**, although most of it was used to pay off debt.

In another high-profile deal, **OTPP** and **PSP** invested alongside KKR to take over Spark Infrastructure for US\$ 3.7 billion (12% above its share price value). Spark possesses US\$ 12.2 billion of electricity network assets including a 15% stake in Transgrid, Boman Solar Farm (100MW in operation and 2.2GW in development), and 49% of distributor SA Power Networks and of Victoria distributors Citipower and Powercor.

Figure 28. 2021 Australian investments by SOI and segment (US\$ billion)



Source: Global SWF Data Platform

Deal activity continued unabated in the real estate sector, covering offices, retail, logistics, residential and industrial sectors. Sydney and Melbourne are seeing high levels of demand for offices that have pushed up rents, while land constraints in prime locales – such as central business districts – have pushed up asset prices. Industrial and logistics is focused on coastal areas with supportive networks, particularly in cities such as Perth.

Logistics real estate saw rapid growth in Australia, in line with the global growth in response to the changing nature of consumption patterns, accelerated by Covid-19. Domestic-foreign tie-ups were prominent. In a major leap forward for the sector, **CDPQ** subsidiary Ivanhoé Cambridge teamed up with **AustralianSuper** and **TCorp** to acquire the Moorebank Logistics Park for a total of US\$ 1.5 billion. ESR and LOGOS emerged as on-the-ground partners for **GIC** and **CDPQ**, respectively, in 2021. In April of 2021, **Mubadala** forged a three-way partnership with LOGOS and KKR in its first foray into the Australian logistics space.

These partnerships are a stepping-stone for SOIs to originate their own deals, providing the basis for understanding the market and its opportunities. As such, foreign SOIs are likely to move from JVs with domestic SOIs and asset managers towards establishing their own teams and driving their own deals.

In the office market, 2021 saw two major transactions: **GIC**'s partnership with Charter Hall to purchase 50 Marcus Clarke St in Canberra and **NPS**'s acquisition of One Melbourne Quarter. Yet, there were also divestments of offices with **CPP** offloading three office blocks and two shopping malls (which it shared with **ADIA**) for US\$ 1.7 billion and **GIC** selling its 49% in Australian Logistics Trust to Blackstone for US\$ 1.5 billion. The transaction activity reflected the robust growth in Australia's office market despite remote working arrangements and flexible workspaces, with SOIs confident of long-term yield and ability to divest on maturity.



Outlook: Infra is the Mainstay, but VC is Set to Pick Up

Australia's energy and utilities infrastructure network is mature, but there are opportunities for growth, particularly in the fast-growing renewable energy segment. The country is expected to gradually phase out coal-fired thermal electricity generation in favor of renewables, with wind and solar power leading growth. Improvements in transmission and distribution infrastructure and battery storage capacity will also feature prominently in the infrastructure growth story. The pressure is on to improve electricity grid infrastructure to support the rise of electric vehicles, among other new household electricity requirements.

Transport infrastructure will remain a growth area, the majority of which will be comprised of road construction. The government's 10-year US\$ 79 billion Infrastructure Investment Programme (IIP) will drive investment in roads with SOIs likely to pay interest in roads of strategic importance, which connect businesses to local and international markets. Airports, seaports, and railways will also remain highly attractive – areas where foreign sovereign investors have already established investments, such as the Port of Melbourne (CIC, GPIF, NPS, OMERS), Port of Brisbane (ADIA, CDPQ), and NSW Ports – Botany and Kembla (ADIA).

SOIs could play a role in helping deliver upgrades and the construction of transport corridors. WestConnex is likely to be a template for PPPs to help the government attract private capital and co-fund projects. One upcoming megaproject is the US\$ 8.4 billion North-East Link in Melbourne with Spark Infrastructure winning the bid to build and operate the 6.5 km of beneath the Yarra River and Banyule Flats, linking the Metropolitan Ring Road to the Eastern Freeway at Bulleen in Melbourne's Northeast.

An under-explored area is local VC for digital disruption, fintech, e-commerce or alternative proteins. These are exactly the areas that are currently exciting SOIs, but for some reason, Australian start-ups and VC funds have not been as prominent as their overseas counterparts. The exception may be Blackbird Ventures, which has attracted funding from domestic SOIs with investments valued at US\$ 7.2 billion and an IRR of 81%.

Table 8. Blackbird	Raised	SOIs	Investments	IRR
Fund 1 (2013)	US\$ 21 million	-	20	74.8%
Fund 2 (2015)	US\$ 139 million	Aware Super, HostPlus	32	75.5%
Fund 3 (2018)	US\$ 188 million	Aware, Future Fund, HostPlus	35	78.7%
NZ Fund (2019)	US\$ 20 million	-	-	-
Fund 4 (2020)	US\$ 466 million	AusSuper, Aware, FF, HESTA	39	99%

Source: Blackbird Ventures website, Global SWF Data Platform

The potential for Australian VC is likely to be realized in coming years, especially as Singapore's GIC establishes its operations. Like its sister fund Temasek, GIC has an aggressive VC strategy alongside its interest in big ticket infrastructure investments. And where the Singaporean investors go, peers are bound to follow. We would not be surprised if Canadian funds also use their existing real assets platforms to diversify into VC.

"We continue to see Australian infrastructure as an important and dynamic market with a number of exciting opportunities. Our recent investment in WestConnex is a great example of our ability to come alongside leading partners and bring a combination of capital and expertise to Australia's largest road project."

Jean-Étienne Leroux, Managing Director, Australia & New Zealand, CDPQ





8. Industry of the Year: Healthcare



During times of economic crisis and recession, healthcare has proven to be resilient and a strong performer. For sovereign investors, it is a defensive growth sector that can ride out shocks and uncertainties – simply because it is an essential service. Yet, the global health crisis has added an extra boost to this broad sector, which can be divided into four major segments: biotech, pharma, devices, and services.

The Covid-19 pandemic brought challenges as well as opportunities for the healthcare industry. Unprecedented global collaboration to discover vaccines and treatments for the virus boosted capital in healthcare businesses with biotechnology gaining increased importance.

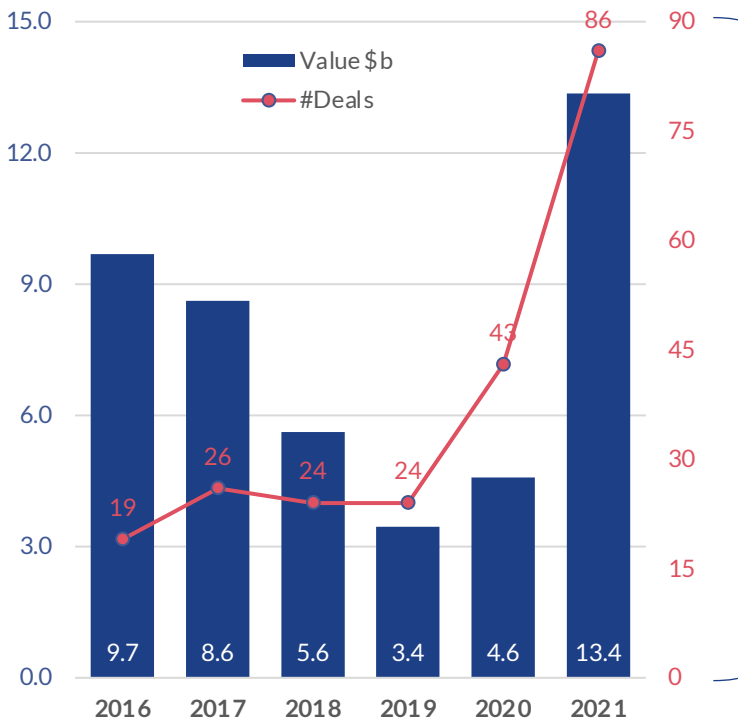
Sovereign investors flocked to the biotech sector, as other sectors faced heightened risks due to lockdowns, while healthcare provision gained increasing relevance for society and the economy. The move has put boosters on a process of biomedical scientific progress that was already underway and created numerous unicorns out of startups as governments relied on health technology as a route out of the crisis.

Global SWF data shows that the value of SOI investments in healthcare almost tripled to US\$ 13.4 billion in 2021. Direct investment accounted for 43% of this figure with 35% comprised of co-investments, 18% venture capital and the remainder allocated to healthcare-focused private equity funds and listed equities.

In deal volume terms, Venture Capital represented 63% of transactions across the year with an average ticket of US\$ 44 million. SOIs investing in healthcare startups were looking for already established players that needed capital to expand markets and broaden their research and product pipeline. As such, almost three quarters of all VC in healthcare was devoted to series C or later funding rounds, mostly in biotech.

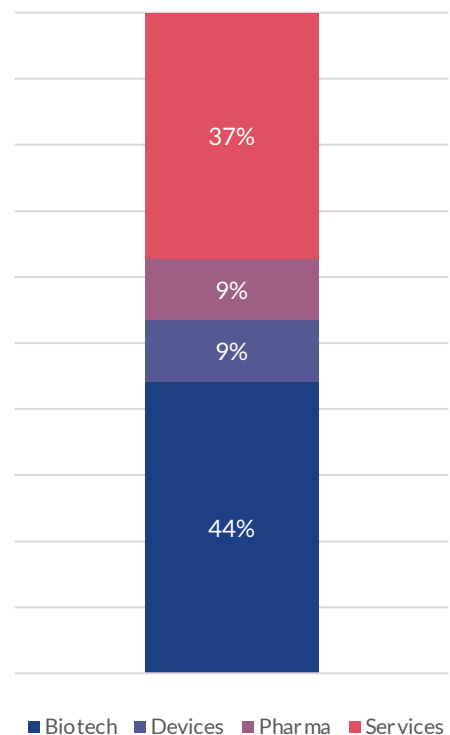
Direct private equity investment, including co-investment, was channeled into more mature, chunkier assets that were either traditional pharmaceutical producers – albeit branching out into new modalities in research – or clinical service providers and medical device suppliers. Although fewer in number, the deals were large and for some SOIs were part of a strategy to develop an integrated approach to healthcare investment.

Figure 29. SOI investments in Healthcare



Source: Global SWF Data Platform

Fig 30. 2021 HC Deals (#)





Biotech: Temasek at the Cutting Edge, RDIF goes all in

According to Eroom’s law, drug discovery is slower and increasingly expensive over time. However, new approaches and technologies including AI are set to make this process faster, safer, and more effective. For investors, this means lower risks, higher asset value growth potential, and better returns on exit. The pandemic accelerated this process, particularly in mRNA with vaccine producers Moderna and BioNTech (Pfizer) – backed by **ADIA** and **Temasek**, respectively – leaping in value and encouraging a flood of capital.

ADIA funneled US\$ 100 million into Moderna’s Series G in 2018 and saw the value of its investment grow by 22x after the company was approved to produce Covid-19 vaccines in 2020. **Temasek** also moved quickly and invested in BioNTech in June 2020, before Pfizer vaccines were available. Russia’s **RDIF** was instrumental in funding and even distributing Sputnik V, which was the first Covid-19 vaccine to be launched.

Other funds, such as **NBIM**, owned shares in AstraZeneca, Sinopharm and Johnson&Johnson, which participated in vaccine development. However, the impact on stock price from Mar’20 to Dec’21 varied considerably, from +36% for AstraZeneca and +27% for J&J to +3% for Sinopharm amid concerns over profits. The success of vaccines was determined not only by efficacy but also by geopolitics and international relations.

Table 9. Vaccines	Pfizer-BNT	Moderna	J&J	Oxford-AZ	Sinopharm	SputnikV
Country						
SOIs	Temasek	ADIA	NBIM	NBIM	NBIM	RDIF
Others	EIB, Gates	EDBI, Sequoia	Vanguard, NT	Wellingt, SSGA	Fidelity, BK	n.a.
Countries Dist.	150	82	76	184	86	49
Approx. Efficacy	95%	94%	66%	70%	79%	92%
Market Cap (\$b)	73.4	114.5	430.1	169.7	7.0	n.a.
Stock 3/20-12/21	+879%	+1166%	+27%	+36%	+3%	n.a.

Source: Global SWF analysis from public sources

In 2021, **Temasek** led drug discovery and deepened its exposure to coronavirus treatment by backing several Chinese vaccine developers, including Clover Biopharmaceuticals, Suzhou Abogen Biosciences, Abiochem and Wuhan Binhui Biotech. It also deployed capital into British and US startups dedicated to genetics research, notably US\$ 200 million in G2 Bio Companies and US\$ 40 million in Cambridge Epigenetix.

Other sovereign investors followed suit, including Canada’s **CPP** and Abu Dhabi’s **Mubadala**. The former focused on growth stage venture capital in the US including AI-driven Inistro, while the latter diversified with bets in the UK and India. At the beginning of the year, a Series B in a gene writing business called Tessera Therapeutics brought together SVF2, **QIA** and **Alaska PFC**, which has been dubbed the “king of biotech”. The Us state-level fund has invested US\$ 2.5 billion in the segment since 2013, generating net returns of over 102%.

Case Study: RDIF and Sputnik V



On March 16, 2020, the world turned upside down as billions of people were forced to quarantine at home. On the same day, the Russia Direct Investment Fund (**RDIF**) announced an investment in a PCR diagnosis system for Covid. Less than five months later, the fund had led the registration of the vaccine Sputnik V by the Ministry of Health. It was the first vaccine to be registered and had high levels of efficacy, despite Western skepticism.

Fast forward a year and a half, and by end-2021 Sputnik V had been approved by 70+ countries, with India, Iran and Palestine leading the procurement of doses. What makes the collaboration unique is that **RDIF** is not only acting as an investor but is also leading the licensing of production and distribution of vaccines worldwide.

Established in 2011 as a catalyst for direct investments into Russia, over its first decade **RDIF** has invested US\$ 2.7 billion and attracted US\$ 25.9 billion from partners – a 9:1 multiplier effect unheard of among other SWFs. Russia’s other SWF, the National Wealth Fund (**NWF**), serves as fiscal stabilization with US\$ 185 billion in AuM.



Pharma: ADQ Builds its Integrated Healthcare Cluster

In pharmaceuticals, Abu Dhabi-based **ADQ**'s activity was notable as it bought up established manufacturers in its pursuit for diversification. Deals included its acquisition of Acino, for an amount equating to the combined value of all SOI investments in drug discovery. Unlike startups, the Swiss company already leads novel drug delivery in several therapeutic areas, spanning the entire globe with a strong pharmaceutical manufacturing base. It also maintains a collaboration agreement with Pharmax to license, manufacture, and supply select Acino products across the Middle East and Africa, fitting with the Abu Dhabi investor's strategy.

ADQ also acquired 90% of Egypt's Amoun Pharmaceutical with **TSFE** taking the remainder, in the context of closer economic and political links between Abu Dhabi and Cairo. **ADQ**'s pharma portfolio covers the full pharma value chain, including a stake in Indian biosimilars producer Biocon Biologics and online retailer PharmEasy, as well as UAE-based Pharmax, SEHA and Union71. Its activities are complemented by **Mubadala**, which signed an agreement with G42 to establish a biopharmaceutical manufacturing campus in Abu Dhabi.

Devices: Established SWFs take the lead

The medical device sector is another area of innovation, supporting non-invasive surgery and the application of robotics to reduce risk and speed up recovery. Due to the pandemic, there was a perceptible market shift towards ventilators and diagnostics. **ADIA** and **GIC** invested in a consortium of Blackstone, Carlyle and Hellman & Friedman to buy a majority stake in medical supplier Medline Industries in a multi-billion-dollar transaction. Medline is one of the largest privately-held manufacturers and distributors of medical supplies such as surgical equipment, gloves, and laboratory devices used by hospitals around the world.

QIA was one of the biggest buyers in the segment in 2021 with a US\$ 0.5 billion investment in German producer Siemens Healthineers, which was used to pay for the acquisition of US peer Varian in its bid to become a world leader in cancer care therapy. In the diagnostics segment, **Mubadala** and **Khazanah** focused on venture capital in the US and China. The former led a US\$70 million Series A round for Xilis which has a mission to transform cancer care in diagnostics and the latter led a US\$88 million venture round for Chinese clinical laboratory service Adicon. Canada's **OMERS** teamed up with Goldman Sachs and AXA to take over leading European laboratory diagnostics provider Amedes and **CDPQ** took a significant minority stake in Mexican medical diagnostics services provider Grupo Diagnóstico Aries, giving it exposure to a high-growth market.

Services: Focus on Emerging Markets and Healthtech

Sovereign investors showed interest in patient care and healthcare services, which are typically mature assets. Acquiring hospitals and clinics as well as ancillary products and services enables investors to respond to long-term trends: ageing societies in the developed world and rapidly growing middle-classes in emerging markets. For example, **Mubadala** continued developing a portfolio of healthcare assets with the acquisition of a 60% stake in UEMedical, adding to its network Danat Al Emarat Hospital, the HealthPlus Network of Specialty Centres, HealthPlus Fertility (the region's largest IVF provider), and Moorfields Eye Hospital Abu Dhabi.

Singapore's **GIC** also opted for high value stakes in care providers with a particular interest in emerging markets. In 2021, it snapped up a 16% stake in Malaysia's Sunway Healthcare for US\$180 million. Sunway Healthcare operates two tertiary hospitals and plans to build up to six more hospitals. It also led a consortium investing US\$203 million in VMC, the parent of Vinmec International General Hospital, Vietnam's premier private hospital developer and operator. But the SWF did not just restrict itself to emerging markets and made a US\$1 billion investment in Biomat USA, which operates a network of blood plasma collection centers.

India's **NIIF** also joined the pack with the acquisition of a minority share in the country's Manipal Hospitals for a US\$ 0.3 billion, helping its purchase of Columbia Asia Hospitals. Manipal already had the backing of **Temasek**, which acquired an 18% stake in 2017. The hospital operator is planning an IPO by 2024.



Canadian funds opted to concentrate on US service providers, indicating more risk-aversion than their SWF counterparts. **CDPQ** teamed up with Centerbridge Partners to acquire Medical Solutions, which provides clinical staff for hospitals and care facilities in the US. Meanwhile, **OTPP** looked to invest in more specialized care, taking a majority stake in Acorn Health, a leading US provider of therapy for autistic children.

Yet, service provision is also changing as it too is touched by tech, developing services beyond physical clinics and hospitals to deliver telemedicine. Investment in healthtech accelerated as the world adapted to remote working and mobile apps, spurring development and adoption of telehealth and other digital solutions. Investment was also stimulated by the relaxation of regulations of low-risk digital health devices and services.

Temasek led SOI investments in healthtech solutions, representing five of 13 deals – mostly VC. One of its biggest investments was in Helix, a consumer genomics company that provides customers with personalized products based on DNA. **ADIA** secured a significant minority stake in Italy’s Dedalus, a provider of healthcare information and clinical and administrative software to hospitals, clinics and laboratories.

Another software provider seeking market disruption, Kry received more than US\$ 0.3 billion in a Series D round led by **CPP** with participation from existing investors, including **OTPP**, to support its European expansion and development of patient-facing apps. Lastly, **Mubadala** and **OMERS** helped turn India’s Innovaccer, which provides software services to enable health-related data processing, into a unicorn.

#	Asset	Country	SOI/s	Segment	Value (\$b)
1	Medline Industries	US	ADIA, GIC	Devices	2.0
2	Acino	CH	ADQ	Pharma	1.2
3	Biomat	US	GIC	Services	1.0
4	Healthcare Activos	ES	GIC, Mubadala	Services	1.0
5	Amoun Pharma	EG	ADQ, TSFE	Pharma	0.7
6	UEMedical	AE	Mubadala	Services	0.6
7	IVC Evidensia	UK	Mubadala	Devices	0.5
8	Amedes	DE	OMERS	Devices	0.5
9	Acorn Health	US	OTPP	Services	0.5
10	Siemens Healthineers	DE	QIA	Devices	0.4

Source: Global SWF Data Platform

Outlook

The pandemic is changing the way in which SOIs invest and healthcare has come into focus as a source of significant long-term yield. Coronavirus is set to be an ongoing multi-year threat, adding impetus to the radical shift in biotech and healthtech that has changed the dynamic of medicine research and development. As 2022 progresses, SOIs will intensify their focus on R&D in virology with a view to keeping up with Covid-19 mutations. Demographics will also influence long-term trends with increasing focus on diseases and needs associated with rising affluence and an ageing population: diabetes, heart disease, cancer, and residential care.

Faced with a range of inter-related sectors, from drug discovery to care provision, state-owned investors are likely to develop strategies to take advantage of changing demand dynamics. Healthcare will add impetus to either total portfolio management or creating integrated subsidiaries, such as Mubadala Health, that can deploy capital across asset classes to adapt to a rapidly evolving context that requires multiple strategies, from public equities and corporate debt to venture capital and real estate.



9. ESG: Good News, At Last



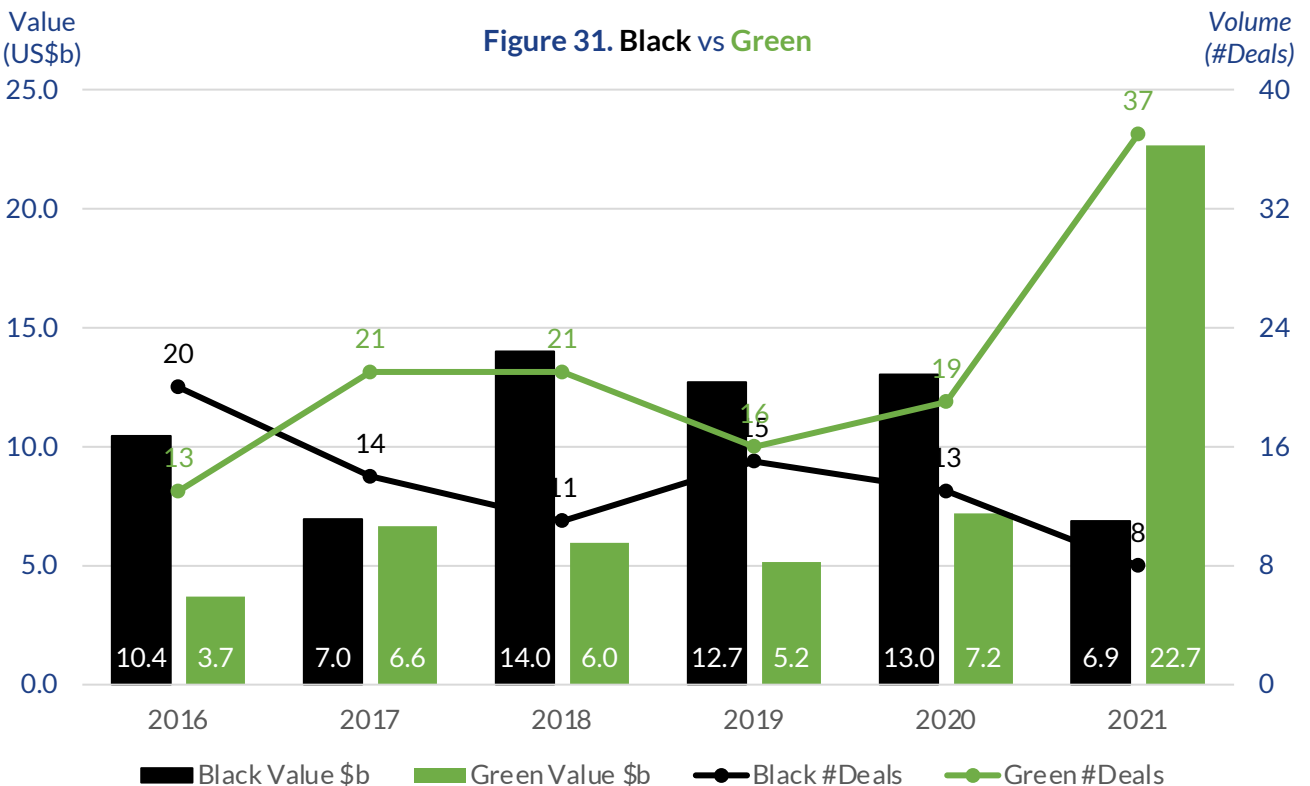
2021 will be remembered as the first year in which SOIs made more green investments than black investments – more than three times the total value. This milestone was a few years in the making and has concluded a trend that has been driven by social pressure and financial returns and accelerated by the Covid-19 pandemic.

On the one hand, we saw very few investments in the oil and gas sector compared to past years. **OTPP** took over from **ADIA** and **OMERS** and acquired a 38% in Scotia Gas, and **Mubadala** completed several deals in Brazil (RLAM Refinery), Egypt (Block 4 field), Saudi (Aramco Pipelines), Israel (Tamar oilfield) and Russia (Sibur).

On the other hand, we saw the highest ever level of activity in renewables in history by state-owned investors, which spent US\$ 22.7 billion in 37 different transactions. These took very diverse forms:

- Acquisitions of brownfield assets, including **NBIM**'s purchase of 50% in Borssele 1 & 2 offshore windfarms in the Netherlands, **OTPP**'s bid for certain US assets of NextEra and **APG**'s takeover of Vasa Vind in Sweden;
- Investments in greenfield assets, including **ADQ**'s and **Samruk Kazyna**'s JV for new solar and windfarms in Kazakhstan and **CDP Equity**'s partnership with Eni to develop renewable energy assets in Italy;
- Expansion of existing vehicles including Northvolt (**AP Fonden**, **OMERS**) and Generate Capital (**FF**, **QIC**);
- Acquisition of shares in listed companies, such **QIA**'s in Iberdrola's Avangrid; and
- Commitments to new climate-focused funds, including Blackrock Decarbonization Partners (**Temasek**), Brookfield Global Transition Fund (**Temasek**, **OTPP**, **PSP**, **IMCO**) and TPG Rise Climate (**OTPP**, **PIF**, **PSP**).

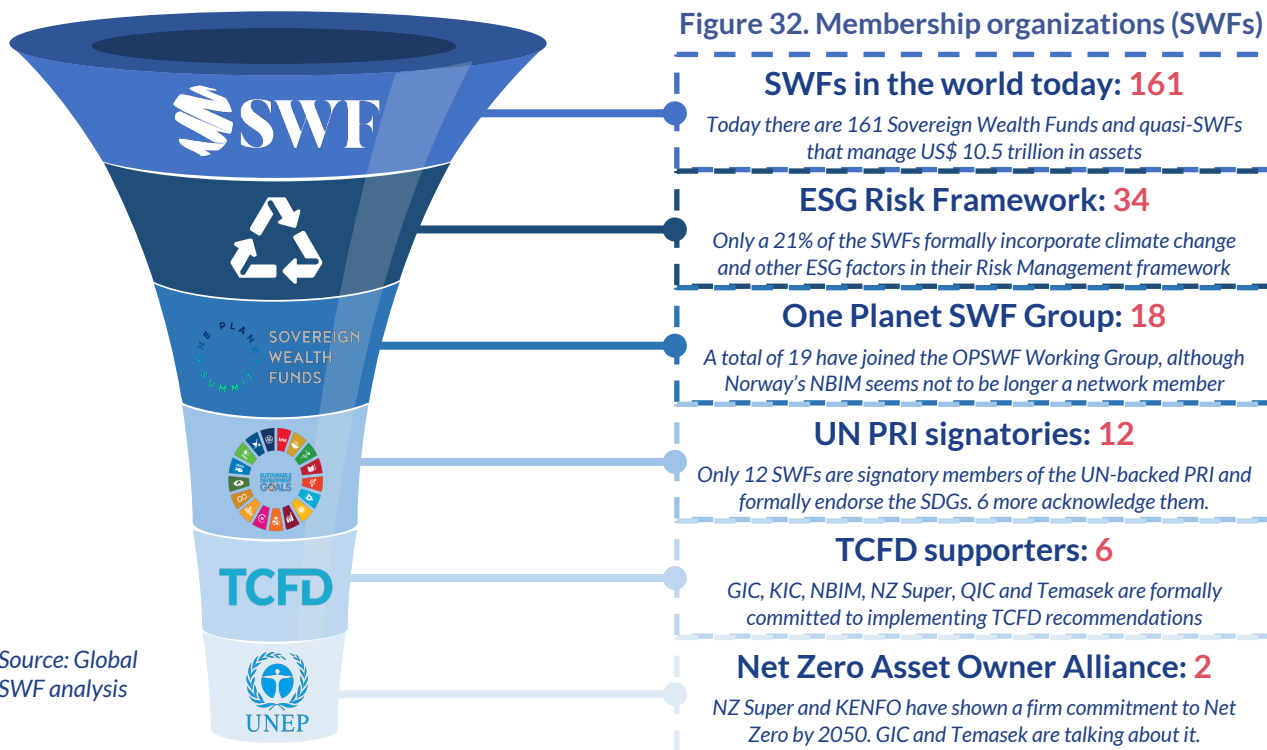
The last two funds attracted unprecedented interest from the international community. Brookfield's BGTF raised an initial US\$ 7.0 billion, with the views of reaching US\$ 12.5 billion; and TPG Rise Climate reached US\$ 5.4 billion with a hard cap of US\$ 7.0 billion. Sovereign investors are hungry – and pressured – to access and to deploy capital in high-quality, sustainable initiatives, and chances are that reputable managers will be very successful in the subsequent fundraising processes. We expect other major players to follow Blackrock, Brookfield and TPG in helping fill the gap in ESG investing in 2022 and beyond.



Source: Global SWF Data Platform



Figure 32. Membership organizations (SWFs)



Source: Global SWF analysis

The other side of the coin is represented by the membership to certain organizations and signing up to their principles. SWFs have generally been slower than PPFs when it comes to such memberships although the UN-backed PRI and the One Planet SWF Group seemed to have gained some momentum in 2021. However, some of these underlying guidelines are not enforceable and can result in diversion or greenwashing.

Net Zero organizations are pushing for more accountability by forcing members to commit to specific goals year after year, and if these are not met, the funds must leave. Perhaps this is the reason we have not seen many SWFs joining them yet: only German quasi-SWF **KENFO** has signed up for the UN-convened **Net Zero Asset Owner Alliance** and only **NZ Super** has joined the PAIL-driven **Net Zero Asset Owners Commitment**. Others including **GIC** and **Temasek** have not joined any group but outline their net zero goals in their annual reports.

"We see responsible investment as a continually evolving concept. As managers of the NZ Super Fund, we believe environmental, social and governance (ESG) considerations, including climate change, are fundamental to our long-term risk and return profile. Part of readying ourselves for the future is being alive to and embracing changes taking place in the present. This means shifting our focus to "sustainable finance" – or thinking about how the environmental and social outcomes of our investing activities impact on both present and future generations.

Where the focus of responsible investment involved managing how ESG risks impact on investments, sustainable finance involves considering the impact of investments on the environment and society. At a practical level, for us this means improving the ESG performance of the Fund's global listed equity holdings and increasing the number and scale of positive investments we make that benefit society, in addition to delivering the financial returns we require. Through this ambitious shift, we aim to contribute to New Zealand's transition to a more resilient, inclusive, robust and agile financial system."



Anne-Maree O'Connor, Head of Responsible Investment for NZ Super Fund



2021 GSR Scoreboard:

Since July 2020, Global SWF has issued an annual assessment of the Governance, Sustainability and Resilience (“GSR”) efforts of state-owned investors. The **GSR Scoreboard** has become a critical tool of analysis and its results serve as a reality check for asset owners to quantify and improve their best practices, and it enables asset managers and portfolio companies to stay informed of crucial aspects of their stakeholders.

The scorecard raises 25 questions: 10 related to Governance and Transparency; 10 concerning Sustainability and Responsible Investing; and five on Resilience and Legitimacy. These questions are answered binarily (Yes / No) with equal weight and the results are converted into a percentage scale for each of the funds. The study is applied to 100 major SOIs, generating 2,500 data points, and may be expanded during 2022.

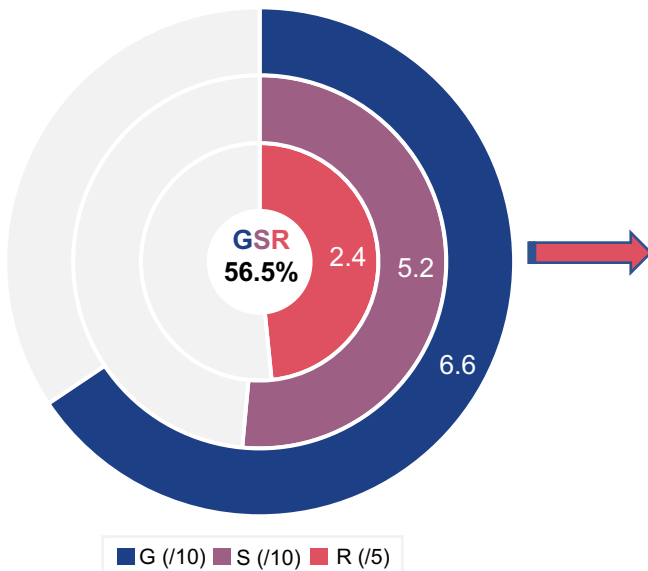
In 2021, and for second year in a row, the only fund to score 100% of all elements was the **Future Fund**. It was followed by **CDPQ**, **NBIM**, and **NZ Super** (all with a 96%), and **AIMCo**, **NPS** and **Temasek** (all with a 92%). The laggards continued to be the Middle Eastern funds, especially around governance and resilience issues. Overall, 39% of the funds failed the GSR test: CEOs sacked overnight (see page 45), managers prosecuted for misuse of public funds, and governance crisis are some of the red flags that are still too common in the industry.

Compared to the 2020 edition, we saw a certain degree of improvement. Nine of the Top 100 funds that were rated in the first year were replaced, and of the remaining 91 funds, 36 improved their scores, 21 stayed the same and 34 saw worsening performance. Some funds including **LIA**, **FSDEA** and **PIC** took positive steps to solve very difficult situations, and India’s **NIIF** and Indonesia’s **INA** started issued audited accounts.

The comparison of 2020 and 2021 makes it evident that Sustainability and ESG are an increasing priority at a Board level. Korea’s **KIC** published its first Sustainability report, Panama’s **FAP** became a signatory member of the UN PRI and Saudi Arabia’s **PIF** started building an ESG team. The One Planet SWF Group saw nine more SWFs sign up in 2020 and four more in 2021, although we are yet to see any practical actions.

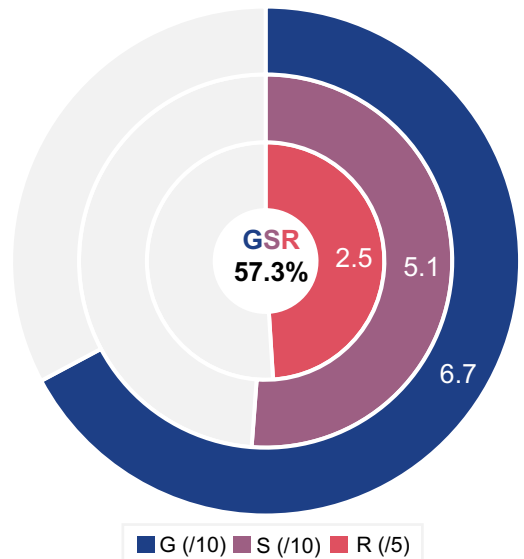
However, resilience is still a problem. Most state-owned investors with a decreasing GSR score have issues with liquidity and spending control. After the significant withdrawals motivated by Covid-19, several funds were exhausted, and some others were reformulated or merged. Most have still a lot of work to do when it comes to legitimacy, liquidity risk, discipline, spending control, asset allocation, and crisis management.

Figure 33: 2020 Scoreboard



Source: Global SWF’s 2020 GSR Scoreboard

Figure 34: 2021 Scoreboard



Source: Global SWF’s 2021 GSR Scoreboard

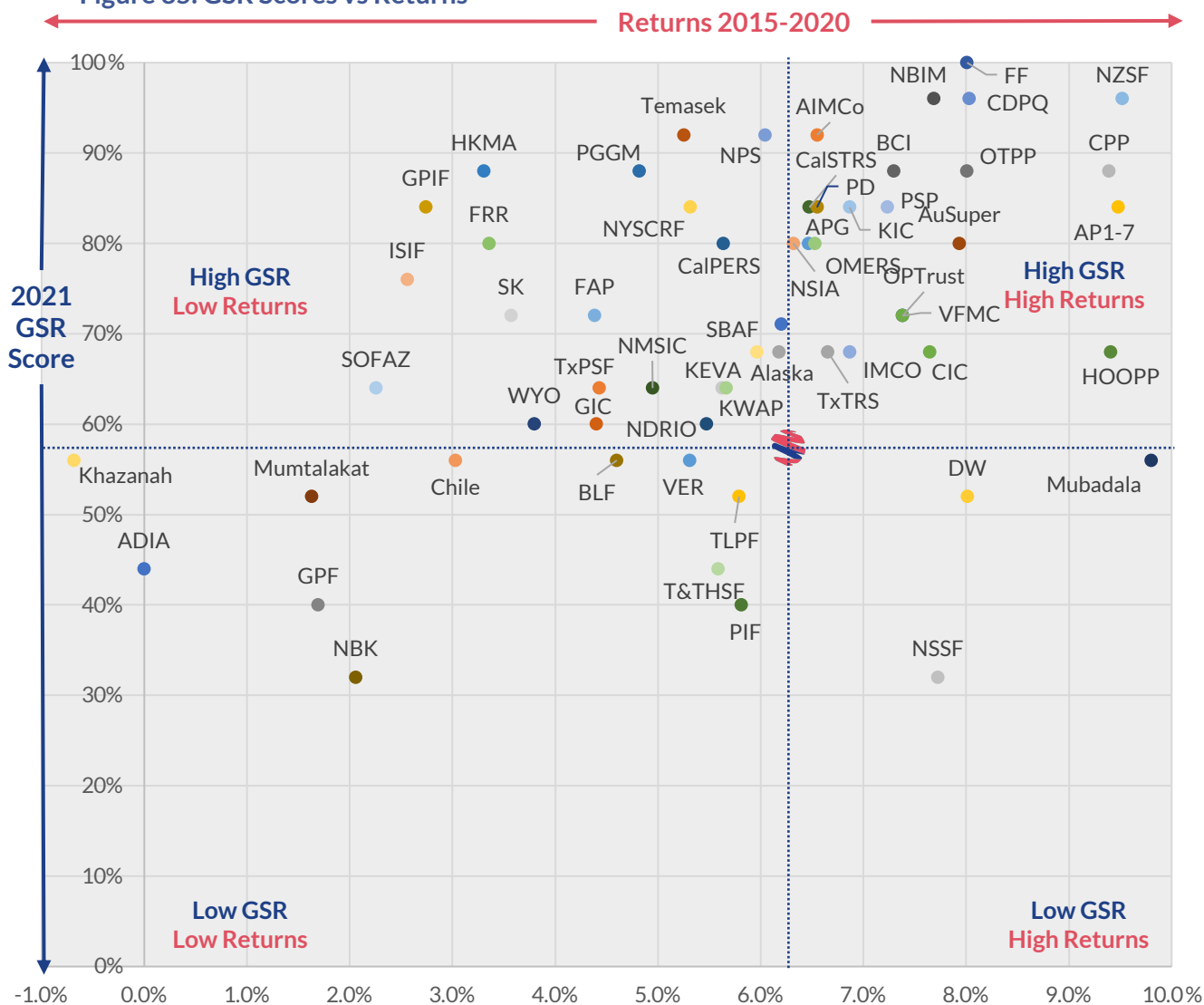


Relevance and significance:

We have found a “moderate positive relationship”, with a correlation coefficient of 0.52, between the 2021 GSR scores and the average investment returns over the period 2015-2020, based on a sample of 60 different State-Owned Investors from all continents. In other words, those funds that do not look after proper governance, sustainability and resilience, do not generally perform very well.

Interestingly, the strongest correlation is found between the “S” component and the financial returns – i.e., increasing efforts when it comes to Sustainability, including investing in green companies, pays off in the long term. We can clearly see this effect with the “best in class” category, which includes **NZ Super**, **Future Fund** and **NBIM** (as sovereign wealth funds), and **AP Funds**, **CPP** and **CDPQ** (as public pension funds), and have all shown superior performances over the past six years. When it comes to SOIs, *doing good is good for business*.

Figure 35. GSR Scores vs Returns



Source: Global SWF's 2021 GSR Scoreboard

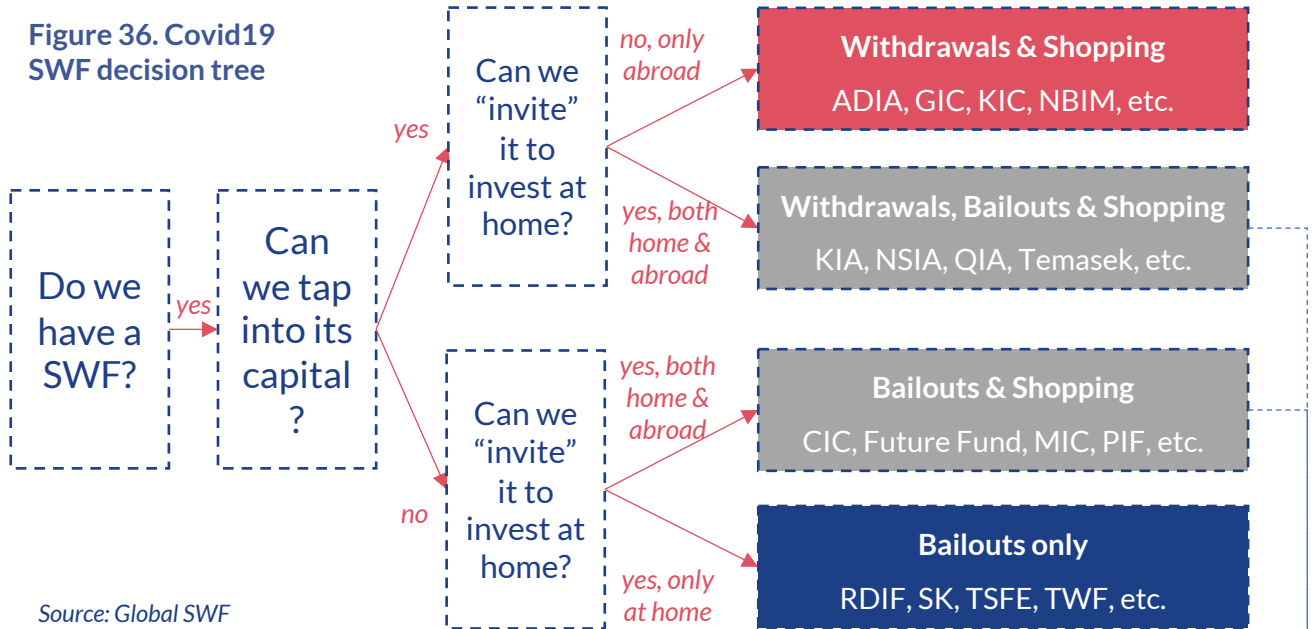


10. Organizational Matters



SWF Response to Covid-19:

Most media covering the effects of Covid-19 on the SWF industry missed an important point: these are highly heterogeneous funds with very different mandates, restrictions, and structures, which determined how each of them could support their governments and citizenry during the economic shock. Some funds were asked for capital (*withdrawals*) or invited to invest in struggling domestic businesses (*bailouts*), while others could afford to seek investment opportunities abroad (*shopping*). This is best represented by the decision tree below.

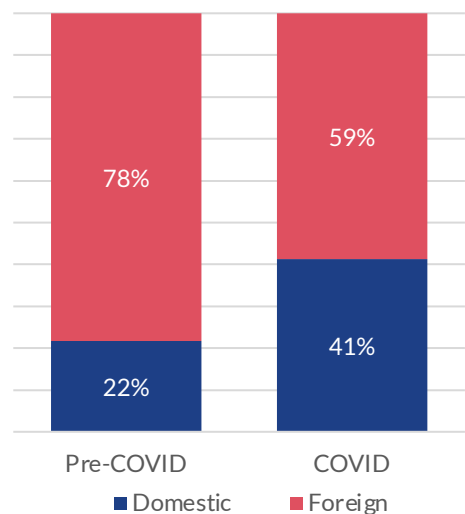


At the same time, one cannot analyze whether “SWFs are investing more or less domestically” without first filtering out the funds with geographical restrictions, as follows:

- Sovereign funds that, by policy, cannot invest domestically (pink box above): ADIA, GIC, KIC, NBIM, etc.
- Sovereign funds that, by policy, can only invest domestically (blue box above): RDIF, SK, TSFE, TWF, etc.

If we analyze the remaining SWFs, i.e., those with a flexible mandate that can invest both at home and overseas, we observe that in the two years leading to Covid-19, they invested 22% of their capital at home; and during Covid-19, that percentage increased to 41%. The findings of this study were published by *the Wall Street Journal* in July 2021 ([link](#)).

Fig 37. Mixed-mandate funds





New, Merged and Depleted Funds:

Those following our [Global Track](#) will notice that the number of SWFs and PPFs we cover change constantly. This is not by design or lack of rigor – on the contrary. Governments are continuously considering the establishment of new investment funds and the merger of existing ones, and our tracker changes accordingly.

In 2020, most discussions on restructuring and launching funds were stalled due to Covid-19, and we only saw two new funds (Djibouti's **FSD**, Indonesia's **INA**), and the merger of two schemes (Oman's **OIA**, Australia's **Aware Super**). 2021 saw more activity. The most important new SWF is Azerbaijan's **AIH**, which is modelled after Kazakhstan's **Samruk Kazyna** and received stakes in leading businesses including national oil company SOCAR. The other three funds were somewhat smaller, including Bangladesh's **BIDF**, Cape Verde's **FSGIP** and Rio de Janeiro's **FSERJ**, which will try to be more successful than the already defunct federal fund.

In addition, superannuation funds witnessed significant consolidation (see page 31), while Omani pensions were merged into two institutions. The consolidation will continue in 2022 in both Australia and the Middle East, notably with the merger of **GOSI** and **PPA** in Saudi. We may also see new SWFs formed in Israel (**Citizen's Fund**), Namibia (**Welwitschia**), Mozambique (**FSM**) and Ethiopia (**EIH**). Other discussions in Bahamas, Kenya, Jordan, Iraq, PNG, Romania, Sarawak, South Africa, and Suez Canal look farther away from bearing fruit.

Climate change, technology and Covid-related aid are disrupting the public finances of many countries, both emerging and developed. In December 2021, Germany's Minister of Finance declared the redeployment of US\$ 68 billion in borrowing that had already been put aside for "future investments". At the same time, Swiss economists called for a US\$ 1 trillion SWF, using capital from the Central Bank. The definition of a SWF has become blurrier, and we will be paying attention to see whether Europe adds another significant vehicle.

Table 11. New SOIs 2020-2022

Fund	Country	Est	Type	AuM
EIH	Ethiopia	2022	SWF	TBC
FSM	Mozambique	2022	SWF	TBC
Welwitschia	Namibia	2022	SWF	0.1
Citizens Fund	Israel	2022	SWF	0.3
BIDF	Bangladesh	2021	SWF	2
AIH	Azerbaijan	2021	SWF	22
FSGIP	Cape Verde	2021	SWF	0.1
FSERJ	Brazil	2021	SWF	0.4
FSD	Djibouti	2020	SWF	0.2
INA	Indonesia	2020	SWF	12

Source: Global SWF Data Platform

Table 12. Merged SOIs 2020-2022

Fund	Country	Est	Type	AuM
CBUS+Media	Australia	2022	PPF	50
ART	Australia	2022	PPF	152
GOSI+PPA	Saudi	2022	PPF	250
Active Super	Australia	2021	PPF	9
Pooled Super	Australia	2021	PPF	52
Spirit Super	Australia	2021	PPF	18
SSF/MSSRF	Oman	2021	PPF	15
Together	Australia	2021	PPF	18
OIA	Oman	2020	SWF	32
Aware Super	Australia	2020	PPF	112

Source: Global SWF Data Platform

The exhaustion of sovereign vehicles is also a regular occurrence. In the past few years, several governments have left their savings accounts with zero balance or closed them altogether. We can distinguish:

- Vehicles that are no longer fit for purpose and are replaced by other funds, e.g., Chad's **FSIST** to replace **FIRST** (a year after set up), Ireland's **ISIF** to replace **NPRF**, or Iran's **NDFI** to replace **OIF**;
- Stabilization funds that are exhausted but are left open in case revenues start flowing in again. This is the recent case of Peru's **FEF**, Colombia's **FAEP** and Mexico's **FEIP** after Covid-19.
- Accounts that have being mismanaged and fully drained and are permanently shut down, e.g., Uganda's **PRIR**, Brazil's **FSB** or Algeria's **RRF**.

Table 13. Depleted SOIs

Fund	Country	Est	Type	Exh
FAEP	Colombia	1995	SWF	2020
FEF	Peru	1999	SWF	2020
FEIP	Mexico	2001	SWF	2020
PRIR	Uganda	2015	SWF	2020
ECA	Nigeria	2004	SWF	2020
FSB	Brazil	2008	SWF	2019
FIRST	Chad	2017	SWF	2018
MDF	Ghana	1994	SWF	2018
RF	Russia	2008	SWF	2018
RRF	Algeria	2000	SWF	2017

Source: Global SWF Data Platform



New and Closed Offices:

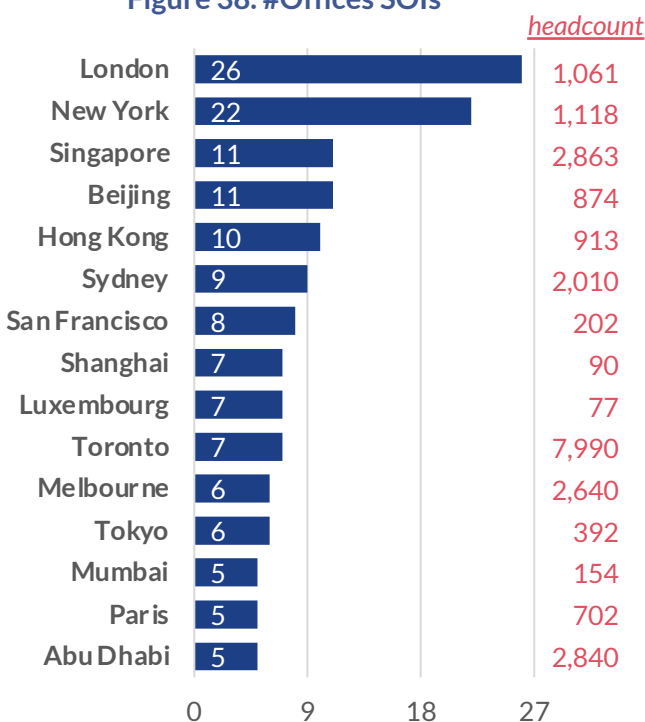
State-owned investors are increasingly sophisticated and global, and they are choosing to open office overseas to be able to hire local experts, to scout for new opportunities and to manage their holdings on the ground. London and New York continue to be the preferred locations for offices overseas, and both cities combined run almost 50 set-ups that employ over 2,000 professionals. Three SOIs have recently opened or are in the process of opening an office in the Big Apple: **AustralianSuper**, **BCI** (for the Private Equity team), and **PIF**.

But locations must serve a purpose, and there is an increasing number of funds looking at San Francisco for technological investments (**KIC** opened in 2021 and **QIA** may be next), at Singapore as an Asian hub (**OTPP** in 2020, **QIA** in 2021 and **HOOPP** may follow in 2022) and at Sydney to Australian real assets (**Bouwinvest** in 2019 and **GIC** in 2022). This year also saw **Temasek** opening in Brussels (for EU relations) and Shenzhen (alternative to Hong Kong), and **ADQ** setting foot in Cairo, in order to manage an increasing Egyptian portfolio.

Some openings are done in grand ribbon-cutting ceremonies and proudly announced in press releases. What we do not usually hear about is about offices being shut down – but there have been quite a few. Back in 2015, **CIC** closed in Toronto and moved to New York, and **ADIA** shut its low-key London office. More recently, **KIA** closed Beijing to move to Shanghai, **Khazanah** cut costs by closing its Istanbul and London offices, and **QIA** closed Beijing and Mumbai to move to Singapore. Some other funds suddenly stop reporting certain offices, such as **CDPQ**'s in Beijing, **OTPP**'s in New York and **Temasek**'s in Hong Kong and Chennai.

The presence of sovereign entities in other jurisdictions is certainly subject of debate and curiosity. For example, **GIC** is **Temasek**'s and **Khazanah**'s landlord at 101 California Street in San Francisco; **NBIM** bought the building it was renting (Queensberry House) in London in 2015, 15 years after moving into the City; **CDPQ** and **OMERS** Sydney-based professionals may be having lunch together as the offices are three floors apart; and **Mubadala** (via **ADIC**) was **APG**'s landlord at the Chrysler building in New York until it sold it in 2019.

Figure 38. #Offices SOIs



Source: Global SWF Offices at <https://globalswf.com/offices>

Table 14. Opening of SOI offices overseas

Fund	New Office	Opened/ing
GIC	Sydney	2022
BCI	NYC	2022
HOOPP	Singapore	2022
PIF	NYC, London	2022
ADQ	Cairo	2021
AusSuper	NYC	2021
KIC	San Francisco	2021
QIA	Singapore	2021
Temasek	Brussels	2021
Temasek	Shenzhen	2021

Table 15. Overseas offices shut down

SOI	Office	Shut down
QIA	Beijing	2021
QIA	Mumbai	2021
Khazanah	London	2019
Khazanah	Istanbul	2019
KIA	Beijing	2018
ADIA	London	2015
CIC	Toronto	2015
CDPQ	Beijing	n.a.
OTPP	NYC	n.a.
Temasek	HK, Chennai	n.a.



New and Gone CEOs:

On December 9, 2021, Angela Rodell was sitting at her annual performance review with the Board of Trustees of the **Permanent Fund** in Juneau, Alaska. She should not have had many reasons to worry as she had grown the pool of capital from US\$ 51 billion to US\$ 81 billion since 2015, and she was highly respected among the global community – and was the world’s only female CEO of a SWF. However, she had been [quite vocal](#) against the distribution of dividends, and against the reduction in the staff’s salaries, and the Board decided to remove her at that very moment. This is not something you would expect from a country like the United States, but we must remember that all State-Owned Investors are publicly owned, and are, therefore, subject to politics.

Ms. Rodell was not the first CEO to be dismissed in 2021. In February, when Covid-19 vaccines were still not widely distributed in North America, **CPP**’s Mark Machin decided to fly to Dubai to get his done. This was interpreted by some as a lack of empathy and accountability and after a discussion with the Board, he decided to leave. A couple of weeks later, another [highly respected](#) leader, Turkey **TVF**’s CEO Zafer Sönmez, was replaced overnight by its Chairman, President Erdogan. Mr. Sönmez’s predecessor, Mehmet Bostan, had been let go in the same manner while representing the fund at their first IFSWF event in Kazakhstan in 2017.

Perhaps more concerning was the removal of Mamadou Mbaye, a Senegalese national that was leading the newly formed **FSD** in Djibouti; he was let go overnight due to the Board’s “lack of confidence”. Mr. Mbaye had become the first foreign CEO of a SWF in history but was in office for less than a year. Other CEOs that saw their contracts not renewed included **KIC**’s Choi Heenam, **Khazanah**’s Shahril Ridza, and **KIA**’s Farouk Bastaki.

Other changes in leadership seemed to be more natural and anticipated. However, these 20 funds are amongst the Top 100 largest in the world, and 20% is a very high churn rate. During 2020 and 2021, these organizations were highly disrupted by external factors, and changing their leader may have not been the best idea from a business continuity management perspective. We do hope that this ratio decreases in 2022.

Table 16. Changes in CEOs during 2021

#	Fund	Country	Date	Outgoing	Incoming	Reason
1	ISIF	IE	Feb-21	Eugene O’Callaghan	Nick Ashmore	Retired
2	INA	ID	Feb-21	n.a.	Ridha Wirakusumah	New Fund
3	CPP	CA	Feb-21	Mark Machin	John Graham	Vaccine
4	KWSP	MY	Mar-21	Alizakri Alias	Amir Hamzah Azizan	Retired
5	APG	NL	Mar-21	Gerard van Olphen	Annette Mosman	Private
6	TVF	TY	Mar-21	Zafer Sönmez	Arda Ermut	Removed
7	Samruk	KZ	Apr-21	Akhmetzhan Yessimov	Almasadam Satkaliyev	Retired
8	KIC	KR	May-21	Choi Heenam	Jin Seung-ho	Not renewed
9	FSD	DJ	May-21	Mammadou Mbaye	Slim Feriani	Removed
10	DP World	AE	May-21	Mohammed Al Muallem	Abdulla Bin Damithan	Retired
11	AIMCo	CA	Jul-21	Kevin Uebelin	Evan Siddall	Retired
12	CaISTRs	US	Jul-21	Jack Ehnes	Cassandra Lichnock	Retired
13	ADG	AE	Jul-21	n.a.	Khalifa Al Suwaidi	New Fund
14	Khazanah	MY	Jul-21	Shahril Ridza	Amirul Feisal Wan Zahir	Not renewed
15	KIA	KW	Aug-21	Farouk Bastaki	Ghanem Al-Ghaniman	Not renewed
16	AusSuper	AU	Oct-21	Ian Silk	Paul Schroder	Retired
17	Temasek	SG	Oct-21	Ho Ching	Dilhan Pillay Sandrasegara	Retired
18	VFMC	AU	Oct-21	Lisa Gray	Kate Galvin	Retired
19	KEVA	FI	Nov-21	Timo Kietäväinen	Jaakko Kiander	Retired
20	Alaska PFC	US	Dec-21	Angela Rodell	Valerie Mertz	Removed
(2022)	QIC	AU	Apr-22	Damien Frawley	Kylie Rampa	Retired

Source: Global SWF Data Platform



11. State-Owned Investors 2030

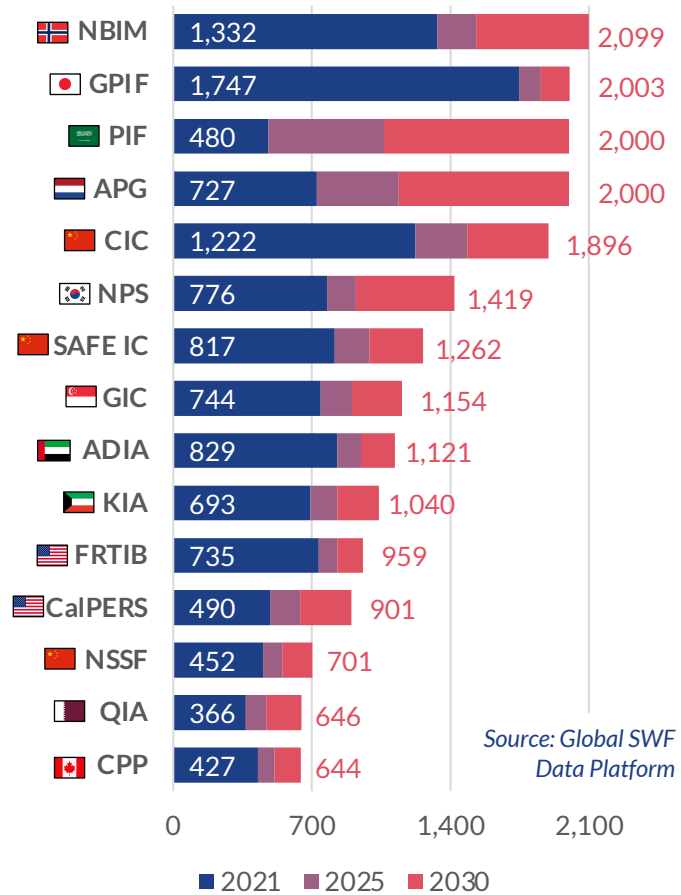


Last year at this time, we issued our first edition of the State-Owned Investors 2030, forecasting that the industry would reach US\$ 50 trillion in AuM by then. However, we were not expecting the stock rally and subsequent growth in AuM that followed and funds now are in a very different position than last year. Our new “crystal ball” figure is US\$ 53.7 trillion by 2030.

This figure is based on individual projections for all the major funds. Some of them including **NBIM**, **PIF**, **APG**, **GPIF**, **NPS** and **CPP** have been bold enough to project their balance sheets to 2025, 2030, 2050 and beyond (**GPIF** is expecting to peak at US\$ 4.6 trillion in year 2074). For the rest, we have relied on the average growth between 2016-2021 when we believed they made sense, or our estimates otherwise.

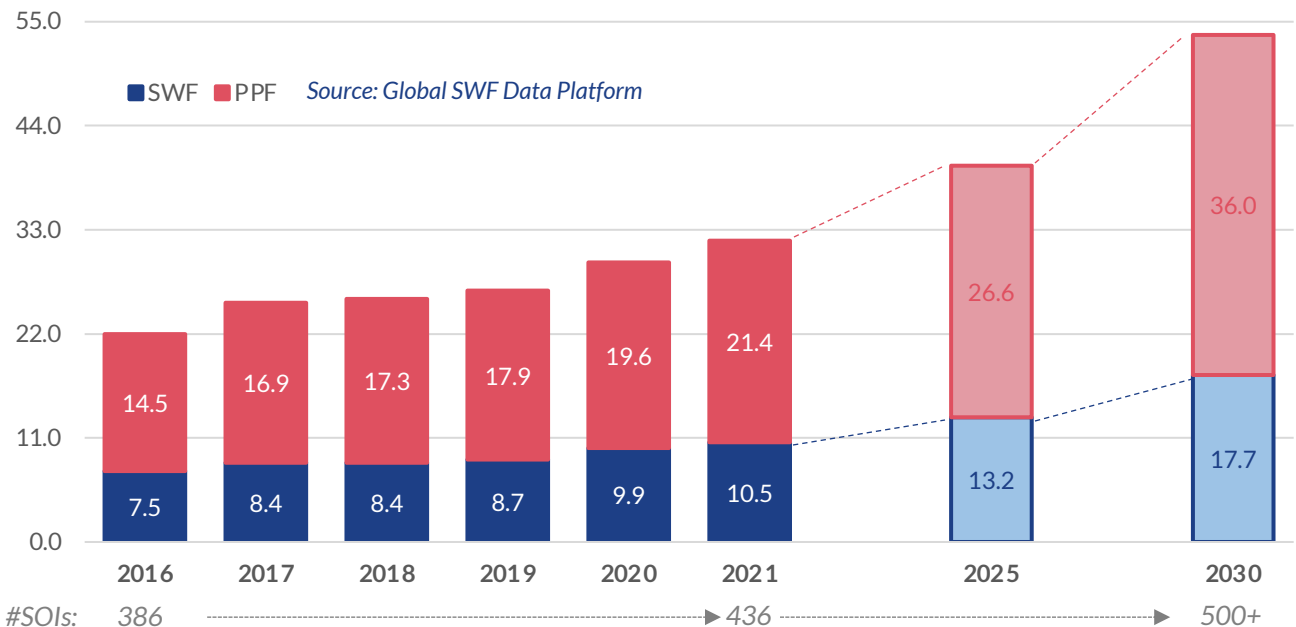
We are expecting SWFs to grow from the current US\$ 10.5 trillion, to US\$ 13.2 trillion by 2025, and US\$ 17.7 trillion by 2030. This will be growth in AuM but also new funds that may arise out of excess or need of capital. Public pension funds, on the other hand, will keep benefiting from consolidation and increasing contributions, and we expect them, to grow from today’s US\$ 21.4 trillion, to US\$ 26.6 trillion by 2025, and to US\$ 36.0 trillion by 2030. We foresee that there will be at least 500 SOIs by 2030 and some of them, if established, may become very significant and can also contribute to the growth of the industry

Figure 39. Top 15 SOIs by 2030



Source: Global SWF Data Platform

Figure 40. SWFs & PPFs Projected AuM, 2030





Just like we did last year, we have paid closed attention to the latest forecasts from the IMF, issued in October 2021. The significant current account balances expected of **Germany** (US\$ 2 trillion), **Japan** (US\$ 1.1 trillion), **Taiwan** (US\$ 0.7 trillion) and **Switzerland** (US\$ 0.4 trillion) during the period 2021-2026, make us think that these territories could consider the establishment of their own future generations fund.

Last year we also predicted that we would see several new offices overseas, especially in Southeast Asia and in Australia. Indeed, **QIA** opened in Singapore and **GIC** announced a new set-up in Sydney. We also expected funds like **BCI** to open an office outside of Victoria – which they will do in New York very soon.

But let's not keep scores. We [talked often](#) with the funds' C-suite this year and there seems to be a common message: SOIs are bullish on private markets, especially on private equity and infrastructure. We also expect private credit and venture capital to gain a more significant allocation over the next few years.

As we move past the pandemic, strategic funds will move from “forced investments” to “opportunistic investments”, so we may see a recalibration of the balance between domestic and foreign investments. In any case, we believe domestic mandates are here to stay and most of the funds that will join the universe of SWFs will have an important role at home. This will only contribute to the blurrier line between owners and managers.

Geopolitics will continue to play an important role in SOIs' activities. According to the WB and IMF projections, four of the top five world economies will be Asian by 2024: **China**, **India**, **Japan** and **Indonesia**. The tensions between US and China will only escalate, and the EU will continue to fight its internal demons, this time without Chancellor Merkel. The world economy was expected to grow 5.9% in 2021, and 4.9% in 2022.

Technology will continue to disrupt the investing world. Venture Capital will only gain importance and a fundamental part in SOIs' portfolios. And so will healthcare, given the changes in demographics and fight against epidemics. We expect these two industries to continue to be favored over real estate, especially offices.

If there was any doubt last year, ESG has confirmed that is here to stay. The unparalleled level of green investments we have seen this year in both public and private markets, as well as the number of commitments pursued by SWFs and PPFs this year, paint a more positive picture than 12 months ago. Yet, there is much more work to do and will funds must continue shaping their governance framework, investment strategies and internal teams around ESG-related issues in the years to come. **NBIM** completed its first investment in unlisted renewable energy infrastructure in 2021 and has the potential of deploying tens of billions of dollars more in European wind and solar farms within the next few years. Others may follow suit. Additionally, we expect several state-owned investors to be underway towards the goal of running carbon-neutral portfolios by 2030.

As highlighted by our [GSR Scoreboard](#) in mid-year though, it is not only sustainability that must be tackled but also governance, and, especially, resilience. In 2021, we watched a few funds getting exhausted, and several CEOs being replaced. We expect the changes in investment strategy to make SOIs more focused on risk factors and more agile to market events – key considerations to be upgraded to **State-Owned Investors 3.0**.

“State-owned investment funds are the new frontier investors, larger in size, influence, and power than the traditional Wall Street of investment banks, asset managers, and hedge funds. Whereas the private sector doesn't have the answers to a growing list of the world's problems, it is the State, working through powerful institutions such as sovereign wealth funds, that has taken a key economic and investment role in the post-Covid world. As they are becoming the 'unicorn-makers' in the VC tech markets, the state-owned investors will substantially shape the global digital economy in the new decade.”



Winston Ma, Former MD of **CIC** and author of *The Hunt for Tech Unicorns*



Appendix 1: Ranking of SWFs



#	SWF	Est	Country	AuM (\$b)
1	NBIM	1997	NO	1,332
2	CIC	2007	CN	1,222
3	ADIA	1967	AE	829
4	SAFE IC	1997	CN	817
5	GIC	1981	SG	744
6	KIA	1953	KW	693
7	HKMA EF	1993	HK	520
8	PIF	1971	SA	480
9	NSSF	2000	CN	452
10	QIA	2005	QA	366
11	ICD	2006	AE	302
12	Temasek	1974	SG	283
13	Mubadala	1984	AE	243
14	KIC	2005	KR	201
15	NWF	2008	RU	185
16	Future Fund	2006	AU	178
17	ADQ	2018	AE	110
18	NDF	2017	SA	93
19	EIA	2007	AE	86
20	TCorp	1983	AU	82
21	Alaska PFC	1976	US	81
22	PNB	1978	MY	80
23	QIC	1991	AU	69
24	Samruk Kazyna	2008	KZ	69
25	LIA	2006	LY	67
26	NBK	2000	KZ	57
27	VFMC	1994	AU	53
28	Bpifrance	2008	FR	51
29	BIA	1983	BN	49
30	Texas PSF	1854	US	47
31	SOFAZ	1999	AZ	44
32	NZ Super Fund	2001	NZ	41
33	FTF	2006	NO	40
34	TVF	2017	TR	39
35	Dubai Holding	2004	AE	35
36	New Mexico SIC	1958	US	35
37	OIA	2020	OM	32
38	Khazanah	1993	MY	31
39	RDIF	2011	RU	28
40	WVIMB	1997	US	25
41	WYO	1974	US	25
42	UFRD	2006	UZ	23
43	KENFO	2017	DE	22
44	AIH	2021	AZ	22
45	NDFI	2011	IR	21
46	TL PF	2005	TL	19
47	Chile ESSF-PRF	2006	CL	19
48	ND RIO	1989	US	19
49	Mumtalakat	2006	BH	18
50	ISIF	2014	IE	16

#	SWF	Est	Country	AuM (\$b)
51	Dubai World	2005	AE	15
52	SK CIC	1947	CA	14
53	INA	2020	ID	12
54	TSFE	2018	EG	11
55	Texas ESF	2014	US	10
56	CADF	2007	CN	10
57	Baiterek	2014	KZ	9
58	HCAP	2016	GR	7
59	Solidium	1991	FI	7
60	FRC	1962	MC	6
61	T&T HSF	2000	TT	6
62	CDP Equity	2011	IT	5
63	NIIF	2015	IN	4
64	BBB IP	2014	UK	4
65	Pula Fund	1994	BW	4
66	FAE+FAEP	1995	CO	4
67	EMGL	2007	MN	4
68	KWAN / NTF	1988	MY	4
69	NSIA	2011	NG	4
70	Alabama TF	1985	US	3
71	CDC TN	2011	TN	3
72	FSDEA	2012	AO	3
73	SFPI-FPIM	2006	BE	2
74	BIDF	2021	BD	2
75	RAKEZ	2005	AE	2
76	SCIC	2006	VN	2
77	SAM	2008	AE	2
78	FGIS	2012	GA	2
79	Ithmar Capital	2011	MA	2
80	FMPED-FEIP	2000	MX	2
81	FAP	2012	PA	1
82	COFIDES	1988	ES	1
83	ANIF	2019	AM	1
84	FHRIF	2012	AU	1
85	Palestine	2003	PS	1
86	GPF	2011	GH	1
87	NIF	2019	CY	1
88	RERF	1956	KI	1
89	SFT	2008	TM	1
90	FINPRO	2015	BO	0.4
91	Agaciro Fund	2012	RW	0.2
92	FSD	2020	DJ	0.2
93	Nauru	2015	NR	0.1
94	FSF	2010	MN	0.1
95	FSGIP	2021	CV	0.1
96	NRF	2019	GY	0.1
97	FHF	2016	MN	0.1
98	FONSIS	2012	SN	0.1
99	FEF	1999	PE	0.001
100	NSF	2000	TW	0.0001

Other SWFs	61	34
Third-party capital	-	- 74
Total SWFs	161	10,536

Source: Global SWF Ranking <https://globalswf.com/ranking>
 Top 100 SWFs based on size, investments & market interest
 AuM refers to latest figure if available, estimation otherwise



Ranking of PPFs



#	PPF	Est	Country	AuM (\$b)
1	GPIF	2006	JP	1,747
2	NPS	1988	KR	776
3	FRTIB	1986	US	735
4	APG	1922	NL	727
5	CalPERS	1932	US	490
6	CPP	1997	CA	427
7	CPF	1955	SG	361
8	PGGM	1969	NL	330
9	CalSTRS	1913	US	322
10	CDPQ	1965	CA	315
11	AP Fonden	2001	SE	306
12	NYS CRF	1983	US	268
13	NYC Compt	1920	US	267
14	GOSI+PPA	2022	SA	250
15	SBA Florida	1943	US	247
16	KWSP	1951	MY	237
17	MN	2014	NL	207
18	Texas TRS	1937	US	202
19	BLF	2014	TW	198
20	OTPP	1917	CA	184
21	WSIB	2005	US	181
22	CDC	1816	FR	181
23	AustralianSuper	2006	AU	176
24	EPFO	1952	IN	165
25	PSP	1999	CA	162
26	BCI	1999	CA	158
27	PIC	2015	ZA	157
28	ART	2022	AU	152
29	MPFA	1995	HK	150
30	ATP Groep	1964	DK	148
31	PIFSS-Wafra	1955	KW	134
32	MSBI	1981	US	129
33	NYS TRS	1913	US	122
34	NCRS	1941	US	121
35	SWIB	1951	US	120
36	BVK	1995	DE	120
37	Aware Super	2020	AU	112
38	PFA	1967	JP	105
39	AIMCo	1976	CA	103
40	Amitim	2011	IL	100
41	KLP	1949	NO	100
42	NJ Dol	1950	US	99
43	Chikyoren	1984	JP	96
44	OMERS	1962	CA	92
45	Ohio PERS	1935	US	91
46	Oregon PERF	1946	US	82
47	HOOPP	1960	CA	82
48	Ohio STF	1919	US	81
49	Virginia RS	1942	US	80
50	MassPRIM	1983	US	79

#	PPF	Est	Country	AuM (\$b)
51	Georgia TRS	1943	US	79
52	KEVA	1988	FI	75
53	UniSuper	2000	AU	75
54	NPST	2008	IN	73
55	NLGPS	2019	UK	73
56	Kokkyoren	2017	JP	71
57	SSO	1990	TH	62
58	Penn PSERS	1917	US	59
59	LACERA	1937	US	58
60	IMCO	2016	CA	57
61	MI PSERS	1942	US	56
62	Illinois STRS	1939	US	54
63	Maryland SRA	1941	US	54
64	Tennessee CRS	1972	US	52
65	Pooled Super	2021	AU	52
66	PensionDanmark	1993	DK	50
67	Colorado PERA	1931	US	49
68	PUBLICA	2001	CH	48
69	HESTA	1999	AU	48
70	FGS	2008	AR	48
71	PREVI	1904	BR	46
72	Compenswiss	1948	CH	46
73	JMAAPST	1971	JP	45
74	CBUS	1984	AU	43
75	PKA	1954	DK	43
76	Aramco PF	2017	SA	43
77	BVK Zurich	1926	CH	40
78	SamPension	1999	DK	40
79	BVV	1909	DE	37
80	KWAP	2007	MY	37
81	ESSS	1977	ID	35
82	REST	1988	AU	34
83	SERAMA	1959	JP	33
84	FRR	2001	FR	32
85	KTCU	1971	KR	31
86	UAPF	2013	KZ	31
87	CSC	1976	AU	29
88	WPP	2017	UK	29
89	VER	1990	FI	27
90	PMAC	1954	JP	26
91	CDG	1959	MA	25
92	ADPF	2000	AE	25
93	Petros	1970	BR	22
94	Taiwan PSPF	1943	TW	22
95	GSIS	1936	PH	22
96	FDC	2004	LU	20
97	OPTrust	1995	CA	18
98	Bouwinvest	2002	NL	17
99	GPF	1997	TH	14
100	POBA	1952	KR	11

Other PPFs * 175 6,960

Total PPFs 275 21,350

* Others include US Federal funds OASDI, MRF and CSRDF which are very large but not comparable to the rest of PPFs

Source: Global SWF Ranking <https://globalswf.com/ranking>
Top 100 PPFs based on size, investments & market interest
AuM refers to latest figure if available, estimation otherwise



Appendix 2: Methodology



Global SWF studies 436 State-Owned Investors (“SOIs”), including Sovereign Wealth Funds (“SWFs”) and Public Pension Funds (“PPFs”), which jointly manage US\$ 32 trillion in assets. SOIs are no longer defined simply as government-owned vehicles investing their capital overseas. Today the industry is highly complex, with mixed forms of legal structure, ownership and portfolios, and we define four major groups of SOIs:

- **SWF-Stabilization Funds:** this is the smallest group and yet the most intuitive. They are defined as “rainy-day funds” because they are established as a buffer mechanism that can cover fiscal deficits in times of uncertainty. For this reason, they are usually highly liquid funds that allocate on average 90% of their capital into stocks and bonds. Examples include Azerbaijan’s **SOFAZ**, Botswana’s **Pula Fund** and Chile’s **ESSF**.
- **SWF-Savings Funds:** also known as future generations funds, they face less pressure for short-term liquidity and can afford to invest more aggressively. They allocate an average of 22% to private markets, and with a combined AuM of US\$ 5+ trillion, they represent some of the largest investors in real estate, infrastructure and private equity. Examples include Abu Dhabi’s **ADIA**, Norway’s **NBIM** and Singapore’s **GIC**.
- **SWF-Strategic Funds:** these have been the most popular choice among governments in the past decade, as they combine a financial goal with an economic mission, contributing to the domestic development. For this reason, some of them are set up without much “wealth” and seek to catalyze foreign capital and fundraise from other SOIs instead. Examples include Ireland’s **ISIF**, Malaysia’s **Khazanah** and Russia’s **RDIF**.
- **Public Pension Funds (PPFs):** PPFs have gained in significance and activity to such an extent that they are today similar in behavior to SWFs, despite the obvious differences in liability profile. Both groups keep similar strategies and asset allocations and can be seen competing for the same stakes in public auctions and private placements around the world. Examples include Canada’s **CPP**, Japan’s **GPIF** and Netherlands’ **APG**.

We are flexible in our definitions, which are driven by market interest. If we are too academic, e.g., using IMF’s definition of SWF, we risk leaving out some of the funds that we deem highly interesting, acquisitive and comparable to other SOIs, including India’s **NIIF**, Morocco’s **Ithmar Capital** or Singapore’s **Temasek**.

We also include certain Central Banks (“CBs”), for the portion that is investable, including China’s **SAFE** (Investment Company), Hong Kong’s **HKMA** (Exchange Fund), and Kazakhstan’s **NBK** (including NOF and NIC). We stopped covering **SAMA** when it changed name to SCB and adopted a less “SWF-like” strategy.

We must bear in mind that certain funds are asset managers that invest on behalf of asset owners, e.g., Australia’s **TCorp** manages a SWF (**NGF**) and several superannuation pools; Canada’s **AIMCo** manages a SWF (**AHSTF**) and different pension plans, and Netherlands’ **APG** invests on behalf of **ABP** and other pools.

Out of the 436 SOIs, we define a **Top 200** list, which can be found in Appendix 1 and allows us to focus our efforts on the 100 most active SWFs and the 100 most active PPFs. This sample serves us as a fair representation of the heterogeneous SOI universe. We have doubled our coverage in less than a year.

Methodology:

All the data is proprietary and comes from public sources or estimated based on our knowledge and insights. Of the **Top 200**, only 10 funds do not report their AuM, including Abu Dhabi’s **ADIA**, Qatar’s **QIA** and Singapore’s **GIC**, and we maintain internal models to estimate the size based on allocation and investments.

As a policy, we do not like “n.a.” and always estimate figures based on our experience, if undeclared. We maintain a dynamic list of the funds’ allocations as well as an exhaustive list of investments and divestments – a proprietary data set that goes back to the birth of the funds. Unless indicated otherwise, our investment data refers to private markets and to certain public market activities that are sizable and long-term in nature.

Lastly, we are contemporaneous in our approach and report information the minute it happens. The present report, released on January 1, 2022, and collecting activity up to December 31, 2021, serves as a proof.



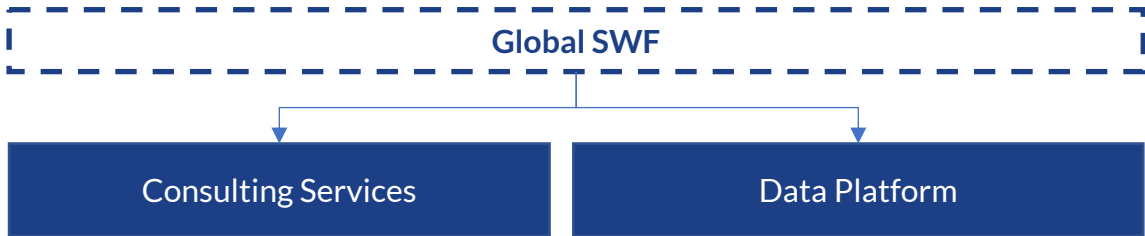
Appendix 3: About Us



Global SWF is a financial boutique that was launched in July 2018 to address a perceived lack of thorough coverage of State-Owned Investors (SOIs), including SWFs and PPFs, and to promote a better understanding of, and connectivity into and between global investors. The company leverages unique insights and connections built over the years and functions as a one-stop shop for some of the most common SOI-related services, including:

- **Consulting Services**, helping governments establish or reformulate their investment and strategic funds.
- **Data Services**, running the the most comprehensive platform on SOIs' strategies, portfolios and executives.

We firmly believe in the global aspect of our business and have teams, advisors and partners in New York, Boston, Miami, London, Birmingham, Frankfurt, Lagos, Abu Dhabi, Dubai, Singapore, Hong Kong, Beijing, and Melbourne.



Global SWF Team:

