Sovereign Wealth Funds’ Long-Term Perspective and Strategy in the Post Covid-19 Period

Долгосрочная перспектива и стратегия суверенных фондов в период после коронавируса-19

July 5, 2021, Monday, at 14:30 (Paris time)

Понедельник, 5 июля 2021 г., 14:30. (Париж)

Speaker

Dr. Renaud BOUCHARD

Associate researcher

CEMI (Centre d’Etude des Modes d’Industrialisation - Paris, France)

Суверенные фонды Глобальные тенденции пандемии Долгосрочная перспектива восстановления после коронавируса COVID-19

Оратор

Д-р Рено БУШАР

доктор экономических наук (Ph. D)

Ассоциированный исследователь CEMI

(Центр изучения режимов индустриализации - Париж, Франция)

Introduction

Introduction

Sovereign Wealth Funds (SWFs)

The critical concept of Sovereign Wealth Funds is now more than ever a potential for economic, strategic and financial transformation on a global scale.

Sovereign wealth funds are increasingly assimilated to the capitalist logic of economic development, financial power and sovereignty as part of a new geopolitics. Sovereign wealth funds have gradually replaced geopolitics with geo-economics, geostrategy, and geofinance, because the power of state sovereignty - parallel or in addition to its diplomatic, strategic and military aspect -, is entirely driven by seeking, securing, and maintaining by all means a competitive position in strategic financial markets as well as in investment zones and economic corridors.Beyond development economics - today characterized by the presence of sovereign wealth funds-, the goal now is to connect the vast Eurasian continent in order to put Russia and China until now on the periphery of Europe, but also the Middle East, Africa, Latin America and Asia at the center of a new constellation. Sovereign wealth funds, new Silk Roads and Eurasian integration offer Russia and China the opportunity to tackle this "over- dependence" on the West by using the tool of sovereign wealth funds to reinforce their influence in Europe, China, Africa and Latin America, while at the same time more and more countries are using this tool to accelerate their economic development or use it to step in in the new technological, scientific, economic and financial fields of the twenty-first century.

The rise of sovereign wealth funds is changing the strategic landscape at the global and regional levels. The way in which States define and respond to the new challenges posed by this new situation that combines extraction, transformation, use and investment of wealth, whether or not derived from the economic and financial transformation of natural resources, will be crucial for the international relations of the coming decades.

Introduction

This presentation builds on the existing realistic and rationalistic concepts of balancing, cartel movement, commitment issues and asymmetric information to develop explanations of how States with sovereign wealth funds act in a geopolitical context and thus impact the global economy.

More specifically, we would like to explore the role that different types of uncertainty play in situations of unstable geopolitical equilibrium. Special attention is paid to the nature of the emerging States with sovereign wealth funds, the balance of power and their impact on the global economy. These concepts are analyzed and illustrated in the context of Sovereign Wealth Funds' Long-Term Perspective and Strategy in the Post Covid-19 Period.

While undertaking a parallel assessment of geopolitical interactions with other actors, countries, strategies and significant trends, we show that sovereign wealth funds are the ultimate tool for determining new patterns of temporal sequencing and new transformations or economic transformations in the light of geo- economic issues, geofinancial and geopolitical forecasts of the 21st century with the new Post Covid-19 Period.

Keywords: Sovereign Wealth Funds, Geopolitics, Geoeconomy, Geofinance, Development, Assets, Investments, Globalization, Strategy, Post Covid-19 Period, Sovereign Wealth Funds' Long-Term Perspective and Strategy in the Post Covid-19 Period.

Суверенные фонды (SWF)

Вступление

Важнейшая концепция суверенных фондов сейчас, как никогда ранее, представляет собой потенциал для экономических, стратегических и финансовых преобразований в глобальном масштабе. Суверенные фонды все более и более ассимилируются с капиталистической логикой экономического развития, финансовой мощи и суверенитета как части новой геополитики. Суверенные фонды постепенно заменили геополитику геоэкономикой, геостратегией и геофинансированием, потому что сила государственного суверенитета - параллельно или в дополнение к его дипломатическому, стратегическому и военному аспекту - полностью определяется поиском, обеспечением и поддержанием всеми означает конкурентную позицию на стратегических финансовых рынках, а также в инвестиционных зонах и экономических коридорах.

Помимо экономики развития, которая сегодня характеризуется наличием суверенных фондов, цель теперь состоит в том, чтобы соединить обширный евразийский континент, чтобы поставить Россию и Китай до сих пор на периферии Европы, но также на Ближнем Востоке, в Африке, Латинской Америке и Азии в центре нового созвездия. Суверенные фонды, новый Шелковый путь и евразийская интеграция предлагают России и Китаю возможность справиться с этой «чрезмерной зависимостью» от Запада, используя инструмент суверенных фондов для усиления своего влияния в Европе, Китае, Африке и Латинской Америке, в то время как в то же время все больше и больше стран используют этот инструмент для ускорения своего экономического развития или используют его для выхода в новые технологические, научные, экономические и финансовые области двадцать первого века. стратегический ландшафт на глобальном и региональном уровнях.

Суверенные фонды (SWF)
Вступление

То, как государства определяют и реагируют на новые вызовы, создаваемые этой новой ситуацией, которая сочетает в себе добычу, преобразование, использование и инвестирование богатства, независимо от того, получено ли оно в результате экономической и финансовой трансформации природных ресурсов, будет иметь решающее значение для международных отношений.

ближайших десятилетий. Эта презентация основана на существующих реалистичных и рационалистических концепциях балансирования, движения картелей, проблем с обязательствами и асимметричной информации для разработки объяснений того, как государства с суверенными фондами действуют в геополитическом контексте и, таким образом, влияют на глобальную экономику.

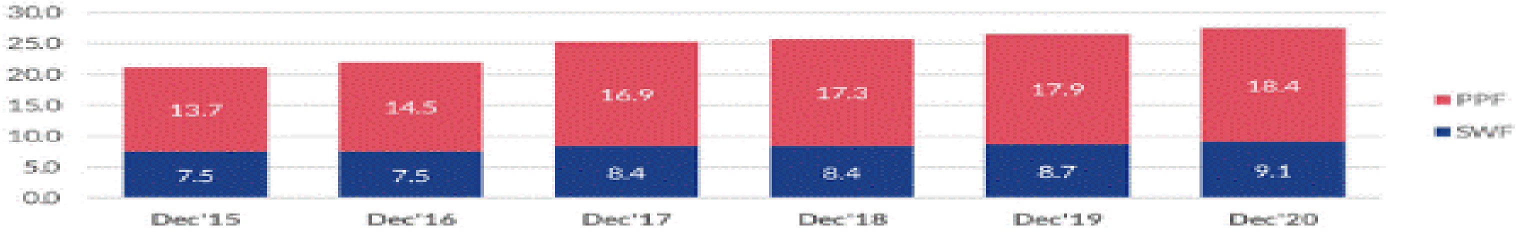
В частности, мы хотели бы изучить роль, которую различные типы неопределенности играют в ситуациях нестабильного геополитического равновесия. Особое внимание уделяется характеру развивающихся государств с суверенными фондами, соотношению сил и их влиянию на мировую экономику. Эти концепции анализируются и иллюстрируются в контексте долгосрочной перспективы и стратегии государственных фондов в период после коронавируса-19.

Проводя параллельную оценку геополитических взаимодействий с другими участниками, странами, стратегиями и важными тенденциями, мы показываем, что фонды национального являются основным инструментом для определения новых моделей временной последовательности и новых преобразований или экономических преобразований в свете геоэкономических проблем. , геофинансовые и геополитические прогнозы 21 века с учетом нового периода после коронавируса.

Ключевые слова: суверенные фонды, геополитика, геоэкономика, геофинансы, развитие, активы, инвестиции, глобализация, стратегия, период после коронавируса, долгосрочная перспектива и стратегия суверенных фондов в период после коронавируса.

The year 2020 will always be remembered for the COVID-19 outbreak and for resulting market uncertainty – as well as the largest disconnect between economic reality and financial markets in history. While the world lost millions of jobs with an estimated -4.4% wiped off GDP (*IMF*), the markets closed with a +10.2% gain in bonds (measured by *S&P 500 Bond*) and an +13.1% gain in stocks (measured by *S&P Global 1200*). And given that State-Owned Investors continue to hold on average three quarters of their portfolios in liquid assets, this has translated into a net growth of the industry size. In other words, Sovereign Wealth Funds (SWFs) and Public Pension Funds (PPFs) ended 2020 with an all-time high AuM of **US$ 9.1 trillion** and **US$ 18.4 trillion**, respectively, i.e., a 21% (SWFs) and a 34% (PPFs) growth in the past six years, since the 2015 oil crisis.

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



It was also the year in which the evolution and complexity of the industry has become most evident. On the one hand, SWFs have a variety of objectives, which determine their liquidity and hierarchy in terms of responding to government fiscal deficits (*see page 34*). In fact, the year saw several withdrawals from 26 funds across six continents, for a combined **US$ 162 billion**. On the other hand, there is a rising trend among countries to include a development function and domestic investments as part of their mandate. The two funds established in 2020 (Fonds Souverain de Djibouti, FSD and Indonesia's Nusantara Investment Authority, NIA) have been seeded by their governments and are expected to catalyze foreign capital into their respective economies. Other funds opted to issue new bonds that would alleviate their countries' debt levels (*see page 35*).

Figure 2. 2020 Quarterly Tracker (US$ trillion)

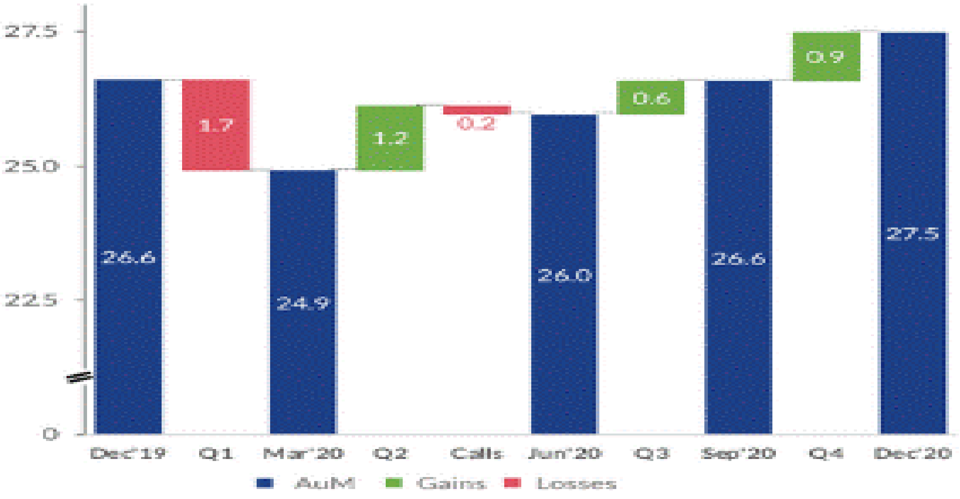


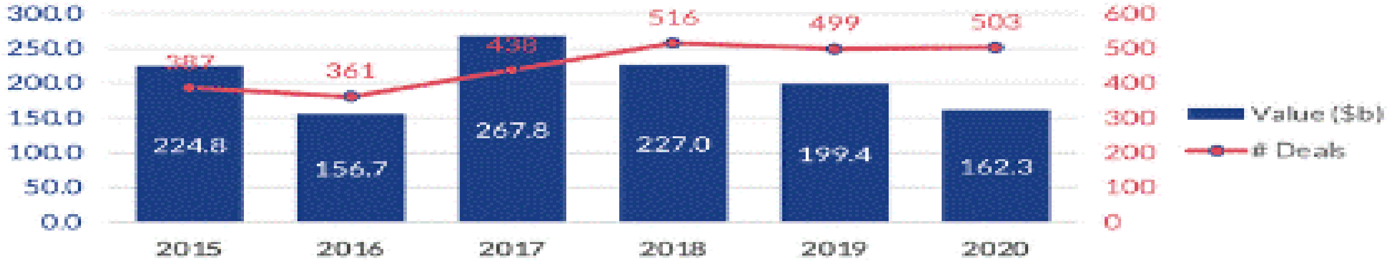
Table 1. Capital Calls to SOIs during 2020

Country	Fund	AuM $b	Call $b	% AuM
Canada	CDPQ*	244	-2.8	1%
USA	ESF	10	-4.6	46%
USA	NMSIC	27	-0.1	0%
Mexico	FEIP	6	-0.9	14%
Panama	FAP	1.4	-0.1	6%
T&T	HSF	6.3	-1.5	24%
Colombia	FAEP	12	-12	100%
Peru	FEF	5.5	-5.5	100%
Chile	ESSF	11	-2	19%
Norway	GPFG-NBIM	1,076	-19	3%
Norway	GPFN-Folk.*	23	-4.7	21%
Ireland	ISIF*	12	-2.2	19%
Nigeria	NSIA-SF	0.4	-0.2	43%
Ghana	GPF-GSF	0.3	-0.2	60%
Angola	FSDEA	4.6	-1.5	33%
Botswana	Pula Fund	4.5	-0.2	1%
Kuwait	KIA**	559	-25	4%
Bahrain	FGRF	0.9	-0.5	49%
UAE	ADIA**	726	-24	3%
KSA	SAMA*	448	-13	3%
Iran	NDFI	68	-1.1	2%
Azerbaijan	SOFAZ	43	-2.7	6%
Kazakhstan	NBK-NOF	58	-1.4	2%
Singapore	GIC	488	-36	7%
Taiwan	NTSF*	17	-0.03	0%
Timor-Leste	PF	18	-0.3	1%
Total Calls	**26**		-162	**18%**

* *Via Pandemic Bond, Fund or Provision* ** *Fitch Ratings' estimates*

The capital invested by SOIs contracted significantly during 2020. During the peak of the pandemic, deals were negligible due to logistical problems – investment executives were not able to get their committees to sign off on their proposed acquisitions without a physical meeting. Later in the year, it was more a matter of caution, especially among those SWFs that could still face capital calls to cover fiscal deficits. Overall, and compared to 2019 volumes, investments by SWFs dropped by 33%, to **US$ 83.7 billion** in 280 transactions; while capital deployed by PPFs slightly increased in both value and volume, up to **US$ 78.6 billion** in 223 deals.

Figure 3. SOIs Investment Activity



But as we learned in 2008, the motto of SWFs could be "*never waste a good crisis*". If during the global financial crisis, it was the savings funds (such as ADIA, CIC, GIC or QIA) who acted swiftly and bought multi-billion stakes in distressed financial institutions, during the COVID-19 crisis it has been the development funds (such as Mubadala, PIF or Temasek) who have been able to react more quickly and acquire strategic assets. Among PPFs, the Canadian Funds continue to stand out, with CPP and CDPQ among the Top 10 spenders.

There was a lot of tilting, recalibration and thinking behind strategic asset allocation. While 2018 was a bad year and 2019 was a good year across all asset classes, 2020 favored those investors that maintained higher levels of liquidity in their balance sheets. However, not all the funds value their private holdings in the same manner and timing, and some of them may have been able to wait for calmer waters until they recognize – or do not ever have to recognize – some of the underlying losses in those non-listed portfolios.

Table 2. Return of asset classes in 2018, 2019, 2020

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

Certain asset classes were especially sensitive to the recession and deals in real assets, including properties and infrastructure, saw the biggest declines. Among SWFs, the number of deals in this space represented only 29% of the total, as compared to 38% in 2019. Furthermore, we saw a change in pattern, with SOIs being less attracted to fancy hotel brands and to core real estate in major cities, and devoted more to logistics, data centers, warehouses, senior facilities and student housing. See *page 13* for a detailed analysis.

Lastly, the industries that gained more attention and capital were those touched by the magic wand of technology. Energy and Natural Resources, Financial Services and Retail and Consumer saw fewer acquisitions, while Industrial Products, Healthcare, and Telecommunications and Media were significantly up. Within Technology, we saw a pivoting from fintech and e-commerce, into IT and, not surprisingly, biotech. We analyze this trend in detail on *page 28*. These changes in asset classes and industries meant that SOIs scaled up their holdings in developed markets despite the interest in China and especially India (*pages 24-27*). North America attracted 37% of the capital (vs 27% in 2019), while Emerging Markets only received 29% (vs 40% in 2019).

Comparisons between the Global Financial Crisis (GFC) and the COVID-19 pandemic show the changes that the industry has gone through in the past 12 years. As highlighted in *Section 4*, between 2008 to 2020, SOIs' assets doubled from US$ 13.8 trillion to US$ 27.5 trillion and the average allocation to alternatives changed from 12% to 24% – representing a quadrupling of SOI capital held in real estate, infrastructure, private equity and hedge funds between 2008 and 2020. Furthermore, SOIs can no longer be referred to as "dumb money" and are now seasoned investors that rigorously examine strategy, allocation and risk.

In no fund is that evolution more evident than in Saudi Arabia's Public Investment Fund. In 2008, the fund was mostly a domestic holding company that supported Tadawul-listed equities and provided financing to projects where the private sector could not. Today, the Saudi fund is one of the world's most outstanding SWFs that has pursued uniquely bold investments, including US$ 45 billion in Softbank Vision Fund I and US$ 20 billion in Blackstone Infrastructure Fund. With its rapid transformation and its rise in the ranking of both the largest and the most active SOIs, we recognize PIF as the 2020 Fund of the Year. In *Section 5*, we offer the award and have a perceptive conversation with Yazeed Al-Humied, PIF's Head of Local Holdings Investments.

The SOI sector continues to be a big, global, strategic board game where geopolitics still play a big part. In the past four years, the US Government has been more welcoming towards Middle Eastern capital and more aggressive at rejecting Chinese funds, via CFIUS. The attitude of the new administration towards such FDI is still uncertain, and together with Brexit, may determine what the industry looks like in the next few years. In *Section 7*, we look at the rise of China and India as countries of interest among SOIs. The US$ 11 billion received by Reliance Group companies in 2020 alone is certainly a good testament to the shifting dynamic in Asia.

Analysts agree that the halt in economic growth caused by COVID-19 has been generally good for the environment, and that it has represented a wakeup call in terms of sustainability for companies and investors alike. The *One Planet SWF Group*, set up in 2018 by six SWFs, attracted nine more SWFs in addition to a total of 19 asset managers and private investment firms at the end of November this year. In fact, of the 3,575 signatory members of UNPRI today, over a quarter signed up in 2020. But is membership of such organizations sufficient or is it just another form of *greenwashing*? We assess the Governance, Sustainability and Resilience *actual* efforts of SWFs and PPFs in Section 9, thanks to Global SWF's proprietary GSR Scoreboard.

State-Owned Investors are not only larger and less risk-averse – they are also increasingly sophisticated and complex organizations. And this gets reflected in (i) their mission and mandate, which can be hybrid or dynamic over time; (ii) their capital structure, which is getting increasingly leveraged; (iii) investment focus and balance of domestic vs overseas investments; and (iv) organizational structure, which to this day combines active investment managers with offices everywhere, and passive asset owners with a single HQ. *Section 10* sheds a light on these intricate issues that will keep shaping the industry in the years to come.

We close this unique report in terms of timing, relevance and thoroughness, with some thoughts and projections on how the industry will look like in ten years' time. State-Owned Investors 2030 predicts that the size of the industry will be over US$ 50 trillion by the end of the decade. There will be nine funds with a trillion dollars AuM or more, and three additional funds with two trillion dollars AuM or more: NBIM, PIF and APG. If the Norwegian fund continues growing at the pace expected by the Parliament, it will be they, and not the Saudi fund, who will maintain the crown as the world's largest SWF. In total, we expect the number of SOIs to surpass 500 in 2030. The new SWFs may be created through managing excess (commodities or reserves) or through addressing need (development). The former may be the most significant, if countries such as Germany, Japan and Taiwan, which are poised to have large surpluses in the next few years, decide to establish their own fund.

II- A Reading Grid /Une Grille de Lecture/ Сетка для чтения

Global SWF studies 438 State-Owned Investors ("SOIs"), including Sovereign Wealth Funds ("SWFs") and Public Pension Funds ("PPFs"), which jointly manage well over US$ 27 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 according to their investment behavior:

- 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 and market shocks. For this reason, they are usually highly liquid vehicles that allocate on average 90% of their capital into public 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 long-term. They are therefore more aggressive and allocate an average of 22% to private markets. With an aggregate AUM of over US$ 5 trillion, they represent some of the world's largest investors in real estate, infrastructure and private equity. Examples include Abu Dhabi's ADIA, Norway's NBIM and Singapore's GIC.
- SWF-Development / Strategic Funds: these have represented 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 debt and equity 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 and to Savings Funds in particular, despite the obvious differences in liability profile. Both groups keep alike investment 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 generally flexible in our definitions, which are driven by market interest. If we are too academic and rigorous, e.g., using IMF's definition of SWF, we risk leaving out some of the funds that we deem highly interesting, acquisitive and comparable in behavior to other SOIs, including India's NIIF, Morocco's Ithmar Capital or Singapore's Temasek.

We also include certain Central Banks ("CBs") that are highly acquisitive, for the portion that is investable, including China's SAFE (Investment Company), Hong Kong's HKMA (Exchange Fund), Saudi Arabia's SAMA (Reserves Assets) and Kazakhstan's NBK (including NOF and NIC). During 2021, we plan to analyze CBs on an exhaustive and separate manner.

We have also decided to include less traditional pools of capital, to the extent that they catalyze and manage significant funding from SOIs. These include Japan's SVF1 (which is 60% funded by two Middle Eastern SWFs), and multilaterals-driven IFC AMC and IDB Invest – with the big caveat that the third-party capital is eliminated whenever we do totals.

Lastly, we also consider multilateral development entities such as Dammam-based APICORP, Kuwait-based GIC GSC or Beijing-based AIIB as they are like-minded investors to SOIs. The same goes for the UN's, the WB's and the IMF's pension plans, which may have different stakeholders, but whose investment behavior could be assimilated to single-country PPFs.

We must bear in mind that certain funds are actually "asset managers" that manage capital on behalf of "asset owners", e.g., Australia's VFMC manages ESSSuper and other plans, Netherlands' APG mixes ABP with seven other pension plans, and Canada's AIMCo manages different pension plans (which conform most of its capital), and a SWF, AHSTF.

Out of the 438 SOIs, we define a "Top 100" list, which can be found in Appendix 1 and allows us to focus our efforts on the 70 most active SWFs and the Top 30 most active PPFs. This sample serves us as a fair representation of the heterogenous SOI universe. They are also dynamic lists, which we keep shaping as new funds are established and old funds get depleted.

Methodology:

All the data is proprietary and comes from public, first-hand sources or estimated based on our knowledge and insights. Of the Top 100, only 10 funds do not report their Assets under Management ("AuM"), including Abu Dhabi's ADIA, Qatar's QIA and Singapore's GIC, and we maintain internal models that estimate the total size based on allocation and investments.

As a policy, we do not like "*n.a.*" and estimate numbers based on our years of experience, if undeclared. We maintain a dynamic list of the funds' allocations (asset classes, regions and industries), 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 market transactions and certain public market transactions that are sizable and long-term in nature.

Lastly, we are contemporaneous in our approach and report information to clients the minute it happens. The present report, released on January 1, 2021 and reflecting the activity occurred up to December 31, 2020, serves as a proof.

III- A World of State-Owned-Investors/Мир государственных инвесторов/Un monde d'investisseurs publics

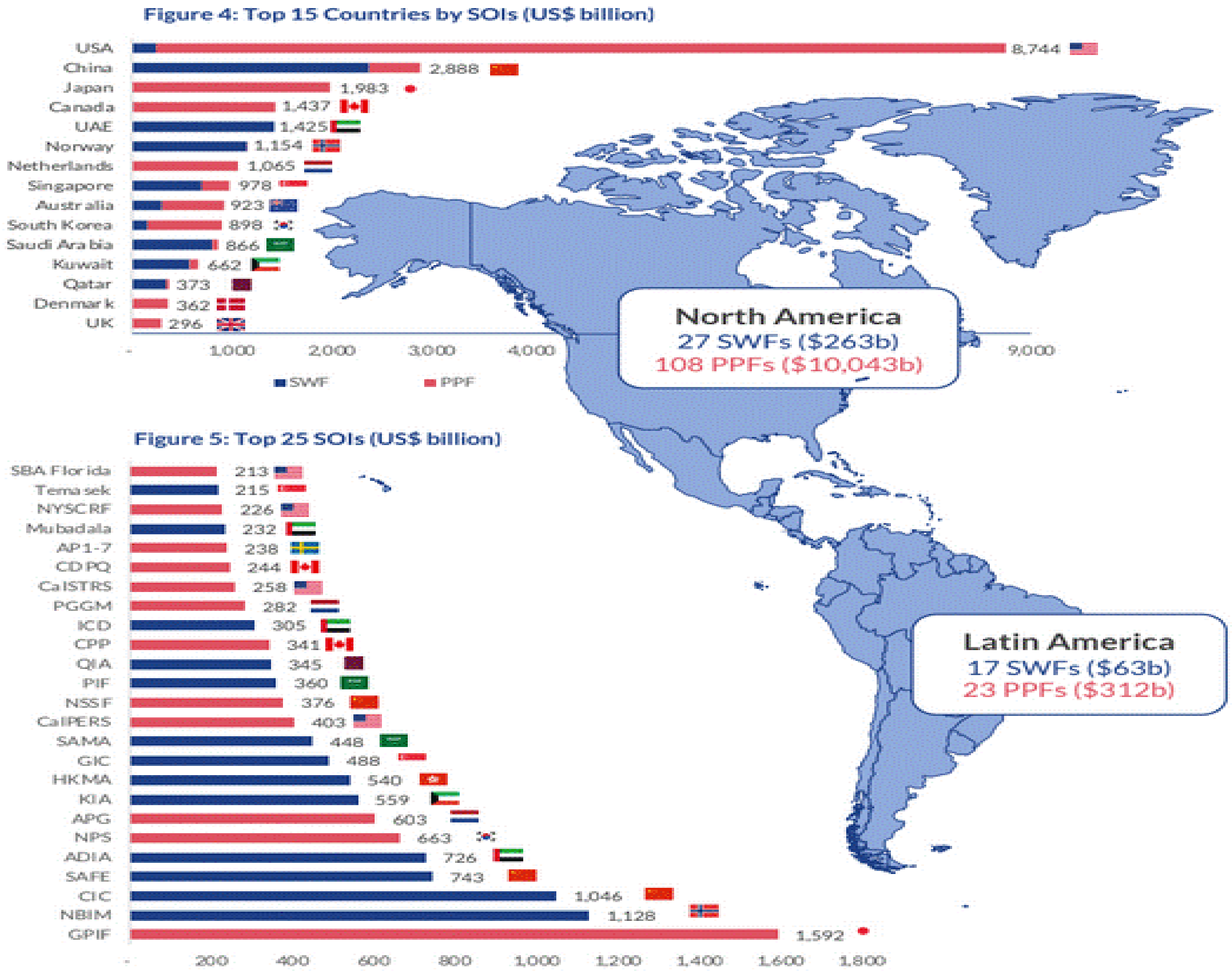


Figure 4: Top 15 Countries by SOIs (US$ billion)
USA 8,744
China 2,888
Japan 1,983
Canada 1,437
UAE 1,425
Norway 1,154
Netherlands 1,065
Singapore 978
Australia 923
South Korea 898
Saudi Arabia 866
Kuwait 662
Qatar 373
Denmark 362
UK 296
- 1,000 2,000 3,000 4,000 9,000
SWF PPF
North America
27 SWFs ($263b)
108 PPFs ($10,043b)
Figure 5: Top 25 SOIs (US$ billion)
SBA Florida 213
Temasek 215
NYSCRF 226
Mubadala 232
AP1-7 238
CDPQ 244
CalSTRS 258
PGGM 282
ICD 305
CPP 341
QIA 345
PIF 360
NSSF 376
CalPERS 403
SAMA 448
GIC 488
HKMA 540
KIA 559
APG 603
NPS 663
ADIA 726
SAFE 743
CIC 1,046
NBIM 1,128
GPIF 1,592
- 200 400 600 800 1,000 1,200 1,400 1,600 1,800
Latin America
17 SWFs ($63b)
23 PPFs ($312b)

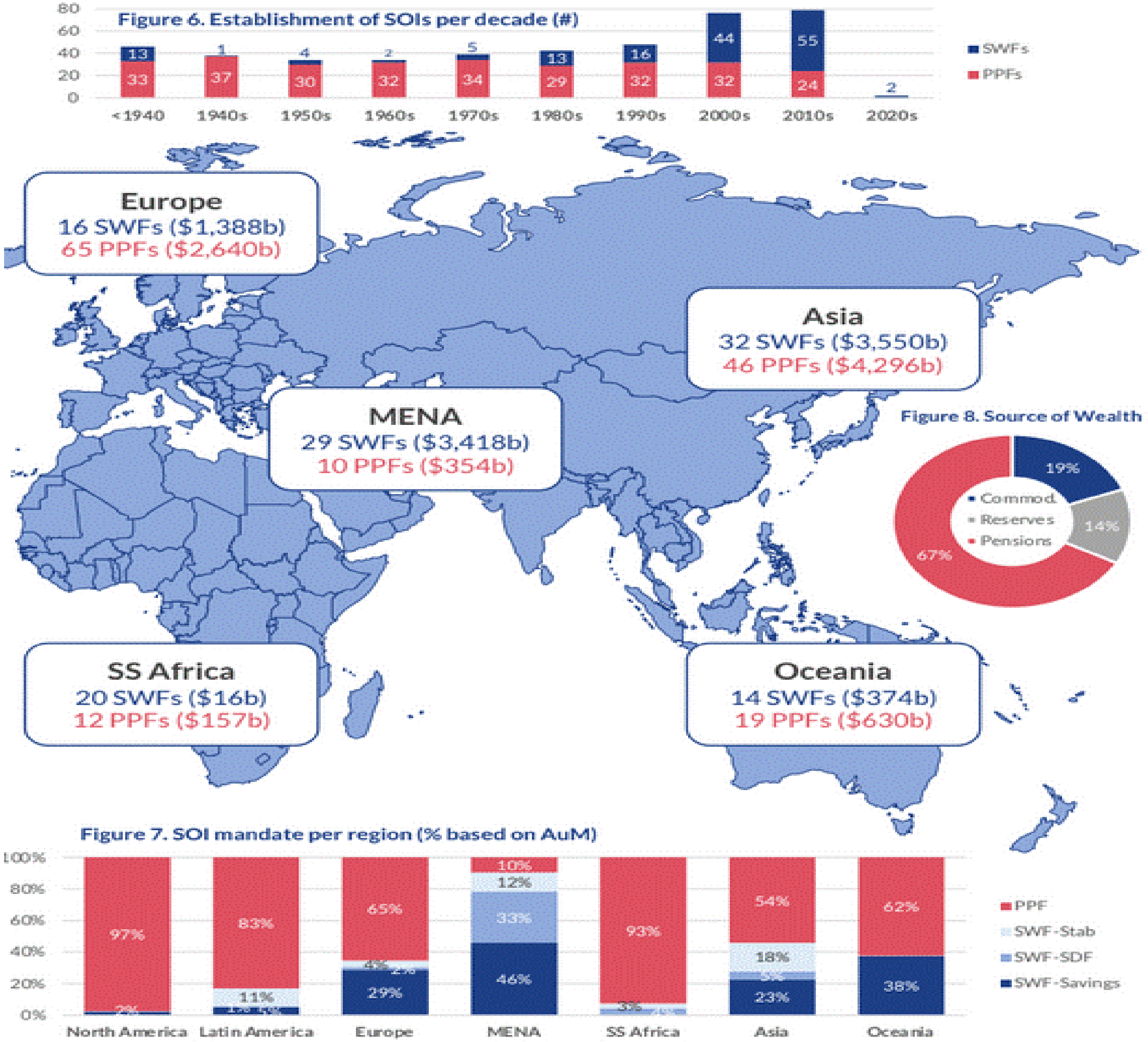


Figure 6. Establishment of SOIs per decade (#)
80
60
40
20
0
<1940
1940s
1950s
1960s
1970s
1980s
1990s
2000s
2010s
2020s
13
33
1
37
4
30
2
32
5
34
13
29
16
32
44
32
55
24
2
SWFs
PPFs
Europe
16 SWFs ($1,388b)
65 PPFs ($2,640b)
Asia
32 SWFs ($3,550b)
46 PPFs ($4,296b)
MENA
29 SWFs ($3,418b)
10 PPFs ($354b)
Figure 8. Source of Wealth
19%
14%
67%
Commod.
Reserves
Pensions
SS Africa
20 SWFs ($16b)
12 PPFs ($157b)
Oceania
14 SWFs ($374b)
19 PPFs ($630b)
Figure 7. SOI mandate per region (% based on AuM)
100%
80%
60%
40%
20%
0%
97%
83%
11%
65%
29%
10%
12%
33%
46%
93%
3%
54%
18%
23%
62%
38%
North America
Latin America
Europe
MENA
SS Africa
Asia
Oceania
PPF
SWF-Stab
SWF-SDF
SWF-Savings

IV- Year 2020 in Review/Bilan de l’Année 2020/Обзор 2020 года

A.From Financial Turmoil…От финансовых потрясений ... De la tourmente financière...

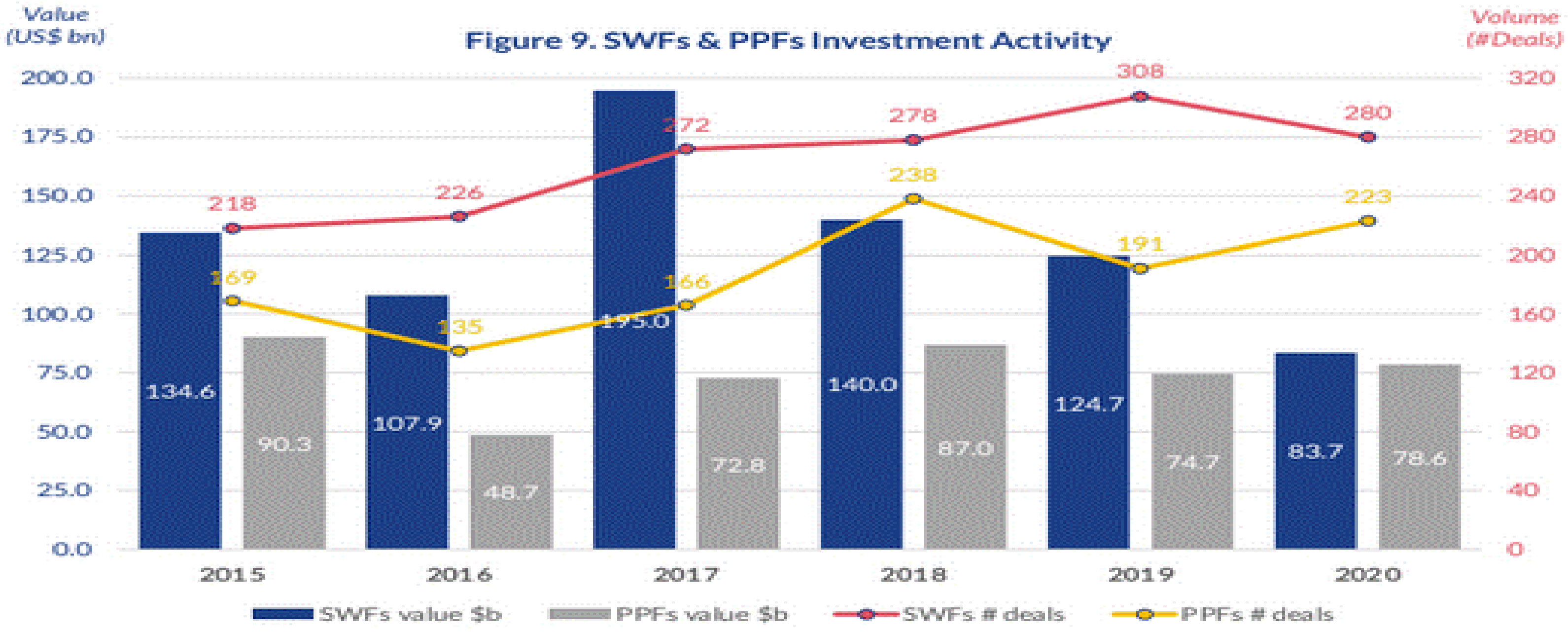
2020 was truly a rollercoaster when it comes to investment activity. The year started very strong, with SOIs deploying US$ 23.4 billion in February alone. The flow of capital came to a sudden stop in March due to the outbreak of the COVID-19 pandemic worldwide. Funds eventually adapted to the new normal and accelerated their activity during Q3 and Q4 but concluded the 12-month period with lower numbers than in 2019. This was especially true for SWFs that had to be extra cautious given the poor economic conditions and potential fiscal deficits at home and as such did not reach US$ 100 billion in invested capital for the first time in seven years.

As outlined in the Executive Summary, stabilization and savings funds including NBIM, GIC and KIA suffered significant withdrawals and were generally more cautious. However, strategic or development funds could act more aggressively, and Mubadala, Temasek and PIF dominated the headlines throughout the year. The Abu Dhabi fund raised US$ 4 billion in bonds and spun off Mubadala Capital, a GP-like subsidiary that has raised US$ 8 billion. The Singaporean investor bailed out Singapore Airlines among other transactions. And the Saudi Arabian fund kept receiving injections and went on a remarkable shopping spree of US public equities.

At the same time, Pension Funds proved to be more resilient (see GSR Scoreboard on *page 32*) and almost caught up with their SWF peers in volume, even if in fewer deals. The Canadian funds continue to lead the pack, investing 14% more than they did in 2019, and teaming up to exert pressure on Sustainability issues. Federal CPP, Quebec's CDPQ and Ontario's OTPP were among the world's largest spenders. PPFs from other countries such as the US (NYSCRF, CalPERS), Netherlands (APG, PGGM), and the behemoths South Korean (NPS) and Japanese (GPIF) funds were especially active too, with a rising interest in alternative assets.

The year saw a continuation of the co-investment trends shown by both groups of asset owners in the past few years: a total of 38 different transactions worth US$ 42.9 billion saw a combination of SWFs, of PPFs, or of both SWFs and PPFs. Multi-billion co-investments such as Reliance Retail (ADIA, GIC, Mubadala, PIF), RSA Insurance Group (CDPQ, CPP, OTPP) and ADNOC's Gas Pipeline Assets (GIC, OTPP) signaled the increasing collaboration between the different group of institutional investors, regardless of their origin.

Figure 9. SWFs & PPFs Investment Activity



B…To the Anticipation of New Risks…/À l'anticipation de nouveaux risques…/К ожиданию новых рисков…

Table 3. Top 10 Co-Investments of at least one SWF and at least one PPF during 2020

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

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

The largest single transaction was carried out by Dubai World, when it bought back on February 17 the 20% of DP World that was listed in Nasdaq Dubai. Interestingly, that very same day, CDPQ converted its stake in Bombardier into shares of Alstom and made a new injection, which translated into a US$ 3.1 billion stake. Other significant deals were ADIA's US$ 2.8 billion investment in Elevator Technology, CPP's US$ 2.8 billion injection in Pattern Energy and Mubadala's contribution to a US$ 12 billion, Apollo-driven lending platform.

Overall, and despite the significant withdrawal and losses suffered in Q1, GIC remained as the most active SOI, deploying US$ 17.7 billion in 65 different deals. The Singaporean fund was closely followed by CPP (US$ 15.0 billion in 33 investments), CDPQ (US$ 12.1 billion in 30 investments), Mubadala (US$ 11.5 billion in 31 investments) and Temasek (US$ 11.3 billion in 52 investments). PIF was also significantly active especially during Q2 and Q3 in buying and selling US listed equities and ETFs, which are not reflected in the figure below.

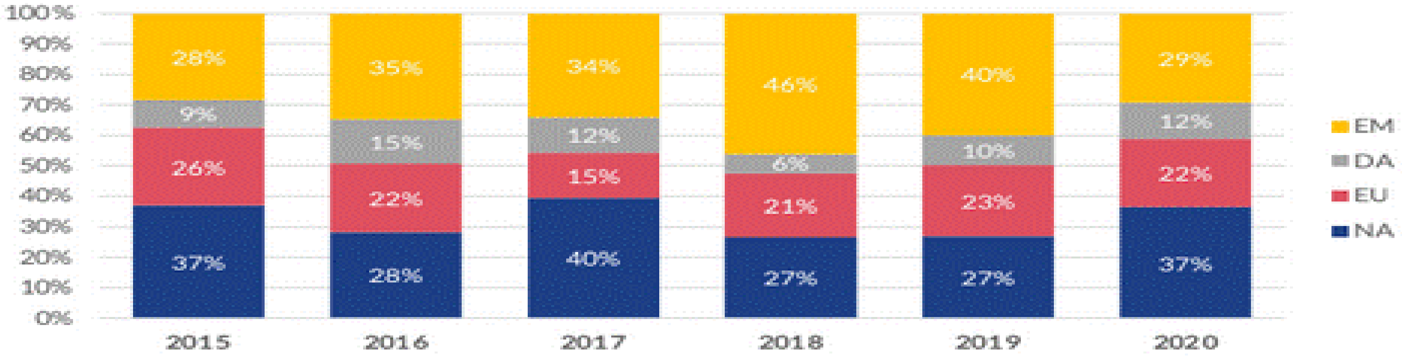
Table 4. Top 10 SOIs by capital deployed* in the past 6 years (US$ billion)

Fund	2015	Fund	2016	Fund	2017	Fund	2018	Fund	2019	Fund	2020
CPP	32.8	↑ GIC	21.2	↑ PIF **	58.9	= PIF **	54.9	↑ GIC	24.0	= GIC	17.7
QIA	19.8	= QIA	18.7	↑ TVF **	33.3	↑ SVF	24.1	↑ CPP	17.0	= CPP	15.0
GIC	14.6	↑ PIF	16.2	↑ SVF	32.3	↑ GIC	18.8	↑ Temasek	13.4	↑ CDPQ	12.1
CDPQ	14.3	↓ CPP	11.7	= CPP	18.6	↑ CDPQ	13.7	↑ QIC	12.2	↑ Mubadala	11.5
SVF	12.4	↓ CDPQ	7.8	↑ CIC	17.4	↓ CPP	13.3	↑ ADIA	12.0	↓ Temasek **	11.3
ADIA	11.7	↑ Temasek	6.5	↓ GIC	17.3	↑ NYSCRF	11.7	↓ SVF	11.8	↑ NYSCRF	11.3
NWF	9.8	↑ CIC	6.2	↓ CDPQ	13.3	↑ Temasek	7.9	↑ PIC	11.5	↑ DW	8.5
Temasek	8.7	↑ QIC	6.0	↑ OMERS	6.3	↑ PIC	6.5	↓ NYSCRF	9.3	↑ NPS	7.9
PSP	8.5	= PSP	4.7	↑ APG	6.2	↑ OTPP	5.9	↓ CDPQ	8.0	↑ PIF	7.9
CIC	8.0	↑ OMERS	4.4	↑ OTPP	5.9	↓ OMERS	5.8	↑ Mubadala	7.6	↓ AIIB	7.7
Others	84.1	Others	53.3	Others	58.4	Others	64.5	Others	72.4	Others	51.5
Total	**224.8**	**Total**	**156.7**	**Total**	**267.8**	**Total**	**227.0**	**Total**	**199.4**	**Total**	**162.3**

** Investment data refers to private market transactions (RE, Infra, PE) and certain public market deals that are sizable and long-term in nature.*
*** Includes significant investments, asset transfers or developments in the country of origin.*

C…Towards New Horizons/Vers de nouveaux horizons/К новым горизонтам

Figure 10. SOIs Investments by Region (US$ bn)

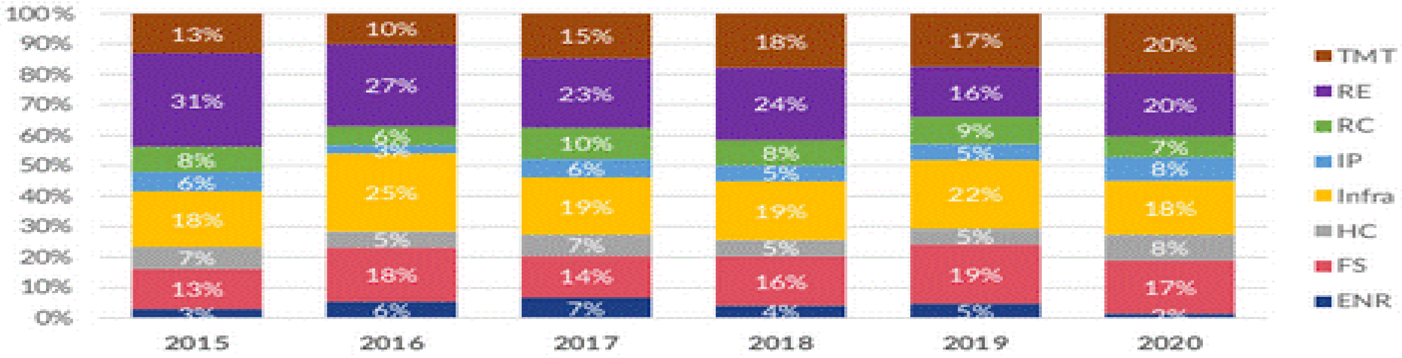


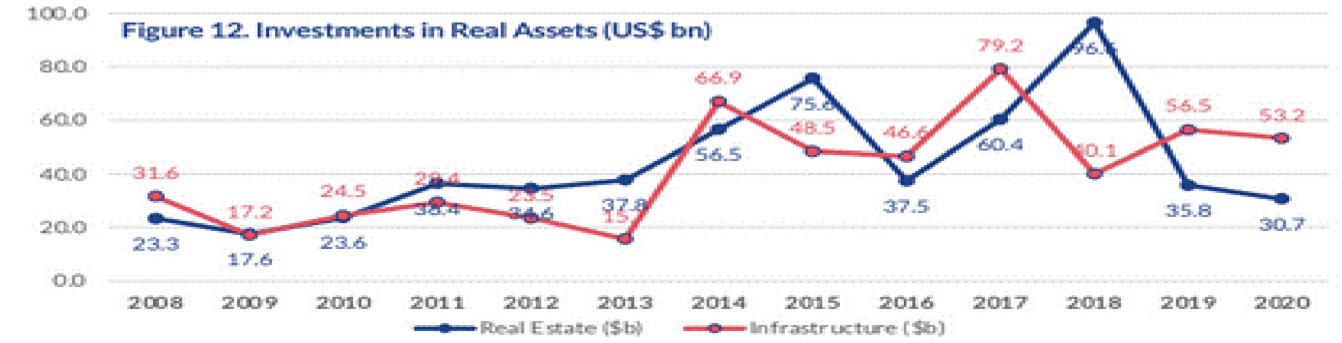
Investors have traditionally sought safer investments during economic crises, and COVID-19 has not been an exception. SOIs have scaled back their focus in Emerging Markets to 2015 levels and increased their exposure to North America and Europe instead. The most popular destination was again the USA with US$ 43.0 billion, followed by India (US$ 16.6 billion, of which 67% was in Reliance companies), the UK (US$ 9.6 billion), the UAE (US$ 7.9 billion) and Canada (US$ 7.6 billion). China fell to #9, with US$ 5.4 billion.

More interestingly perhaps, is the change in sectorial targets. We look here at number of deals, given that investments in real assets are usually chunkier and bias the analysis. With its influence in every corner of the economy, technology has become a major investment target, and institutional investors are not lagging: a fifth of the investments carried out in 2020 were in Technology, Media and Telecommunications (TMT). The other sector that experienced a significant rise was Healthcare (HC), for obvious reasons: a total of 41 investments went into businesses pursuing vaccines and biotech.

Real Estate (RE) and Infrastructure (Infra) are still an important part of the portfolio of SOIs and will continue to be so. However, we have seen a decrease in the number of deals related to real assets, from almost half in 2015, to a little more than a third in 2020. The trend is especially noticeable in property deals, which decreased from 119 (representing US$ 75.6 billion) in 2015 to 103 (representing US$ 30.7 billion) in 2020. Furthermore, we are seeing a change in sub-industry in both asset classes, as we analyze in the following page.

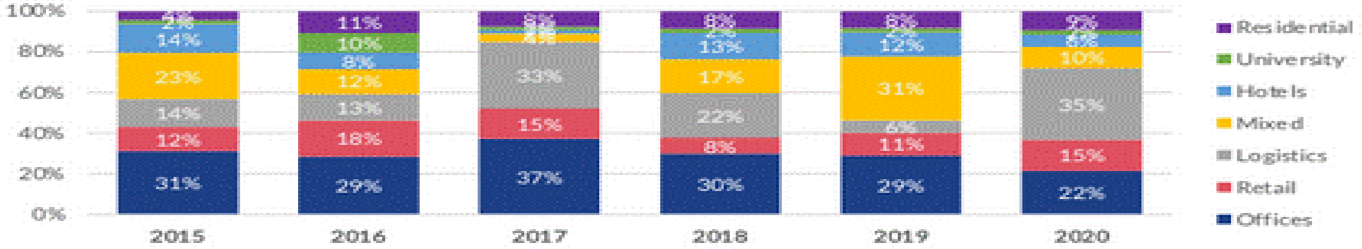
Figure 11. SOIs Investments by Industry (#deals)





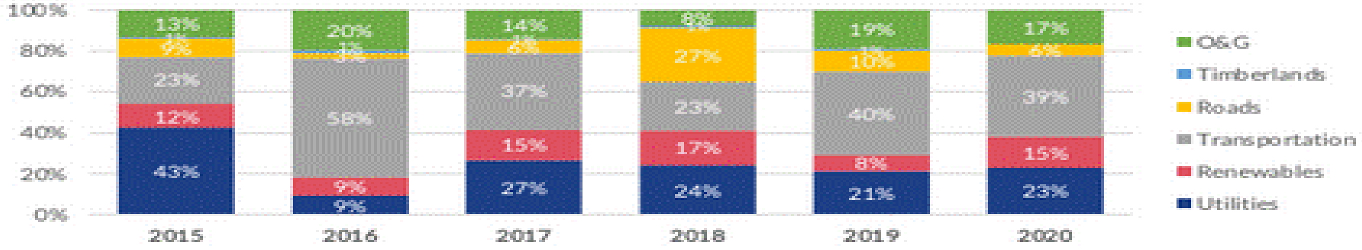
Real Estate: Investment in properties has shrunk considerably, and there has been a noticeable switch into logistics in the past year. Offices have been losing importance since Brexit prompted SWFs to stop spending on prime London real estate, and investment in hotels is half of the total in 2015. In summary, SOIs see that the long-term infrastructural needs are going to be approximately the same but are pivoting towards logistics and away from offices in anticipation of a potential permanent change in working culture.

Figure 13. RE Investments by Segment (Direct Investments Only)



Infrastructure: The analysis of trends in infrastructure is always more challenging as the way funds classify different segments varies significantly. In general, the asset class aligns very well with the long-term horizon, although changes in regulation can pose important risks for SOIs. In the past five years, we notice a slight tilt from O&G to Renewable Energy. Power and Utilities are still a very important part of the outreach, and so is Transportation, including airports and ports, despite the profound effect of COVID-19 in the industry.

Figure 14. Infra Investments by Segment (Direct Investments Only)



V- Lost In Translation : Between The 2008 Global Financial Crisis and the 2020 Health Crisis /Трудности перевода: между глобальным финансовым кризисом 2008 года и кризисом здравоохранения 2020 года

A. No Pain, No Gain / Под лежачий камень вода на течет /On n’a rien sans rien

In the 12 years since the Global Financial Crisis (GFC), State-Owned Investors, and Sovereign Wealth Funds in particular, have experienced a meteoric development. The industry has grown in size and sophistication and is now better prepared to face the new economic crisis and market shock. COVID-19 has affected funds very differently and illustrated the heterogeneity of SWFs in terms of mandates, capital structures, investment strategies and organizational set-ups (*see pages 34 to 37*).

In 2008, the SWF industry was still in its early days and comprised 90 investment vehicles managing US$ 4.0 trillion in an independent manner. Governance was a new concept, triggered by the failed purchase of certain ports in the US by DP World, and the Santiago Principles were under development. The financial crisis was seen by SWFs as an opportunity to increase their weight into distressed financial institutions, especially for those savings funds with a more aggressive international strategy, including ADIA, CIC, GIC, KIA and QIA.

In 2020, the story was vastly different. SWFs are now better governed, more sustainable and resilient, and were better equipped for recession. Some faced a double shock given the drop in O&G prices but reacted by raising debt, at either at national or fund level. The most active group throughout the crisis has been the one formed by development funds, including Mubadala, PIF, RDIF, Temasek and TVF, in sectors especially affected by the pandemic (entertainment, travel) but also in healthcare and technology as long-term bets.

Figure 15. Comparison for SWFs between 2008 Financial Crisis and 2020 Health Crisis

2008 – The Financial Crisis
90 SWFs with US$ 4trn AuM

VS

2020 – The Health Crisis
155 SWFs with US$ 9trn AuM

2008

1. Independent and random pools of capital
   - Governance & Transparency
   - Not much talk among them yet
2. Major players: Savings Funds
   - ADIA, CIC, GIC, KIA, QIA
3. Major opportunities: Financial Services

SWF	FS entity/ies	Injection ($b)
ADIA	Citi, Apollo, Ares	8.4
CIC	MS, BLK, BX	10.0
GIC	UBS, Citi	16.6
ICD	LSE, Nasdaq	2.5
KIA	Citi, ML, Visa	5.8
KIC	ML	2.0
MIC	Carlyle, Barclays	8.2
QIA	Barclays, CS, LSE	12.0
Temasek	Barclays, ML	6.4
Total		**71.2**

2020

1. Large and sophisticated organizations
   - Sustainability & Resilience
   - Collaboration, co-investments
2. Major players: Development Funds
   - Mubadala, PIF, RDIF, Temasek, TVF
3. Major opportunities: HC, Tech & Travel

Airline	SWF/s behind	Injection ($m)	Sponsor
Aeroflot	NWF, RDIF	0.9	SWFs
Emirates	ICD	2.0	Gvt
Gulf Air	Mumtalakat	-	-
Malaysia Airlines	Khazanah	1.2*	Gvt/SWF**
Qatar Airways	QIA	2.0	Gvt
Singapore Airlines	Temasek	4.7	SWF
Turkish Airlines	TVF	1.0*	SWF**
Total		**11.8**	

** Estimated by Global SWF, ** To be confirmed*

At the time of writing this report, there were significant developments regarding the approval and distribution of effective vaccines against COVID-19, which could indicate the imminent end of the lockdown. However, the lasting effects of the economic crisis will surely go beyond the first half of 2021 and may affect:

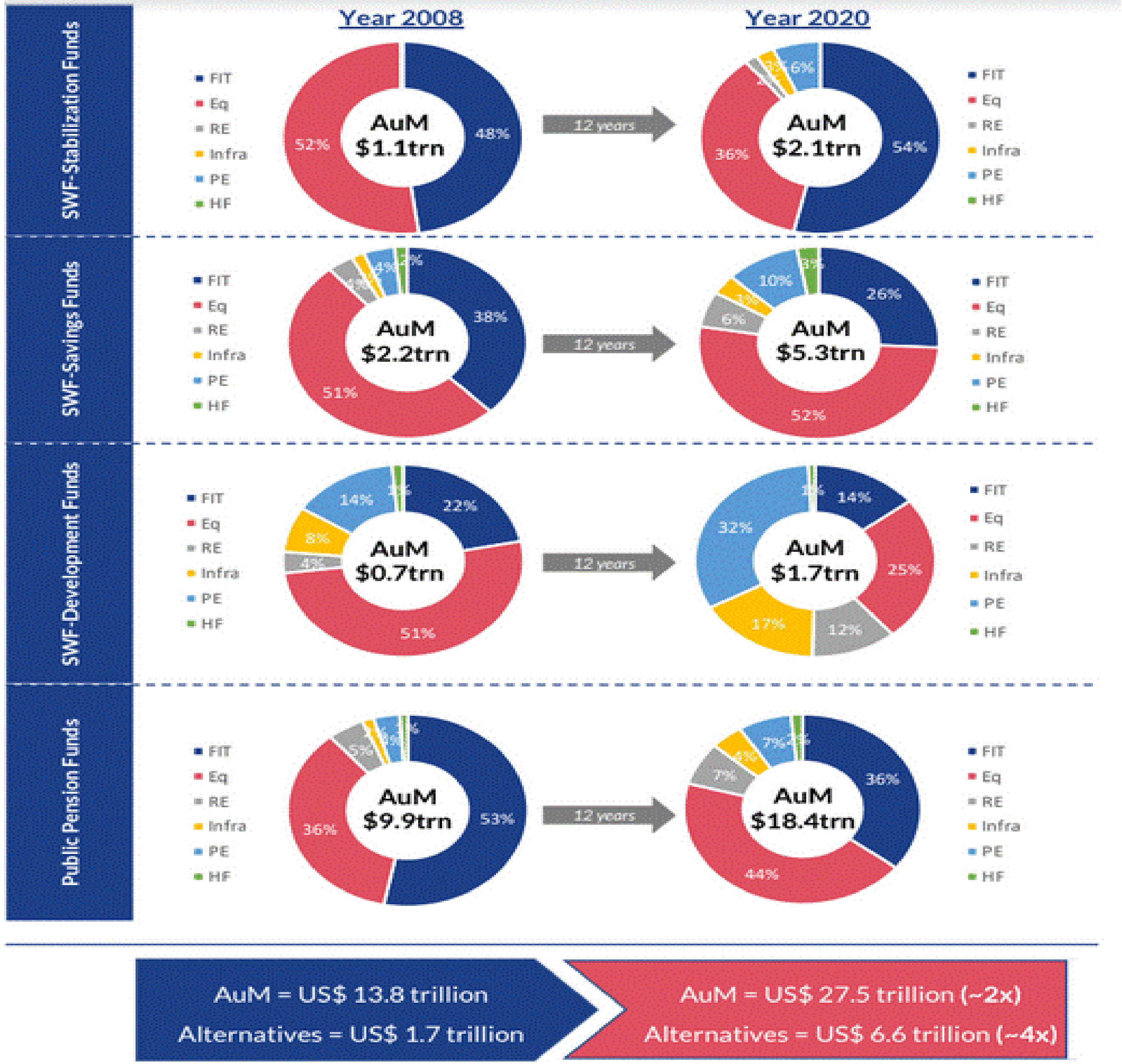
- Funds established to cover fiscal deficits or financing needs of their hosting government, including Middle Eastern, O&G-sourced funds (ADIA, KIA, QIA), which are yet to fully assess the impact of the crisis.
- Funds that will be responsible for the recovery of the domestic businesses significantly affected by the crisis such as national carriers, including ICD, Khazanah, Mumtalakat, NWF, QIA, RDIF, Temasek and TVF.

One thing is certain: the SWF industry will keep evolving until the next crisis. For our forecasts, *see pages 38-39*.

B- New Strategic Vehicles and New Investment Policies for a New Growth/ Новые стратегические инструменты и новая инвестиционная политика для нового роста

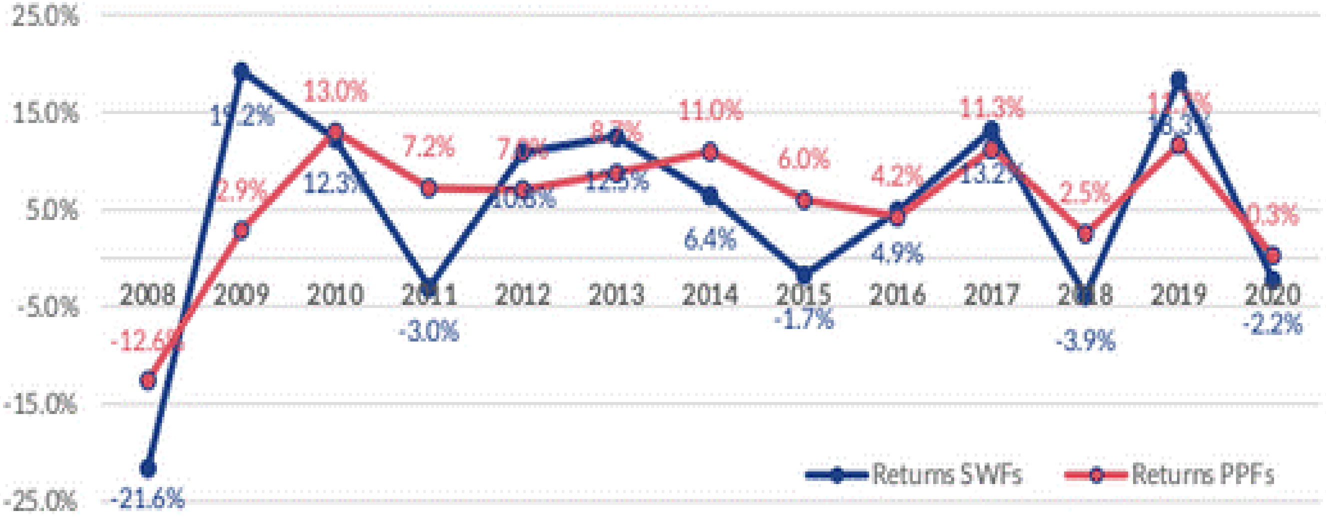
C-Assets Allocations Per Mandate/ Распределение С-активов в соответствии с мандатом /Allocations d'actifs par mandat

Figure 17. Comparison between 2008 and 2020 asset allocations per mandate



D-Rolling Returns And Heteregoneity in Profitability SWFs Vs PPFs/Rendements progressifs et hétérogénéité de la rentabilité entre Fonds souverains et Fonds de pension/Прогрессивная доходность и неоднородность доходности Суверенные фонды и пенсионные фонды

Figure 18. Investment Returns SWFs vs PPFs



One thing the industry needs to improve is returns. Global SWF has undertaken a comprehensive analysis of the industry's profitability, based on the asset allocation and benchmarks of the Top 100 SOIs. The results are illuminating and troubling. SWFs have returned, on average, 5.0% per annum in the past 12 years. This compares with 4.8% scored on average by their benchmarks and suggests a *SWF industry alpha of 0.2%*. Similarly, PPFs have returned on average 5.6% versus a reference of 4.6%, giving a *PPF industry alpha of 1.0%*.

This is a highly challenging comparison due to the lack of data as well as the heterogeneity of SWFs and PPFs. Besides different risk profiles and asset allocations, SOIs present different reporting dates (including *Hijri* and Persian years), which can be like comparing apples and oranges, especially in 2020 when funds closing the year in March were more affected than the ones reporting at the end of June, September or December.

Yet, we can spot certain trends and best performers. The table below lists the returns reported by ten major SWFs and ten major PPFs in the past five to six years. Among those reporting in March, CPP was by far the strongest, not even losing money in 2020. Among those releasing returns in June, NZ Super and Future Fund are outstanding, while among the ones reporting calendar years, Canada's CDPQ and OTPP stood out.

Table 5. Returns of selected State-Owned Investors

Fund	Country	Type	AuM ($b)	AAA (%)	Reporting	FY15	FY16	FY17	FY18	FY19	FY20	CAGR
CPP	Canada	PPF	341	48%	31-Mar	18.3%	3.4%	11.8%	11.6%	8.9%	3.1%	9.4%
GIC *	Singapore	SWF	488	20%	31-Mar	6.9%	9.2%	-8.8%	11.2%	7.5%	1.9%	4.4%
GPIF	Japan	PPF	1,592	1%	31-Mar	12.3%	-3.8%	5.9%	6.9%	1.5%	-5.2%	2.7%
PSP	Canada	PPF	120	49%	31-Mar	14.5%	0.7%	12.8%	9.8%	7.1%	-0.6%	7.2%
Temasek	Singapore	SWF	215	44%	31-Mar	19.0%	-9.0%	13.0%	12.0%	1.5%	-2.3%	5.3%
Alaska PFC	USA - AK	SWF	65	33%	30-Jun	4.9%	1.0%	12.6%	10.7%	6.3%	2.0%	6.2%
AusSuper	Australia	PPF	125	21%	30-Jun	10.9%	4.5%	12.4%	11.1%	8.7%	0.5%	7.9%
CalPERS	USA - CA	PPF	403	20%	30-Jun	2.4%	0.6%	11.2%	8.6%	6.7%	4.7%	5.6%
CalSTRS	USA - CA	PPF	258	32%	30-Jun	4.8%	1.4%	13.4%	9.0%	6.8%	3.9%	6.5%
Future Fund	Australia	SWF	150	35%	30-Jun	15.4%	4.8%	8.7%	9.3%	11.5%	-0.9%	8.0%
NZ Super	New Zealand	SWF	31	22%	30-Jun	14.6%	1.9%	20.7%	12.4%	7.0%	1.7%	9.5%
ADIA *	UAE - AD	SWF	726	22%	31-Dec	-6.8%	2.3%	18.8%	-10.3%	-1.6%	TBC	0.0%
APG	Netherlands	PPF	603	29%	31-Dec	2.4%	8.9%	6.8%	-1.9%	17.0%	TBC	6.4%
CDPQ	Canada - QC	PPF	244	36%	31-Dec	9.1%	7.6%	9.3%	4.2%	10.4%	TBC	8.1%
CIC **	China	SWF	1,046	29%	31-Dec	-3.0%	6.2%	17.6%	-2.4%	17.4%	TBC	6.8%
HKMA EF	HK - China	SWF	540	20%	31-Dec	-0.6%	2.0%	7.4%	0.3%	6.6%	TBC	3.1%
KIC	South Korea	SWF	157	15%	31-Dec	-3.0%	4.4%	16.4%	-3.7%	15.4%	TBC	5.5%
NBIM	Norway	SWF	1,128	3%	31-Dec	2.7%	6.9%	13.7%	-6.1%	20.0%	TBC	7.1%
NPS	South Korea	PPF	663	12%	31-Dec	4.6%	4.8%	7.3%	-0.9%	11.3%	TBC	5.3%
OTPP	Canada - ON	PPF	149	52%	31-Dec	13.0%	4.2%	9.7%	2.5%	10.4%	TBC	7.9%
SOIs	**Global**					5.5%	4.1%	10.0%	3.4%	9.8%	4.5%	6.2%

** Single year returns estimated based on 20-year reported rolling returns ** Overseas portfolio only*

Saudi Arabia is a rapidly-changing nation – especially its economic and financial landscape. The roadmap for this change is contained in the *Vison 2030 program*, which was announced in 2016 and aims to add diversification to the Kingdom via infrastructure, tourism, technology and health. Well until 2015, very few people outside of Saudi Arabia had heard about the Public Investment Fund (PIF), which was solely focused on the development of the domestic economy.

Fast forward to 2020, and PIF, Saudi Arabia's SWF, has become the main engine of *Vision 2030* and one of the world's most known SWFs, under the leadership of H.E. Yasir Al-Rumayyan as its Governor. In five years, its balance sheet grew from US$ 150 to US$ 360 billion, thanks to the Fund's strategy and its long-term investor approach. The Fund has also broadened its mandate beyond the Kingdom's borders, where today 20% of PIF's investments are international and plans to open offices in New York and London are taking place.

The portfolio is clearly split into six different pools of capital: four domestic and two international. The Saudi assets include holdings (mature investments), sector development (underdeveloped or nonexistent sectors), real estate (specific projects) and, most notably, the so-called *giga projects* (empty plots of land that are turned into ecosystems). The latter include the Red Sea Project, Qiddiya and NEOM – which means *new future* and covers 16,000 square miles in the Tabuk province.

The two international pools consist of the international diversified pool, which is dedicated to relatively liquid direct and indirect investments in different areas including real estate, debt, fixed income and public and private equity. The international strategic investments focus on industries of the future that secure significant returns and includes large commitments such as SoftBank Vision Fund (US$ 45 billion), Blackstone Infrastructure Fund (US$ 20 billion) and Uber (US$ 3.5 billion). At the end of Q1 2020, PIF invested into US businesses affected by COVID-19 in various sectors including entertainment, hospitality and energy. And between Q3 and Q4, it invested US$ 3.3 billion into subsidiaries of India's Reliance Group (*see page 26*).

But the organization's growth will not stop there, and the opportunities and challenges are significant. PIF is mandated to drive the diversification of the Kingdom away from oil and has ambitions to become one of the, if not the world's largest SWF (*see page 38*), with US$ 2 trillion AuM by 2030. Whether the oil reserves of the country and the injections from other government entities will suffice for that goal, that's a different story.

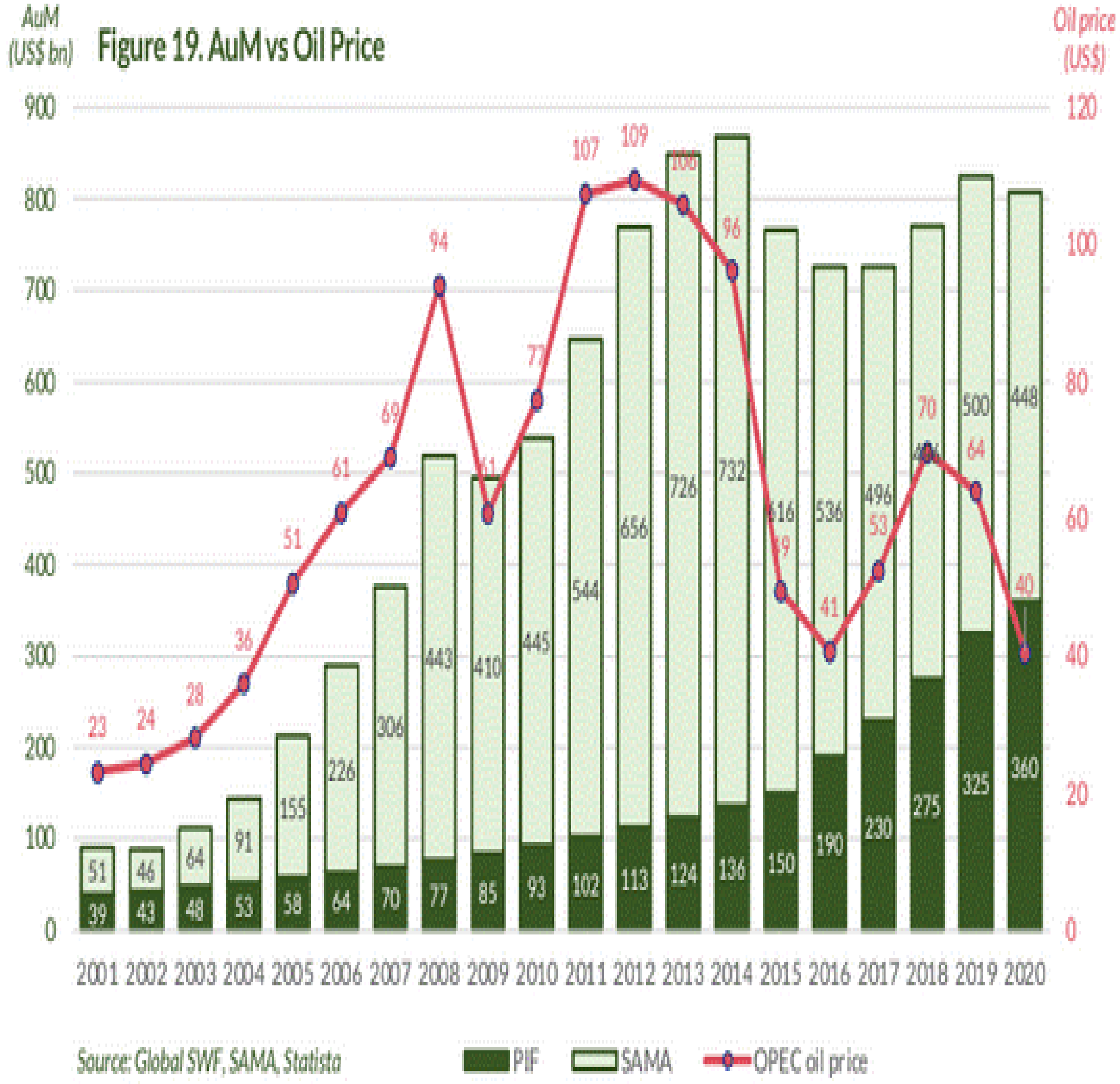
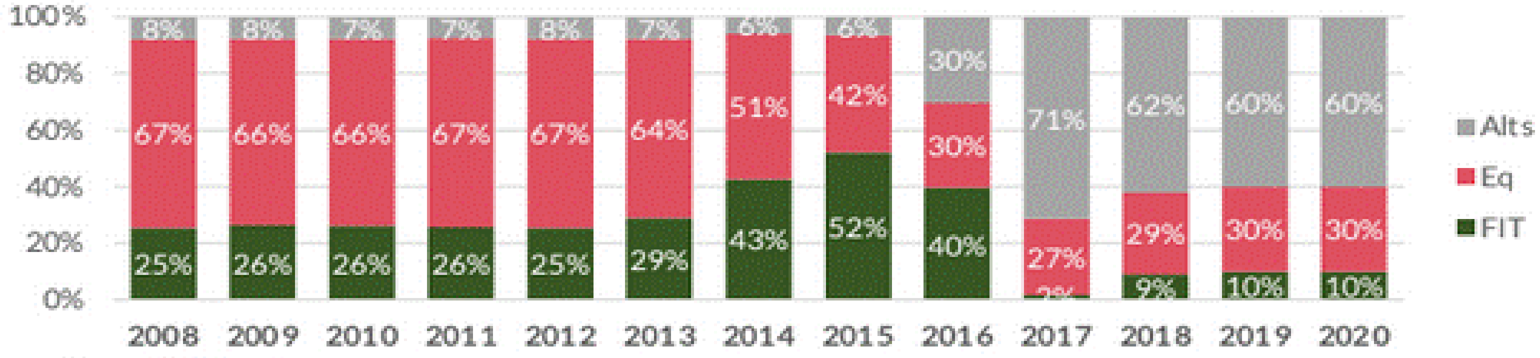

AuM (US$ bn)
Figure 19. AuM vs Oil Price
Oil price (US$)
Source: Global SWF, SAMA, Statista
PIF
SAMA
OPEC oil price

Figure 20. PIF Strategic Asset Allocation (%)



Source: Global SWF

Today, Oil & Gas industry accounts for roughly 87% of Saudi budget revenues, 90% of export earnings and 42% of GDP. It also represents 38% of PIF's portfolio although that is changing rapidly as the Fund increases its focus in technology, financial services, public sector, mining and agriculture, among others. In June of this year, PIF sold a 70% stake in Saudi Basic Industries Corporation (SABIC), the world's fourth-biggest petrochemicals company, to Saudi Aramco for US$ 69.1 billion.

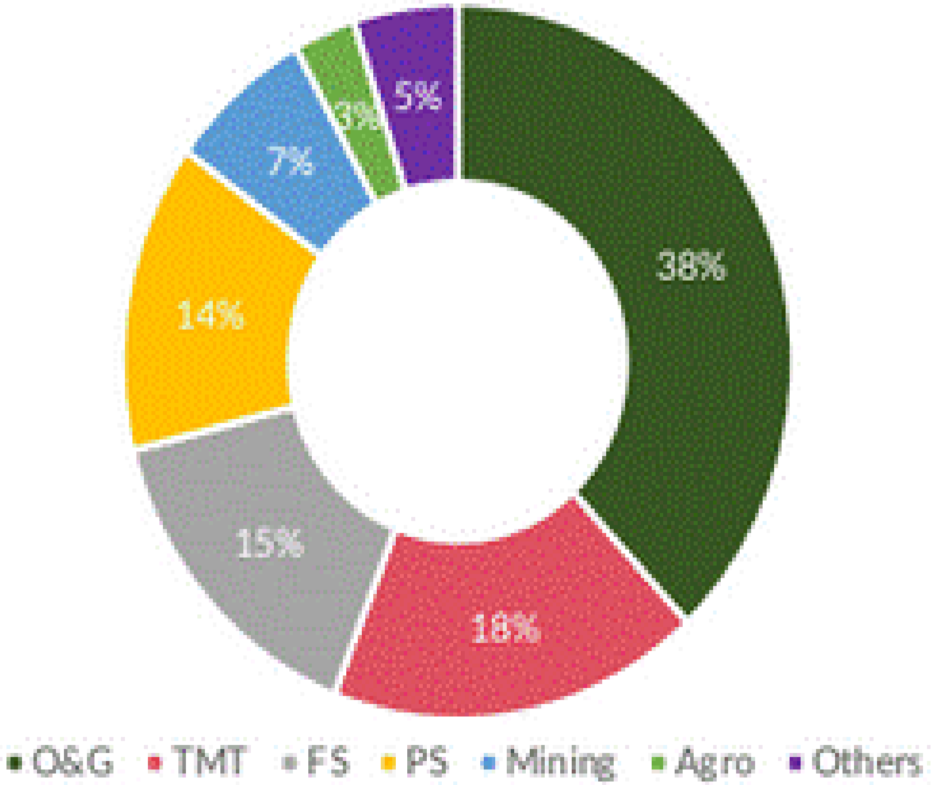
According to the Program designed in 2017, PIF's progress in 2020 would be measured with four KPIs:

- Assets: US$ 400 billion AuM (up from US$ 224 billion) and 4%-5% Total Shareholder Return (up from 3%)
- New Sectors: 20% share of assets in new sectors, which should contribute US$ 8 billion to Saudi's GDP.
- Partnerships: 25% of portfolio in international assets and US$ 5.3 billion cumulative contribution to FDIs.
- Economics: 11,000 direct high-skilled jobs created and US$ 56 billion investments in technology and R&D.

These goals imply a significant deployment of capital, especially after the pandemic. While other SWFs may be accountable to cover fiscal deficits, PIF supports the national agenda by investing into local businesses. In November of 2020, the Crown Prince confirmed that PIF had injected about US$ 83 billion in Saudi over the past four years, contributing to the creation of 190,000 jobs. The Fund is expected to increase the pace until 2030, investing US$ 40 billion in 2021 and 2022 in new sectors such as tourism, sports and transportation.

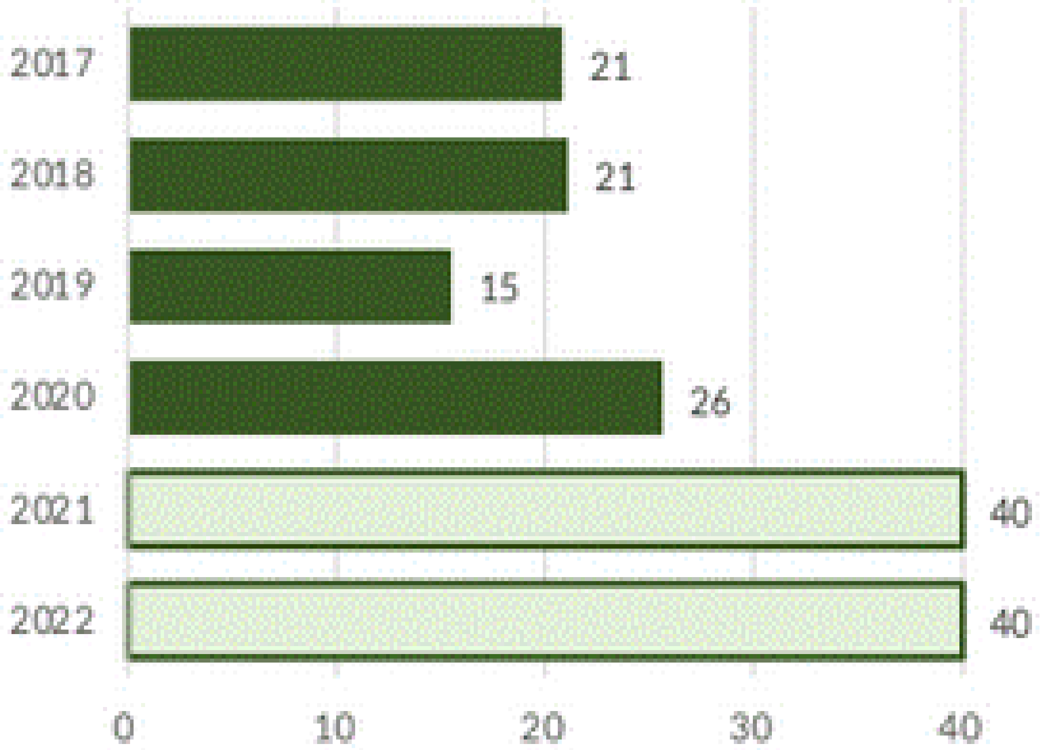
Pursuing such dual mandate of international financial returns and domestic economic progress is not an easy task. PIF will need to ensure alignment with other government vehicles while it continues to enable and support Saudi Arabia's private sector and will also depend on the achievement of the macroeconomic targets defined in the PIF Program 2018-2020, requiring a close monitoring of the progress beyond 2020. The foundational pillars are certainly already there.

Figure 21. Current portfolio diversification



Source: PIF

Figure 22. PIF Investments in KSA (US$ billion)



Source: PIF

Over the years, Private Credit (PC) has emerged as an asset class in its own right, having won growing support from SOIs, who have replaced more opportunistic investors as the main source of funding. COVID-19 is putting the skids on an evolution that was already underway as it coincided with the end of a long economic expansion that saw underwriting standards dip as the squeeze on yield led to increasingly risky financing decisions.

As the economic cycle matured, all the low hanging fruit – low-risk investments with a reliable return – dried up, leaving investors with riskier opportunities they would not have previously considered. With fixed income operating in a difficult environment, public equity rocked by high volatility, and rising fears that a private equity bubble is about to burst; private credit is becoming increasingly popular among SOIs in the hunt for yield.

The asset class has increased significantly, from 2% of portfolios in 2015 to 3.2% in 2020 among the Top 10 SOIs (*see table 6*). Sovereign investors benefit from lower liability constraints that enable them to take on more liquidity risk than banks. Their greater risk appetite is driven by their long-term investment horizon.

The trend is quite different from the trend seen in the few years after the 2008 GFC when private credit funds lost favorability. In the decade since the crisis, the AUM of global private credit has grown from US$ 238 billion to US$ 787 billion, according to the Alternative Credit Council's (ACC). The evolution and growth of PC led to an increasingly professional approach with rigorous due diligence helping to lower risk. Despite uncertainty and risks of a systemic crisis, ACC found that managers were set to raise US$ 100 billion in 2020 as the asset class is increasingly seen as way of hedging portfolios, matching the lending volume in 2019.

The asset class has been notably resilient amid the pandemic with managers successfully protecting their portfolio values as well as deploying dry powder to add assets. While the lockdown reduced allocations to private credit in the second quarter, investment is expected to pick up in 2021 as the market readjusts. With traditional banks restricting lending, private credit will serve as a crucial source of financing in the economic recovery, particularly for mid-market companies.

In its survey of managers with aggregate AuM of US$ 400 billion in private credit strategies, ACC found that 80% were bullish in their appetite to deploy capital over the next 12 months with 44% saying distressed debt opportunities will peak in the first quarter of 2021. SOIs will be a growing source of dry powder for private credit strategies with 88% of fund managers believing pension funds will increase allocations over the next three years, while 67% of SWFs expected to increase investment.

Today, the list of Top 10 allocators to the asset class is led by the Canadian Funds. Quebec's CDPQ has doubled its investments in private debt from 2016 to over US$ 27.4 billion in 2020, and it expects it to reach US$ 39 billion by 2024. Following it closely is federal CPP, which boosted its PC Program significantly when it bought Antares Capital from GE for US$ 12 billion in 2015. Together with OTPP, PSP and OMERS, they hold over US$ 83 billion in private credit alone. The non-Canadian SOIs in the Top 10 including CIC, GIC, ADIA, Future Fund and CalPERS maintain more modest allocations, but still very significant in absolute terms due to the sizes of their balance sheets. Some of these funds cover the asset class under Fixed Income, and others under Private Equity, but it is becoming an important part of their portfolio, nevertheless.

Table 6. Top Private Credit Allocators

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

** Estimated by Global SWF*

Emerging Asian markets are in the sights of SOIs, which are willing to take on the high risk as they offer potential high rewards. Asian emerging market junk bonds look set to be the focus of attention with the default rate for high-yield bonds at 4%, compared to 8% in the US, according to a recent report by Goldman Sachs.

India's Edelweiss Alternative Asset Advisors' US$ 900 million ESOF III special opportunities fund provided the perfect illustration of a year when emerging market private credit became a big draw for SOIs. By October, around US$ 675 million was raised from OTPP, Florida's SBA and Swedish AP4 for the fund, which focuses on providing structured credit to Indian companies, including distressed private credit opportunities.

But OTPP has not been the only Canadian PPF to enter the Indian direct lending sector. In 2019, CPP invested US$ 225 million in the India Resurgence Fund, a distressed assets buyout platform set up with Piramal Enterprises Limited and Bain Capital Credit as joint sponsors. ADIA also anchored the Kotak Special Situations Fund, focused on Indian distressed debt, with a US$ 500 million investment in 2019.

In September 2020, distressed debt was also a theme in the formation of a multibillion-dollar direct platform established by QIA and CSAM, which targets loans to upper middle-market and larger companies in the US and Europe. Meanwhile, Abu Dhabi's Mubadala forged a US$ 3.5 billion direct lending partnership with Barings, which followed its decision to anchor a US$ 12 billion alternative credit partnership led by Apollo. Overall, SOIs committed over US$ 10.5 billion to PC in the 21 months from March 2019 to November 2020.

Table 7. Commitments to PC in the past 21 months

Fund	Manager	Scope	Date	Value ($m)	Stake %
SBA Florida	Various	US	Nov-20	1,600	n.a.
NYSCRF	Pearl Diver	US	Sep-20	250	n.a.
Mubadala	Barings	EU	Sep-20	1,750	50%
QIA	CSAM	EU-US	Sep-20	1,000	50%
OTPP, SBA, AP4	Edelweiss	India	Sep-20	675	75%
Mubadala	Apollo	US	Jul-20	2,500*	21%*
NMSIC	1 William St	US	May-20	100	n.a.
NYSCRF	Vista Credit	US	Mar-20	700	n.a.
CPP	Resurgence	India	Dec-19	225	43%
ADIA	Kotak	India	Aug-19	500	50%
APG	MaxCap (RE)	Australia	Jul-19	240	50%
PSP	Ellie Mae	US	Mar-19	1,000	n.a.
Total				**10,540**	

** Estimated by Global SWF*

Yet, there are downsides in distressed debt, beyond default risks. A crowded market could diminish the yield potential. An investor bandwagon could see capital deployed too early, leading to unattractive valuations as investors compete to snap up opportunities. Nevertheless, sovereign investors are quick learners and have sufficient weight and sophistication to dominate the market going forward.

Not only will SOIs remain an important source of capital for private credit, but they are also likely to come into their own as direct lenders. So far, SOIs have favored partnerships with GPs or banks due to their added value and to the lack of internal capabilities, origination function and access to deals. But this will surely change. Global SWF believes that SOIs will build up their own in-house management as they increase their knowledge and skills base and deepen and broaden their exposure. The evolution of private credit is set to see SOIs play the same pivotal role in the asset class as they do venture capital in the years to come.

Asia's two behemoths, India and China, have been vying for the attention of SOIs in recent years, attracting billions of dollars in fresh inward investment. Yet, both countries have seen a different pattern of investment that correlates with the shape of their economic development and their place on the development curve.

Figure 23. SOIs private investments in China vs India (US$ billion)

China: The Emergence of a Tech Super-Power

While India has lured investors in infrastructure, retail, telecoms and financial services, China has seen a different pattern of investment. In recent years, SOIs have been more cautious in their exposure to Chinese private markets and in 2019 China fell behind India in sovereign investor inflows. The pace and volume of investment stepped up as the year progressed and SOIs became more confident of China's economic resilience in the pandemic. More than 80% of transaction volume and 60% of total investment value came in H220.

Singapore's Temasek and GIC remain the main stalwarts, representing three-quarters of SOI direct investment in 2020. For the first time in its history, Temasek's portfolio was more weighted to China than Singapore in FY2019/20, climbing to 29% of AUM – although factors such as the depreciation of the Singaporean dollar and falling domestic public equity values also played a role.

Over the past two years, real estate has been the biggest focus of attention, making up 46% of allocations in 2019 and 48% in 2020, despite renewed fears that the bubble is about to burst in the sector. However, the volume of acquisitions is small and comprised of big-ticket assets, such as GIC's US$ 1.3 billion purchase of LG Twin Towers in Beijing early in the year. The US$ 488 billion fund turned out to be the sole SOI in the sector over the year with further investments in a Beijing office portfolio, a logistics property fund led by CITIC, and a residential property joint venture with Yanlord – all three investments, totaling US$ 930 million, enabled GIC to maintain a toehold in different RE segments.

However, real estate is not sovereign investors' core interest in China. The Asian country is home to a rapidly growing base of tech-savvy consumers with rapid growth in mobile penetration and over a fifth of internet users reliant on their cell phones. The potential for fast adoption of innovative tech, particularly in the retail and consumer sector, make investment in Chinese software, online payment systems, entertainment, and e-commerce an enticing prospect. China is rapidly becoming a cashless society and accounts for around a half of the world's e-commerce transactions.

Such appetite for tech has overcome certain obstacles, such as laws introduced in 2016 to regulate internet advertising and to implement censorship controls, which had far-reaching effects on e-commerce and social media. These encumbrances are outweighed by government measures introduced in the past two years to nurture tech, including the "*New Generation Artificial Intelligence Plan*" issued by the State Council to prioritize China's leadership in AI; *Made in China 2025*, which seeks to move China from being a low-end manufacturer to becoming a high-end producer of goods for its growing domestic consumer base; and, the *China Standards 2035 Plan*, an ambitious plan to write global standards for the next generation of technology. At the 2020, the CCP announced the government would spend US$ 1.4 trillion on a digital infrastructure public spending program.

Since 2018, SoftBank Vision Fund – with its strong SOI backing – has plunged around US$ 12 billion in Chinese private equity with exposure to these tech-driven consumer segments, from TikTok creator ByteDance to the world's most valuable AI pioneer SenseTime. China's biggest tech firms are backed by SOIs, including Alibaba, Ant Financial and TenCent with GIC, Temasek and Khazanah leading SOI investment. These firms have helped spur a number of Chinese unicorns spanning social media and e-commerce, which have also received SOI backing, such as ride hailing app Didi-Chuxing and food delivery app Meituan-Dianping.

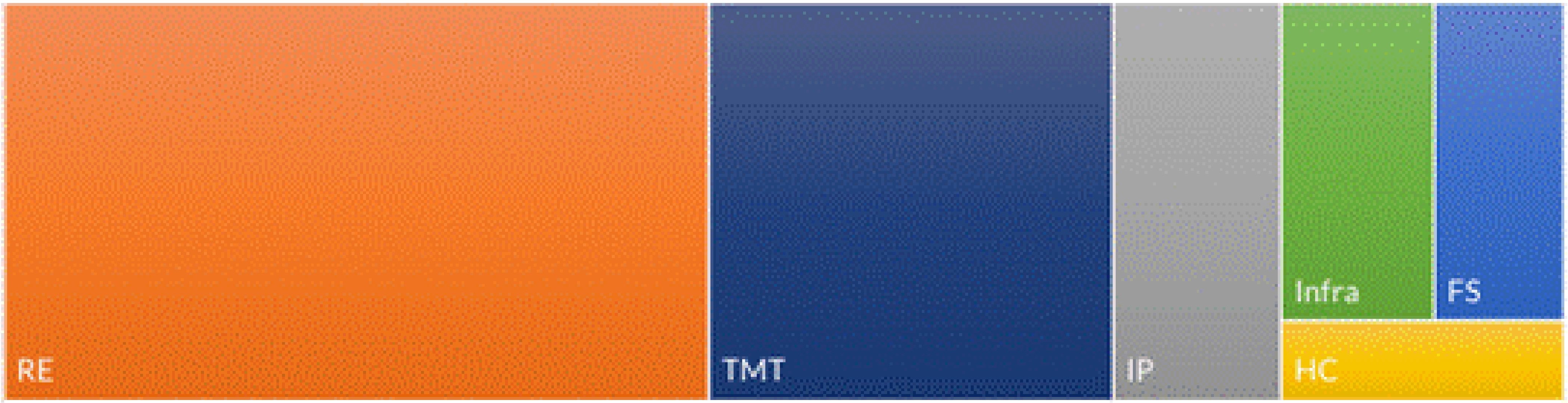
China's tech sector did not cease to be a big attraction in pandemic-hit 2020, representing just under a third of transaction volume and a quarter of value. Within the segment, SOIs focused on cloud and data storage services as well as software developers. GIC and Temasek each invested US$ 200 million in unicorn EdTech developer Yuanfudao, which surpassed QIA, CPP-backed, Indian rival Byju's in terms of value. ADIA became the largest investor in Gaw Capital's internet data center platform's US$ 1.3 billion fundraise, giving it exposure to a segment with an infrastructure-like long-term revenue stream but with tech-like growth prospects.

High-tech manufacturing is also an area of growing interest as Chinese industry matures and moves up the value chain, with GIC investing an estimated US$ 120 million in flash memory chip producer GigaDevice Semiconductor. Market disruption was a theme in other sectors with QIA and Mubadala playing a prominent part in the US$ 400 million fund-raising by Tesla's Chinese rival Xpeng ahead of its planned US IPO.

However, in most segments, SOI direct investment was still down from its 2018 peak, potentially because SOIs were keener to invest in public equities with relatively low P/E ratios in Shanghai, robust stock price growth and the appreciation of the renminbi pointing to opportunity for growth. There was certainly more SOI activity in Chinese IPOs with GIC taking the lead. In September, the Singaporean SWF invested in three blockbuster IPOs as a cornerstone investor: real estate software developer Ming Yuan Cloud Group's near US$ 800 million IPO, the US$ 2 billion IPO of agri-food giant Wilmar International's Chinese subsidiary Yihai Kerry Arawana, and bottled water manufacturer Nongfu Spring's US$ 1.1 billion IPO. All three offerings gave GIC exposure in markets that have demonstrated high rates of growth in recent years.

The postponement of the record IPO of Ant Group in November 2020, mainly due to changes in the fintech regulatory environment, dampened SOI hopes of taking a slice in the tech-driven financial services firm. The *State Administration for Market Regulation* introduced new laws aimed at preventing Internet platforms from assuming a dominant market position or obstructing fair competition. While Ant Group's giant IPO has been thrown into doubt for the time being, the move against anti-competitive behavior could support China's thriving tech ecosystem and therefore continue to fuel SOI venture capital. The new rules will see retailers and merchants get a higher cut of revenue from the e-commerce platforms they use, and the regulator could target exclusivity agreements which prevent merchants from selling on multiple rival platforms. The moves will have a negative effect on e-commerce majors but will increase competition and reduce the bargaining power of dominant players over suppliers, thereby ensuring lower cost of entry to new firms and a broader array of investment opportunities. For SOIs, high levels of competition and market disruption offer greater potential for long-term yield and the opportunity for early-stage investment in the next potential unicorn.

Figure 24. SOI private investments in China FY20



India: Shift from Infrastructure to Consumer

India's rapid population growth will likely ensure that the country surpasses China as the world's most populous country in 2027 with the government targeting a GDP of US$ 5.0 trillion. A proactive approach to sovereign investment has yielded more than US$ 50 billion in investment from SOIs since 2015, of which a fifth has been devoted to infrastructure due to the government's aggressive efforts to ramp up FDI in the sector. The *National Infrastructure Pipeline (NIP)* aims to support growth of India's infrastructure sector with total investment of US$ 1.4 trillion and is bolstered by liberalization of FDI regulations and highway privatization.

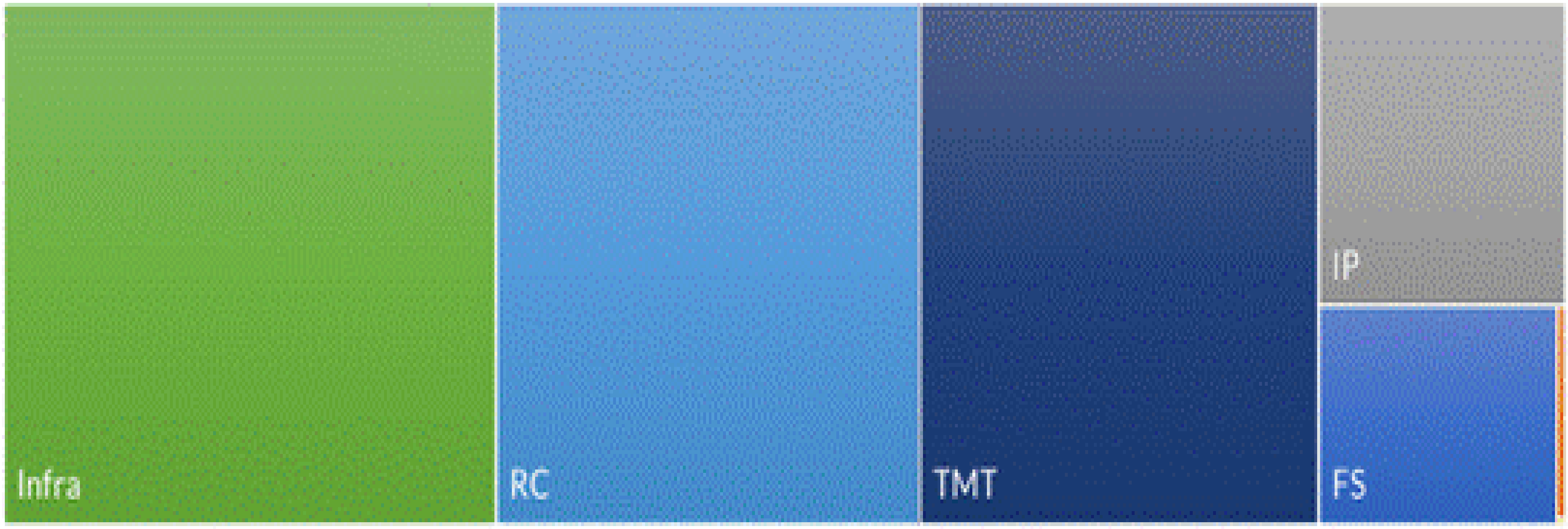
As part of India's aggressive drive to woo SOIs, the FY2020/21 budget provided a tax exemption for specified infrastructure investments. Mubadala became the first SWF to be granted 100% income tax exemption for long-term infrastructure investments in November. The government also seeks to help channel FDI in infrastructure via its quasi-SWF National Investment and Infrastructure Fund (NIIF), which was formed in 2015. NIIF recently closed its Master Fund with US$ 2.34 billion from ADIA, AustralianSuper, CPP, OTPP, PSP and Temasek, as well as USA's IDFC, the government of India and four other Indian leading institutions. NIIF also registered a Fund of Funds, which has already closed commitments from AIIB and ADB, and a Strategic Fund, for a total AuM of US$ 4.3 billion. Additionally, in November 2020, the government announced it would infuse US$ 810 million equity in NIIF's debt platform, in its attempt to drive infrastructure creation.

SOIs are looking beyond highways to growth areas that resonated with their ESG policies. Although small, the renewables sector is coming into play as a target for rapid expansion of electricity generation, which is essential to meeting demand and preventing load-shedding that has undermined the country's full manufacturing potential. Independent solar and wind power generators have been major beneficiaries, drawing around US$ 4 billion from ADIA, GIC, CPP and CDPQ in some of India's leading renewable energy producers. India's emerging green economy will require additional investments of US$ 330 billion between 2020-30, according to the government. With their minds on technological innovation and environmental sustainability, yield-seeking sovereign investors will continue to remain exposed to India's clean energy revolution.

In 2020, SOIs pivoted towards telecom and consumer sectors and away from roads and renewables, in order to diversify their exposure within the Indian markets and to endure problems with project completion. Land acquisition challenges, cost overrun, and the deteriorating outlook have eroded investor confidence in new highways. Although the challenges have eased over the past two years, around a sixth of major road projects are still behind schedule with an average cost overrun of 28%. This situation has been exacerbated by the pandemic and has hit revenue ratios, leading to a slowdown in construction and to a waned SOI interest.

The dramatic effects of lockdown on the Indian economy, which sent it into a tailspin in Q2 2020, prompted Canadian PPFs to pause their investments from May. CPP suspended its US$ 190 million investment in an infrastructure arm of Mumbai-based logistics firm JM Baxi, and CDPQ halted the purchase of the US$ 325 million Highway Concessions One portfolio from GIP, its first acquisition of roads in India. The two funds had previously been among the biggest investors in the country's public and private equity markets.

Figure 25. SOI private investments in India FY20



During 2020, Industry tycoon Mukesh Ambani's US$ 185 billion empire Reliance Industries served as the lightning rod for SWFs and PPFs keen to gain exposure to a fast-growing market of 1.4 billion consumers and to a group pushed by Modi's *Digital India Initiative*, and poised to become India's Alibaba or Tencent.

SOIs focused on two areas of the Group's business: retail and telecom. ADIA, GIC, Mubadala and PIF featured prominently in fund-raising by Reliance Retail Ventures Ltd (RRVL) in Q3-Q4 2020, which intends to link neighborhood stores for online deliveries of groceries, clothing, and electronic goods through its JioMart platform. The move linking SMEs to e-commerce is a direct challenge to Flipkart, to Amazon India and to Big Basket. Beyond RRVL, Temasek devoted up to US$ 160 million to restaurant delivery service Zomato ahead of its planned IPO in 2021, and ICD invested US$ 121 million in meat and fish retailer Freshtohome. Even RE became oriented towards e-commerce with GIC taking an 80% of a US$ 750 million JV with ESR in December.

India's digital transformation leap in retail would be impossible without the development of mobile network and increased internet penetration, which stands at about 1.2 billion subscribers today. Reliance gained considerable traction with its telecoms' unit Jio selling a 5.4% stake to ADIA, Mubadala and PIF. Like RRVL, Jio is seeking to disrupt the market by aggressively under-cutting established rivals with a low-cost new fiber-to-the-home broadband service plus additional offers. Jio's onslaught has slashed the number of players in the market and secured its position as the country's biggest wireless operator with 400+ million subscribers.

Sovereign investment in telecoms infrastructure is supporting Jio's relentless growth. ADIA and PIF invested US$ 506 million each to take a 51% stake in the Digital Fibre Infrastructure Trust (InvIT), and BCI and GIC teamed up with Brookfield to acquire a telecoms tower company from Reliance in August 2020 for US$ 3.4 billion. With Jio the portfolio's anchor tenant under a 30-year Master Services Agreement, the partners are looking to increase the number of towers by 30% to match the telecom operator's growing subscriber base.

Table 8. SOI investments in Reliance companies in 2020 (US$ million)

SOI	Reliance Jio		Retail Ventures		InvIT (Digital Fibre)		Tower Infra Trust		Total
ADIA	750	1.2%	750	1.2%	506	26.0%	-	-	2,006
BCI	-	-	-	-	-	-	930	27.4%	930
GIC	-	-	752	1.2%	-	-	1,870	55.0%	2,622
Mubadala	1,200	1.9%	853	1.4%	-	-	-	-	2,053
PIF	1,500	2.3%	1,300	2.0%	506	26.0%	-	-	3,306
Total	3,450	5.4%	3,655	5.8%	1,012	52.0%	2,800	82.4%	10,917

Beyond retail and telecoms, SOIs revived their interest in the financial sector with their first serious investment since 2017. GIC and SAFE poured US$ 670 million into India's leading mortgage lender and largest privately owned bank HDFC. The choice still indicated wariness towards a sector that is burdened with high levels of bad debt. With the lowest NPL ratio of the top 10 banks and the highest level of NPL provisioning, investment in HDFC was a safe option for SOIs seeking a larger PE exposure to the Indian financial sector.

Outlook for China and India

Although rivals, India and China have much to teach each other: India's strength has been to aggressively fund-raise for investment in infrastructure, while SOIs have been lacking in China's PPP pipeline. With the backdrop of COVID-19, China developed its Plan 2021-25 with a focus on supply chains, infrastructure and digital-economy capabilities. Ultimately, China is seeking to double GDP per capita by 2035 with a sustainable level of debt, and foreign capital and SOIs in particular could play a central role in it.

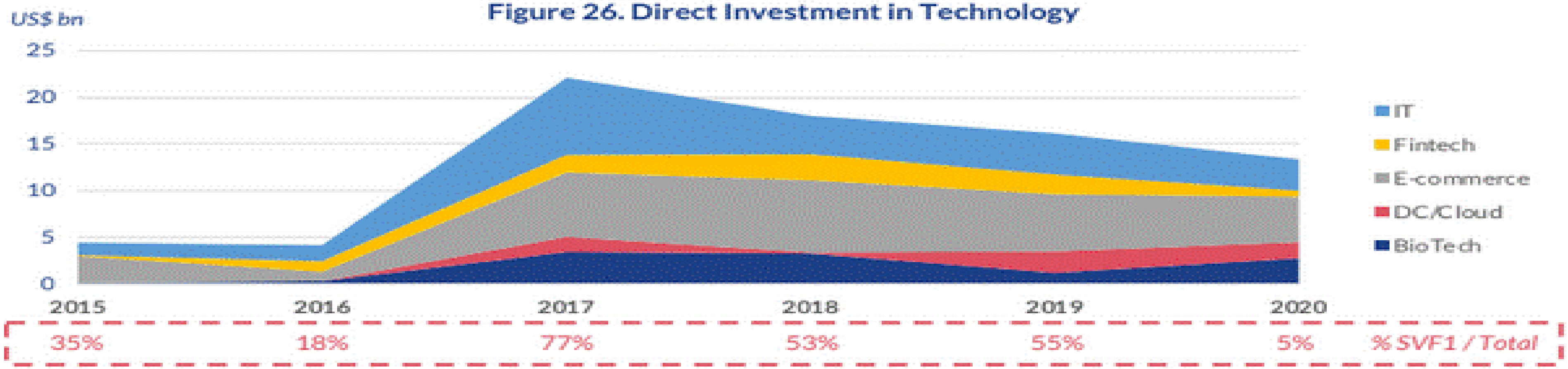
Meanwhile, India will need to emulate China in encouraging SOIs to establish a more permanent presence. As India becomes an ever-more important destination for investment, we expect more SOIs to set up new offices, with the tech capital Bangalore potentially becoming a target for VC as India's Silicon Valley. With a high skills base, India will be positioning itself as a Western ally amid rivalries with China, creating a regulatory environment that provides better protections for tech companies than China's opaque system. By spurring VC, SOIs will be able to participate in the fast-paced evolution of other high growth sectors where Tech can play a role, including infrastructure, education, retail, telecommunications and financial services.

The Fourth Industrial Revolution will be driven by disruptive technologies that promise to bring seismic changes to industrial sectors and, in turn, wider society. The way we live, work and communicate will be transformed and defined by innovative technology. As investors with long-term horizons, SOIs are looking to gain exposure to the potentially high returns derived from technological change. During 2020, COVID-19 hastened this rapid transition and boosted technology and innovation private equity opportunities.

Before the crisis hit, there was mounting concern that the influx of VC into the Tech sector was leading to inflated asset values, generating fears of a repeat of 1999 when the tech bubble burst. Tech investment by SOIs reached an annual peak of US$ 22 billion in 2017 amid a massive slew of capital from the SoftBank Vision Fund (SVF1), which invests in emerging technologies and has also invested in disruptive startups in real estate, retail and transportation. Backed by PIF (45%) and Mubadala (15%), SVF1's investments ended in 2020 and represented around half the capital deployed in technology by SOIs in the past six years.

SVF1 points to the significant risks involved in betting on venture capital in tech. SoftBank admitted that it racked up a US$ 18 billion loss in 2019 and some investments had arguably gone awry in the frenzied bid for scale and market share. Although Uber's IPO was one of the biggest in history raising US$ 8 billion, a badly timed launch meant it failed to reach expectations – which, alongside the near-collapse of WeWork, raised questions over SoftBank CEO Masayoshi Son. Although the fund bounced back into the black on a wave of equities growth in 2020, the doubts over SoftBank's strategy have prompted SOIs to opt out of Vision Fund 2.

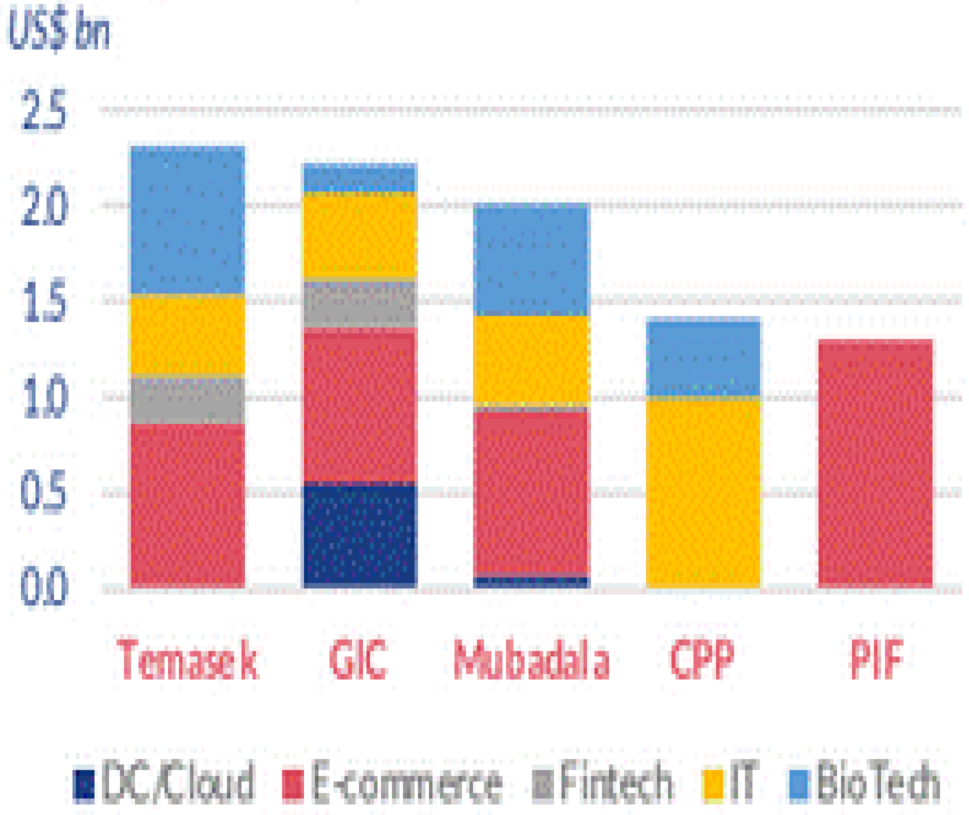
Figure 26. Direct Investment in Technology



If we isolate SVF-1's effect, 2020 was a record year for Tech direct investments by SOIs, 74% up from 2019 to US$ 12.7 billion. SOI investments in e-commerce and data centers and cloud services remained largely on a par with 2019 levels. However, there was a sharp pivot away from fintech and towards information technology and life sciences and biotech. On the one hand, SOIs appeared to be reluctant to expose themselves to a high-risk financial services sector at a time of plummeting household spending, while on the other they were seeking opportunities created by a black swan event that looks set to define future trends in tech.

Leading the pack was Temasek, which deployed around US$ 2.3 billion into tech-related sectors especially on e-commerce and life sciences. Stablemate GIC was the second biggest direct investor, with US$ 2.2 billion, and led SOI investment in data centers and cloud. The third largest spender was Mubadala, with US$ 2 billion in direct investment and a further US$ 2 billion in a long-term tech strategy by Silver Lake. In fourth place was CPP, which devoted two-thirds of its US$ 1.4 billion to IT with the remainder spent on life sciences. PIF was the fifth biggest, largely due to its massive allocation to e-commerce in India.

Figure 27. Top Five Tech Investors in 2020



There are four main trends that are driving the change in Tech investments and need to be dug into:

8.1. Infrastructure of the Digital Age:

Data centers and cloud computing are the infrastructure of the tech revolution. Like conventional transportation infrastructure, the segment provides long-term income generation, yet exposure to tech ensures long-term growth in scale. In 2020, 40% of SOI investment in the sector was allocated to developed Asia with a further 40% devoted to emerging markets and the remainder in Europe and North America.

GIC was the biggest investor in the sector, providing nearly a third of investment. Much of its investment was devoted to a US$ 1 billion joint venture with Equinix to develop and operate hyperscale data centers in Japan to support the workload deployment needs of a targeted group of hyperscale companies, including the world's largest cloud service providers. The venture follows on from a similar deal signed in 2019 by the partners for hyperscale data centers in Europe, indicating a long-term partnership in the sector.

Canadian pension fund OTPP has also sought to develop its exposure to data centers, having made a substantial allocation to Compass Datacenters in 2017. It led a US$ 360 million funding round for Singapore-based Princeton Digital Group which has built a portfolio of 18 data centers across four countries – China, Singapore, Indonesia, and India - and serves top hyperscalers, internet and cloud companies.

SOIs are also seeing the value of bolstering domestic data center infrastructure as a strategic national investment. Mubadala took a stake in UAE-based Group42, an artificial intelligence and cloud computing company, via the integration of Injazat and Khazna Data Centers. Meanwhile, Future Fund announced in early 2020 its first direct investment in data centers, having acquired a 24.1% stake in Canberra Data Centre (CDC).

8.2. AI and EdTech: Growth Opportunities in IT:

AI is a leading disruptive technology focused on machine learning that is driving a paradigm shift throughout the tech sector. A highlight of 2020 was the US$ 2.3 billion fund-raising round by Waymo, the self-driving technology company owned by Google's parent Alphabet, with Mubadala and CPP stumping up around half the capital. The firm intends to further develop AI in the transformation of mobility and transportation as its scales up its business, in partnership with Volvo. OTPP also sought exposure to autonomous transportation by leading a US$ 267 million injection in China's Pony.ai, as it expands is robotaxi fleet across China and the US.

The pandemic has also served as a catalyst for investment in EdTech, which can enhance and deliver learning through apps, video conferencing, and software. Lockdowns and social distancing have prompted an acceleration in in digitalization in education with global VC estimated by Global SWF at US$ 8 billion in 2020. SOIs have participated in the some of the biggest funding rounds of EdTech, long before the pandemic struck. Since 2015, Temasek has led two funding rounds for Chinese 17ZUOYE, totaling US$ 350 million. The platform now has nearly 80 million student, parent and teacher users with 140,000 participating schools.

In October 2020, both Temasek and GIC participated in the US$ 1 billion funding round by another Chinese EdTech startup Yuanfudao, which has amassed 400 million users in China. The firm operates live tutoring platforms and online homework services which have surged in popularity as the pandemic forced learning to migrate to online classes. Now valued at US$ 15.5 billion, Yuanfudao's fundraising has enabled it to surpass India's Byju's, valued at US$ 12 billion, as the world's biggest EdTech provider. Byju's has grown exponentially since it achieved unicorn status in late 2017, having gained US$ 123 million in capital from CPP in December 2018 and a similar amount from QIA in July 2019.

Not content with backing just one player in Chinese EdTech, GIC also led a US$ 200 million funding round for Aixuexi, which is specializing in STEM education and is leveraging cloud computing, AI and internet of things in its bid to sustain its exponential growth. Meanwhile, Temasek dipped its toe into the regional EdTech sector in December 2019 with its participation in the US$ 150 million funding round by Indonesia's Ruangguru via its EV Growth venture capital fund – one of the largest funding rounds for a Southeast Asian startup – in what Global SWF believes is the start of a trend in tech investments by the investor in the region.

8.3. Health and Climate Crises Drive Life Science Allocation:

The advent of a global health crisis triggered large cash injections into life science and biotech companies as they sought to create treatments and vaccinations to combat COVID-19. SOIs also looked to longer term trends as the world grapples with the enduring problem of climate change. 2020 investments were largely focused on early-stage funding rounds seeking to support the entire lifecycle of promising startups. The strategy saw 40 deals over the year with a median value of US$ 45 million – a relatively low value for SOIs.

Temasek led a US$ 250 million private placement in Germany's BioNTech, which paid off with the discovery and approval of a COVID-19 vaccine developed in conjunction with pharma giant Pfizer. Mubadala also tilted heavily towards biotech with a US$ 235 million private placement in German drug discovery company Evotec, which is developing antibodies to treat COVID-19. CPP, PSP and Alaska PFC joined a US$ 700 million funding round by startup Sana Biotechnology to support its development of gene and cell therapies.

A small but increasingly important area of tech for SOIs relates to agriculture and food production on the back of a potential food security crisis. The dominance of GIC and Temasek in this segment should come as no surprise given Singapore's lack of sufficient land for crops. In 2020, Temasek extended its portfolio into urban farming by forging a JV with Leaps by Bayer and by spending US$ 365 million in acquiring an 85% stake in Israel's Rivulis Irrigation, which applies smart technology to agricultural systems. Other allocations included US-based Impossible Foods and Australian startup V2Food, both of which stand for ethical consumer choices. Meanwhile, GIC led a US$ 353 million round by Apeel Sciences, which is creating solutions for food waste, and CPP injected US$ 300 million into Perfect Day, which has pioneered its proprietary flora-made dairy proteins.

ADIA deserves some extra kudos in this section, after it invested US$ 100 million in Moderna's pre-IPO, Series G in February 2018. After the IPO in December 2018 and the approval of its COVID19 vaccine in December 2020, the company is now worth US$ 55 billion, and we estimate that the Abu Dhabi fund has made around 22x their money in less than three years, becoming a great example of VC's potential upside for SOIs.

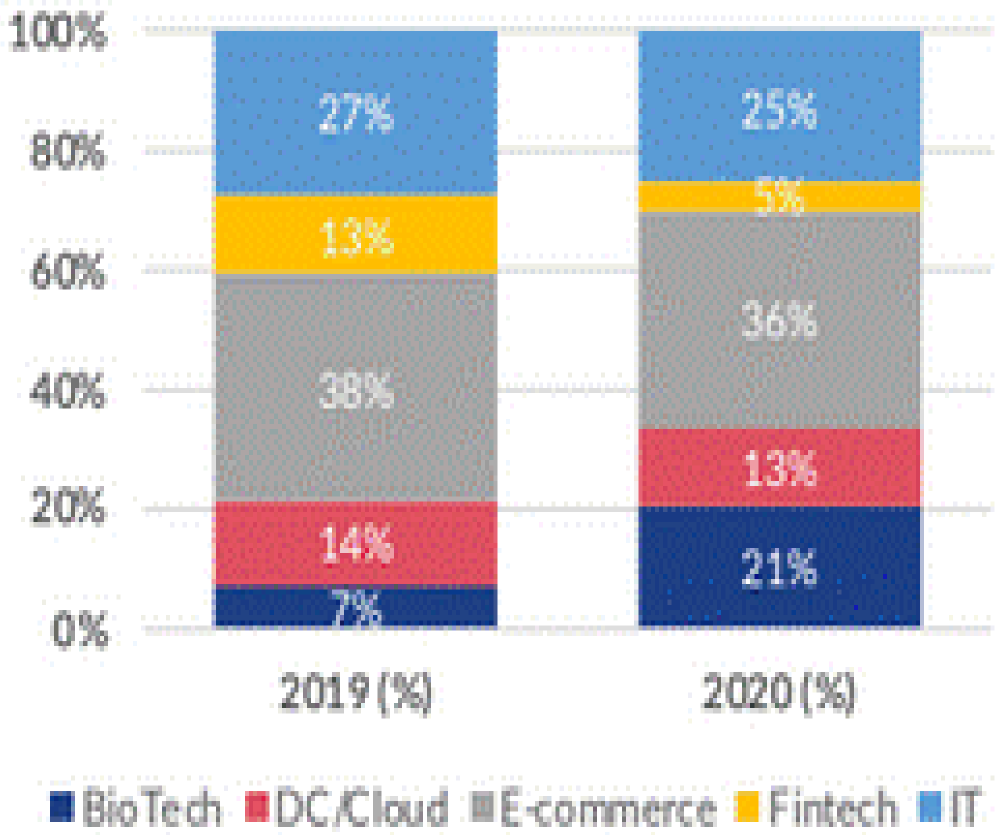
8.4. Cautious on Fintech, but Aggressive in EM e-commerce:

In e-commerce, SOIs turned their attention to fast-growing emerging markets where an already rapid process of retail digitalization was boosted by the impact of lockdown. India's Reliance Retail Ventures Ltd (RRVL) attracted the bulk share of SOI dollars with ADIA, GIC, Mubadala and PIF totaling US$ 3.7 billion. RRVL benefits from vertical integration with the Reliance Group's 4G data and mobile services but is also drawing in local independent retailers into its e-commerce logistics to deliver goods ordered online.

Temasek also joined in the bid for growth in Indian e-commerce with its continued backing of online restaurant delivery company Zomato with a further US$ 62 million on top of the investments made since 2015, ahead of an IPO in 2021 targeting a US$3.5 billion valuation. It also continued to pump funding into Indonesia's Tokopedia (up to US$ 675 million), which is preparing for an IPO, too. The Singaporean investor and Google expect that the Indonesian e-commerce market will grow from US$ 21 billion in 2019 to US$ 82 billion in 2025.

While there was hunger for high growth deals in e-commerce, SOIs restrained their fintech investments in 2020. Throughout the year, VC deal-making in fintech was dominated by rounds of more than US$ 100 million, which SOIs appeared to avoid due to a combination of risk aversion, a lower level of early-stage fundraising rounds, and an expectation that traditional providers are rapidly digitalizing their services. Temasek injected capital into UK-based FNZ, joining existing shareholder CDPQ. GIC led a US$ 500 million round by Affirm, the San Francisco fintech startup begun by PayPal co-founder Max Levchin. And Mubadala aimed for earlier stage investments in tech-enabled insurance broker Gabi and home-grown MidChains.

Figure 28. Pivoting in Tech investments



Just like the term "SWF", the term "ESG" was coined in 2005 to refer to the three central factors in measuring the sustainability and societal impact of an investment in a company or business: **E**nvironmental, **S**ocial and (Corporate) **G**overnance. Since then, the assets acquired by institutional investors under ESG strategies have grown more than four-fold, to US$ 6.2 trillion[1] in 2020. But ESG is not only about green economy, and the three factors need to be broken down and analyzed separately:

- The factors related to the "**E**" are perhaps the most intuitive: most SOIs producing a sustainability report include "carbon emissions" and "investments in renewable energy" as KPIs and several of them have committed to having net-zero portfolios by 2050. Canada's CDPQ has created the ultimate incentive by pegging their staff's annual bonus to the carbon emissions of the portfolio they manage.
- The "**S**" part is arguably rooted in an older acronym, CSR (Corporate Social Responsibility), and it refers to elements that may arise between a company and people including human capital development. In practice, most SOIs set up goals of diversity and inclusion, which enhance performance and impact, e.g., Abu Dhabi's ADIA employs 60+ nationalities, although almost all directors are male, UAE-nationals.
- The issues related to the "**G**" relate to both Corporate Governance (e.g., Board composition, executive pay, audits, internal controls and shareholder rights) and Corporate Behavior (e.g., business ethics, cybersecurity and tax transparency). Norway's NBIM, which holds over 1.5% of all listed companies worldwide, has for a long-time exerted pressure on portfolio companies over Governance issues.

ESG is handled by investors in two very different ways: the divestment approach involving exiting businesses over issues such as carbon emissions and human rights violations, and is arguably the strictest, championed by NBIM with 167 companies on its exclusion list as of Dec'20. On the other hand, the engagement approach makes use of proxy voting and "carrot and stick" policies with portfolio companies, defending a greater potential in the long term, and is more commonly used by Japan's GPIF and among Canadian PPFs.

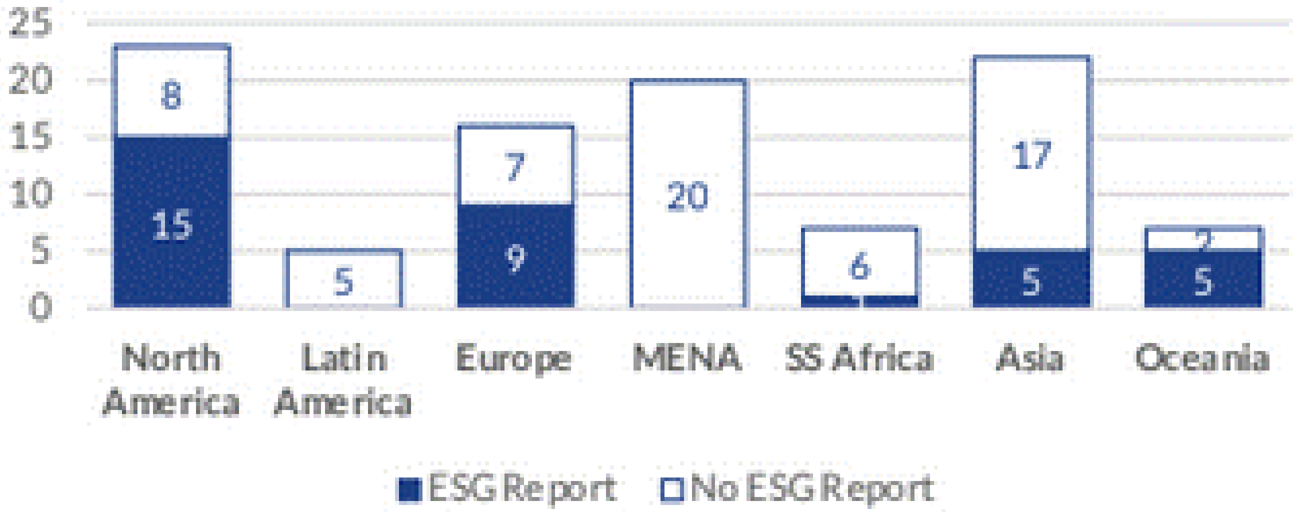
Also, in 2005, the then United Nations Secretary-General Kofi Annan invited a group of the world's largest institutional investors to develop the Principles for Responsible Investment (PRI). A few months later, the initiative was launched by 63 signatories managing US$ 6.5 trillion, including 11 of Global SWF's Top 100: Canada's BCI, CDPQ and CPP, France's FRR, Ireland's ISIF, Netherlands PFZW (PGGM), New Zealand's NZ Super, Norway's GPF (NBIM), Sweden's AP2, and US' CalPERS and UNJSPF. Today, the number has risen to 36.

The number of PRI members has increased significantly to 3,575 investors managing US$ 103.4 trillion as of 2020. Signing up entails committing to incorporating ESG factors into the investment decision process and into ownership policies and practices.

Figure 29. Top 100 Funds with ESG Report

In addition, since 2015, the objectives are measured by a set of 17 interlinked Sustainable Development Goals (SDGs) that "help investors align their responsible investment practices with the broader sustainable objectives of society". The SDGs replaced the Millennium Development Goals (MDGs) and are intended to be achieved by year 2030, in what is known as Agenda 2030.

Figure 29. Top 100 Funds with ESG Report

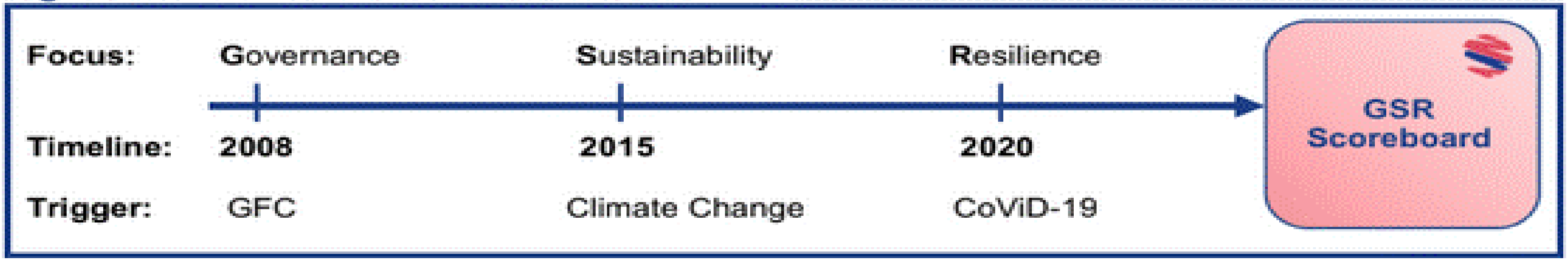


Today, institutional investors including SOIs use terms such as "Responsible Investing", "Sustainability", "ESG" and "SDG" interchangeably, although they all have subtle differences that need to be understood as the industry grows in both size and importance. COVID-19, for instance, has been a trigger for many conversations around preventing and preparing for the next market shock, and around sustainability as means of securing resilience. But what is the relationship between Governance, Sustainability and Resilience?

Governance as a stand-alone concept has been examined closely since the early 2000s. DP World's blocked takeover of certain US ports in 2006 and the GFC pushed the agenda, paving the way for the Generally Accepted Principles and Practices (GAPPs, or Santiago Principles), under the patronage of the IMF. However, the 24 voluntary standards for investment practices, governance and accountability have not changed since 2008 and supporting members are now effectively under a self-regulation regime via the IFSWF.

If Governance has been pursued by SOIs since 2008, and Sustainability since 2015, we could say that Resilience is going to be a topic of conversation at every Board meeting of institutional investors from 2020. Despite taking a long-term view, these investors have grown in sophistication and they often seek to ensure that their rising costs are justified by the ability to outperform the markets or taking the hit better than others. "R" can be viewed as a function of "G" and "S": only the most robust and responsible SOIs will be able to survive.

Figure 30. Rationale and Timeline of GSR Scoreboard



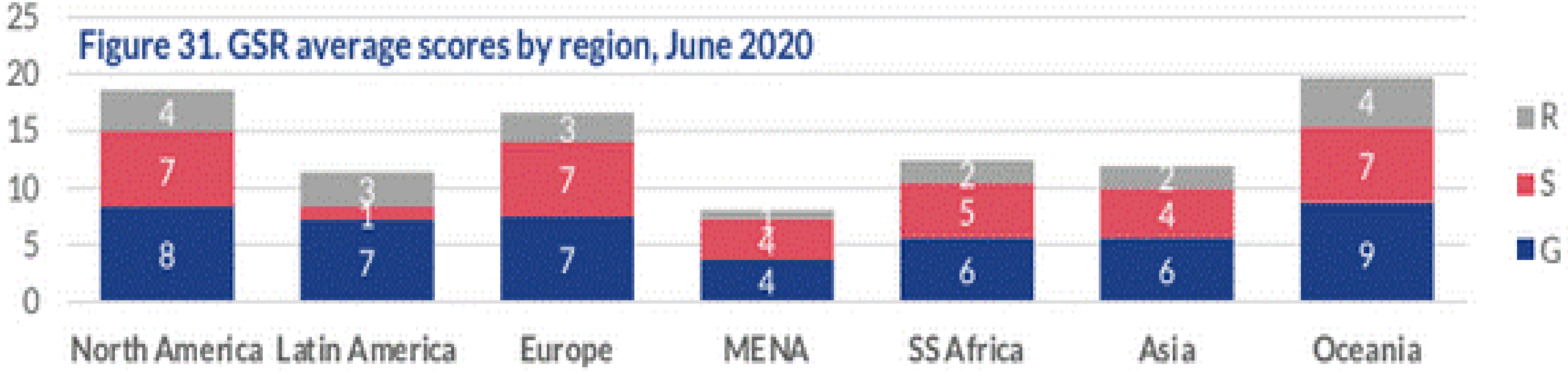
The combination of these three elements in the GSR Scoreboard serves as a reality check for asset owners to measure and improve performance and enables asset managers to stay informed of important aspects of their stakeholders' operations. It is comprised of 25 different elements that are answered binarily with equal weight and the results are then converted into a percentage scale for each of the funds. The study is applied to Global SWF's Top100 and repeated annually. For a list of GSR elements, please refer to Appendix 2.

We performed our latest assessment in June 2020, rating 25 elements for the Top 100 Funds (2,500 data points). Only one fund achieved a perfect score: Australia's Future Fund. Despite keeping a low key when compared to Norway's NBIM and to NZ Super Fund, we believe the Australian is an exemplary fund when it comes to GSR issues. This fact, along with a sound investment strategy, has historically yielded excellent results and allowed Future Fund to make money for the nation's citizenry in both rising and falling markets.

Following those three SWFs are six PPFs (three from Europe and three from North America) that also perform very well – Denmark's ATP and PensionDanmark, Sweden's AP-Fonden, Canada's CDPQ and the US's CalSTRS and NYSCRF – along with Singapore's Temasek. Not surprisingly, Middle Eastern funds rank much lower with only Abu Dhabi-based Mubadala (72%) and ADIA (52%), and Dammam-based APICORP (68%) scoring 50% or more. The other 18 funds from the region perform poorly, especially around Resilience.

Resilience is an issue of mounting concern and institutional investors still have a lot of work to do when it comes to legitimacy, discipline, spending control, strategic asset allocation and crisis management. We might see several Government capital calls, liquidity struggles and some merger even after the COVID-19 pandemic is over. Overall, the Top 100 Funds have had many years to work on Governance (score 6.5/10) but will have to up their game with their Sustainability (score 5.1/10) and Resilience efforts (score 2.4/5). Only time will tell if they start taking these issues seriously and continue to advance as leading investors. *We will be watching.*

Figure 31. GSR average scores by region, June 2020



On November 12 and 20, membership organizations IFSWF and OPSWF organized their 12th and 3rd annual forums respectively, updating on progress made by existing members and welcoming several new funds. The former has lost momentum in the past few years, with founding members NBIM and Chile leaving the club, while the latter's entry requirements are unclear as only a third of its members are signatories of PRI's SDGs.

We have used our GSR Scoreboard to quantify the Governance and Sustainability of the various membership organizations. As highlighted below, the average of the "G-score" of IFSWF's 40 members is 5.9, while the average of the 60 non-members (including PPFs) is 6.9. The score of certain founding members incl. KIA, LIA, NDFI, OIA and QIA is disappointing (1-4 out of 10) and some do not even publish an annual report yet. Endorsing the Santiago Principles is neither necessary nor sufficient for a SWF to be legitimate and transparent.

As per Sustainability, the initial members of OPSWF are an extreme mix, with NBIM and NZ Super driving average scores up. Half of the current members do not pass our "S-score" and the average is just in line with that of our Top 100. Other clubs such as ILN and SDI, which are PPF-driven, and PRI, which has more stringent conditions to join and to report activities on an annual basis, present much better average scores.

If *greenwashing* is the term for conveying a false impression about a company's environment efforts, we should also go beyond any membership or endorsement to assess and quantify the efforts of a SOI to be a responsible investor. There is certainly still much work to do on Governance, Sustainability and Resilience aspects, and we look forward to revisiting our GSR scores and seeing the progress done by the summer of 2021.

Table 9. IFSWF Members

Fund	Country	G	GSR
ADIA	**UAE – AD**	**6**	**52%**
Agaciro	Rwanda	8	56%
Alaska PFC	**USA – AK**	**9**	**68%**
Bpifrance	France	6	40%
CDP Equity	Italy	7	52%
CIC	**China**	**9**	**60%**
COFIDES	Spain	8	68%
FAP	Panama	8	56%
FHF *	Mongolia	0	0%
FEIP	**Mexico**	**7**	**40%**
FONSIS	Senegal	6	48%
FSDEA	Angola	2	24%
Future Fund	**Australia**	**10**	**100%**
GIC	**Singapore**	**5**	**60%**
ISIF (NPRF)	**Ireland**	**8**	**80%**
Ithmar	Morocco	2	20%
Khazanah	Malaysia	4	48%
KIA	**Kuwait**	**4**	**36%**
KIC	**South Korea**	**9**	**60%**
LIA	**Libya**	**1**	**4%**
Mubadala	UAE – AD	8	72%
Nauru TF	Nauru	8	64%
NBK (NIC)	Kazakhstan	3	12%
NDFI	**Iran**	**3**	**20%**
NIF *	Cyprus	1	4%
NIIF *	India	6	44%
NRF *	Guyana	3	20%
NSIA	Nigeria	9	80%
NZ Super	**New Zealand**	**10**	**96%**
OIA (SGRF)	**Oman**	**4**	**40%**
Palestine	Palestine	7	48%
Pula Fund	**Botswana**	**6**	**40%**
QIA	**Qatar**	**4**	**32%**
RDIF	Russia	6	48%
Samruk	Kazakhstan	7	56%
SOFAZ	**Azerbaijan**	**9**	**52%**
T&T HSF	**T&T**	**8**	**48%**
TL PF	**Timor Leste**	**8**	**60%**
TSFE *	Egypt	2	20%
TVF	Turkey	6	48%
Total	**40 members**	**5.9**	**47%**
Average	**60 non-members**	**6.9**	**62%**

** associate member* *bold: founding member*

Table 10. OPSWF Members

Fund	Country	S	GSR
ADIA	**UAE – AD**	**3**	**52%**
Bpifrance	France	4	40%
CDP Equity	Italy	5	52%
COFIDES	Spain	8	68%
FONSIS	Senegal	5	48%
ISIF	Ireland	10	80%
KIA	**Kuwait**	**4**	**36%**
KIC	South Korea	3	60%
Mubadala	UAE – AD	6	72%
NBIM	**Norway**	**10**	**96%**
NBK (NIC)	Kazakhstan	0	12%
NIIF	India	5	44%
NZ Super	**New Zealand**	**9**	**96%**
PIF	**Saudi Arabia**	**4**	**28%**
QIA	**Qatar**	**3**	**32%**
Total	**15 members**	**5.3**	**54%**
Average	**85 non-members**	**5.1**	**56%**

bold: founding member

Table 11. Investor Leadership Network Members

Fund	Country	S	GSR
AIMCo	Canada – AB	8	84%
APG	Netherlands	10	88%
CalPERS	USA – CA	9	84%
CDPQ	Canada – QC	10	92%
CPP	Canada	8	88%
OMERS	Canada – ON	7	80%
OPTrust	Canada – ON	8	84%
OTPP	Canada – ON	8	84%
PGGM	Netherlands	9	84%
PSP	Canada	9	88%
Total	**10 members**	**8.6**	**86%**
Average	**90 non-members**	**4.7**	**53%**

Table 12. Sustainable Develop. Initiative Members

Fund	Country	S	GSR
APG	Netherlands	10	88%
AusSuper	Australia	9	88%
BCI	Canada – BC	10	88%
PGGM	Netherlands	9	84%
Total	**4 members**	**9.5**	**87%**
Average	**96 non-members**	**4.9**	**55%**

Table 13. PRI's SDGs Signatory Members

Fund	Country	S	GSR
AIMCo	Canada – AB	8	84%
AP1-7	Sweden	8	92%
APG	Netherlands	10	88%
ATP	Denmark	8	92%
AusSuper	Australia	9	88%
BCI	Canada – BC	10	88%
Bpifrance	France	4	40%
CalPERS	USA – CA	9	84%
CalSTRS	USA – CA	10	92%
CDP Equity	Italy	5	52%
CDPQ	Canada – QC	10	92%
CPP	Canada	8	88%
FRR	France	7	76%
GPIF	Japan	10	80%
HKMA	China – HK	6	80%
HOOPP	Canada – ON	6	76%
IFC AMC	Global	9	72%
IMCO	Canada – ON	7	68%
ISIF	Ireland	10	80%
Ithmar	Morocco	3	20%
KEVA	Finland	4	64%
Khazanah	Malaysia	6	48%
KWAP	Malaysia	6	84%
NBIM	Norway	10	96%
NPS	South Korea	7	76%
NZ Super	New Zealand	9	96%
OPTrust	Canada – ON	8	84%
OTPP	Canada – ON	8	84%
PD	Denmark	9	92%
PGGM	Netherlands	9	84%
PIC	South Africa	8	76%
PSP	Canada	9	88%
UNJSPF	Global	8	88%
VER	Finland	6	64%
VFMC	Australia	7	76%
Wafra	Kuwait	4	32%
WB PF	Global	2	12%
Total	**37 members**	**7.5**	**75%**
Average	**63 non-members**	**3.7**	**45%**

As highlighted in *Section 4* of this report, the SOI industry has grown significantly in size, maturity and heterogeneity in the past 12 years, and we now need to pay attention to four additional aspects especially:

10.1. Mandate / Mission (SWFs)

The first few months of 2020 caused a general chaos in public finances across the world. Economic activity suddenly halted, and countries started asking themselves if they had enough savings to survive: Don't we have a SWF that is supposed to help with this kind of situation? And if we don't, shouldn't we have one?

More interestingly, those countries with different investment and strategic vehicles started looking at what sort of assistance these could be bringing to the table. And this is where the taxonomy of SWFs (*see page 7*) becomes important. Stabilization funds are mandated to take the hit, i.e., to be an umbrella for those "rainy days" so they were used immediately to fund rescue packages. Savings funds were initially left, but some countries had little choice, and investors like NBIM and GIC suffered the largest withdrawals in their history.

However, development funds were left intact. They are initially not responsible for deficits and were free from any withdrawal (except for Angola's FSDEA) but were heavily pressured to focus on domestic investments. For some of them such as TSFE and TVF this came naturally as they are devoted entirely to domestic investments, but some others such as Temasek and PIF had to help with the heavy lifting at home, too.

+ LIQUIDITY / ACCOUNTABILITY -

Table 14. Hierarchy of funds for Government capital calls

Country	Central Bank (*pocket money **)	Stabilization Fund (*current account **)	Savings Fund (*savings account **)	Development Fund (*the house **)
Azerbaijan	CBAR	SOFAZ	-	-
Bahrain	CBB	-	FGRF	Mumtalakat
Botswana	BoB	Pula Fund	-	-
Chile	BCC	ESSF	PRF	-
China	PBoC	SAFE	CIC Int/Cap	Huijin, CADF, SRF
Ghana	BoG	GSF	GHF	GIIF, MIIF
Hong Kong	HKMA	HKMA EF	HKFF	-
Kazakhstan	NBK	NFRK/NOF	NIC, SK-FGF	SK, Baiterek
Kuwait	CBK	KIA-GRF	KIA-FGF, Wafra	GIC
Malaysia	Bank Negara	-	KWAN/NTF	Khazanah
Malta	CBM	-	MGI	NDSF
Mexico	Banxico	FEIP	FMP	-
Mongolia	Mongol Bank	FSF	FHF	EMGL
Nigeria	CBN	NSIA-SF	NSIA-FGF	NSIA-NIF, Bayelsa
Norway	Norges Bank	-	GPFG-NBIM	GPFN-Folketrygdfondet
Oman	CBO	-	OIA	OIA, OQ
Panama	- (BNP)	FAP	FAP	-
Qatar	QCB	-	QIA-QH	QIA-QI
Russia	BoR	RF (depleted), NWF	NWF	RDIF
Saudi Arabia	SAMA	SAMA	Sanabil, PIF Int	PIF KSA
Singapore	MAS	-	GIC	Temasek
South Korea	BoK	-	KIC	-
T&T	CBTT	HSF	HSF	-
UAE - AD	AD DoF	-	ADIA	Mubadala, ADQ
UAE - D	D DoF	-	-	ICD, DH, DW
USA – Texas	Comptroller	ESF	PSF	-

** To explain the withdrawal process in an overly simplistic manner, we could think of a Central Bank as your pocket money, of a Stabilization fund as your current account, of a Savings fund as your savings account and of a Development fund as your house. If your father (Ministry of Finance) asks you for some money for the household, you start with your pocket money. If it is not enough, you go to your current account – and even to your savings account. Selling the house should be your last resort.*

10.2. Capital Structure (SWFs)

When the SWF term was coined in 2005, the industry was mostly comprised of Government vehicles that invested in bonds, stocks and LPs abroad, as they were not allowed to do so domestically. Much has changed since then, including the establishment of no less than 50 Development Funds. SDFs seek financial returns but also the development of the local economy, and they can serve as guarantee of bond issuances and catalyze FDI from foreign partners – which has become especially handy since the start of the pandemic.

In September, Dubai's ICD sold a US$ 2 billion bond, six years after its first issuance in 2014. And it is a win-win: the country uses the stakes held by the SWF as collateral and alleviates some of the debt at national level, and the fund is rated at the Sovereign ceiling level, scoring some points for any potential partnership. However, and like everything related to debt, it works well until it doesn't. The ramifications of Malaysia's 1MDB are still unfolding, after it raised US$ 3.5 billion in state-guaranteed bonds and US$ 1 billion from IPIC.

Earlier this year, Mubadala had sold US$ 4 billion in three-tranche bonds. The Abu Dhabi fund has also been raising equity via Mubadala Capital, its fully owned GP that manages US$ 8 billion of owned and third-party capital through three different PE funds. Other SWF-sponsored GPs include India's NIIF and Nigeria's NSIA-NIF. Several other development funds are raising equity for their countries as a way of facilitating further FDI, in coordination (or not) with the national Investment Promotion Agencies ("IPAs").

In November, Indonesia's new SWF NIA (supposedly an LP) started an aggressive fundraising campaign that included approaches to Blackstone and Carlyle (supposedly GPs). We expect the lines between GPs and LPs to become increasingly blurry and expect a number of hybrid vehicles to emerge in the years to come.

The mechanisms to not only use but also source capital are now vast, and there must be continuous dialogue among a country's various stakeholders and vehicles. Proper governance and agenda coordination will foster a successful stream of wealth being diversified overseas, as well as quality assets bringing capital home.

Table 15. SWFs raising debt and equity

	S&P / Fitch	Moody's	SWF-hosting Country	SWF Raising Debt	SWF Raising Equity*
Investment Grade	AAA	Aaa	Norway, Singapore, Australia	Temasek	-
	AA+	Aa1	USA, HK, Macao	-	MIDL
	AA	Aa2	Abu Dhabi, Korea, NZ, France	Mubadala	Mubadala, Bpifrance
	AA−	Aa3	Kuwait, Qatar, UAE	-	-
	A+	A1	China, Japan, Ireland	CIC-Huijin	SVF**, ISIF
	A	A2	Saudi Arabia	PIF	-
	A−	A3	Malaysia, Spain	Khazanah, 1MDB†	COFIDES, 1MDB†
	BBB+	Baa1	Botswana, Panama	-	-
	BBB	Baa2	Indonesia, Mexico	-	NIA
	BBB−	Baa3	KZ, Morocco, Russia, India, Italy	Samruk-Kazyna	Ithmar, RDIF, NIIF, CDP Eq
High Yield	BB+	Ba1	Azerbaijan, Georgia	-	GPF
	BB	Ba2	Vietnam, Greece	-	SCIC, HCAP
	BB−	Ba3	Turkey, Oman, Uzbekistan	TVF	TVF, OIA, UFRD
	B+	B1	Bahrain, Rwanda, Senegal	Mumtalakat	Agaciro, FONSIS
	B	B2	Egypt, Gabon, Tunisia, Mongolia	-	TSFE, FGIS, CDC
	B−	B3	Nigeria	NSIA	NSIA
	CCC	Caa	Angola, Mozambique	-	FSDEA
	D	C	Argentina, Venezuela	-	-
	Not rated		Dubai, Djibouti, Palestine	ICD	FSD, PIF.PS

*In the form of FDI, JV or LP ** Asset manager backed by SWF capital † Defunct

10.3. Investment Focus (SWFs & PPFs)

Gone are the days where SWFs were defined as Government-owned vehicles investing their capital overseas. Today the industry is much more complex, with mixed forms of legal structure, ownership and investment focus. Global SWF's exhaustive research into the current portfolio of State-Owned Investors (SWFs & PPFs) has identified the percentage split between domestic and foreign assets and positions.

The world's Top 10 SOIs redeploy on average a third of their resources into their hosting economy. Some are forbidden from investing domestically, e.g., NBIM, ADIA and GIC, which ensures they focus exclusively on overseas markets while their "sister funds" (Folketrygdfondet, Mubadala and Temasek, respectively) support the local economy. This is not the case with GPIF and NPS, which continue to focus heavily on Japanese and Korean bonds and stocks; with CIC and SAFE, which hold significant stakes in large Chinese SOEs; and to a lesser extent, with APG, HKMA and KIA, which hold minor domestic interests.

Beyond the Top 10, we find significant differences between PIF (80% in KSA), QIA (29% in Qatar), Future Fund (20% in Australia) and the Canadian PPFs (33% in Canada on average).

Table 16. Domestic % of Top SOIs

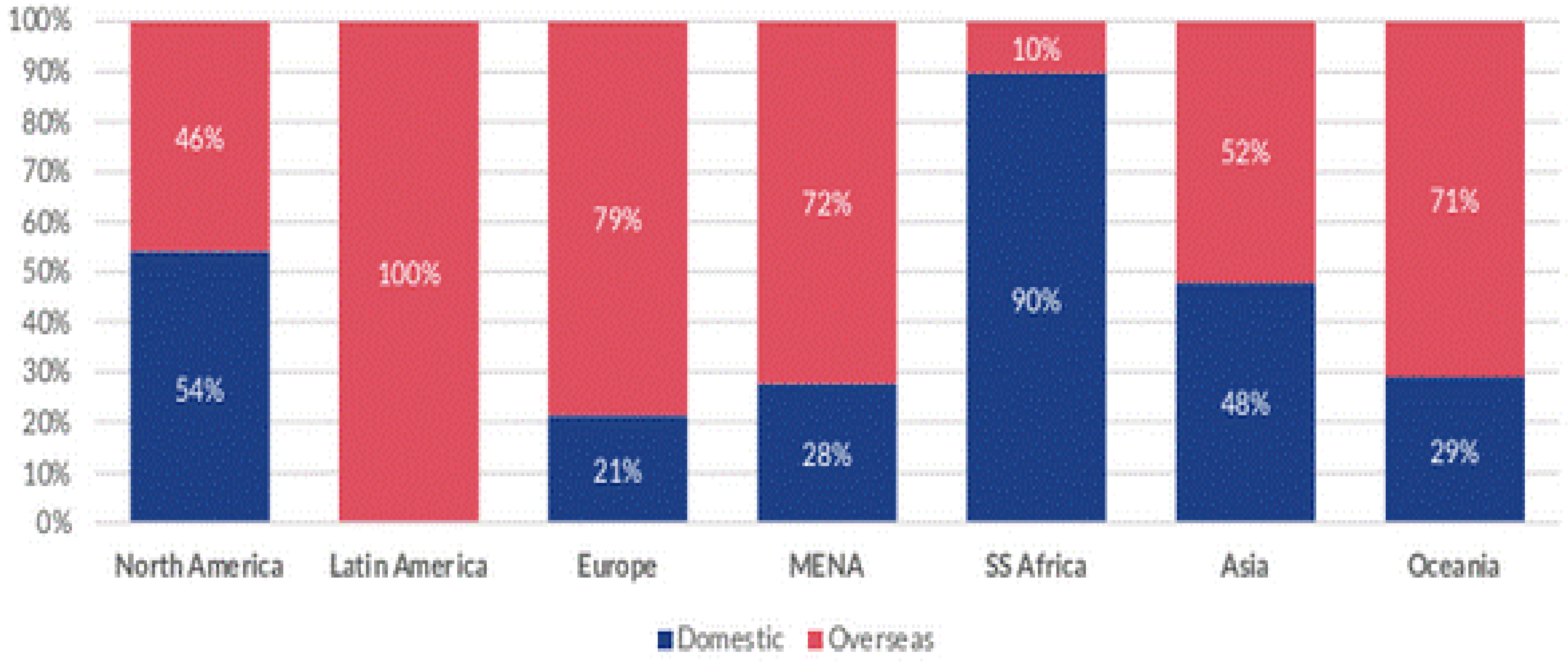
Fund	AuM $b	Domestic %
GPIF	1,491	51%
NBIM	1,076	0%
CIC	1,046	67%
SAFE IC	743	74%
ADIA	726	0%
NPS	663	70%
APG	603	6%
KIA	559	5%
HKMA EF	541	13%
GIC	488	0%
Top 10	**7,936**	**33%**

If we look at the year of the inception of the SOIs, the proportion of domestic assets held by funds created before 2000 is relatively low with an average of 34%. The allocation is far higher at 52% among funds set up after 2000 due to the prevalence of SDFs, which focus on domestic infrastructure and other industries.

As per their taxonomy, our analysis highlights the geographical mix of SOIs according to their mandate. While savings funds and stabilization funds are normally more interested in overseas markets (80% and 62% on average, respectively), development funds invest heavily in the country of origin (61%). Interestingly, public pension funds present a balanced portfolio (50%).

Lastly, we find interesting results when we look at the domestic portfolios of the funds according to their region of origin. European, Middle Eastern and Oceanian funds prefer overseas investments, while Asian and North American funds are more balanced. Interestingly, the extreme cases are in Latin America (all overseas) and in Sub-Saharan Africa (mostly domestic), which are regions that have less capital but that may see more funds being established in the next few years.

Figure 32. % of Domestic Portfolios of SWFs & PPFs



10.4. Organizational Structure (SWFs & PPFs)

Global SWF estimates that the Top 100 SOIs employ about 45,000 people that manage an aggregate of US$ 15.5 trillion in assets, i.e., an average of US$ 340 million per staff. But this ratio is highly variable among all funds, according to their mandate, liquidity, risk profile – and structure. Some like GPIF rely heavily on external managers for an almost fully liquid portfolio, with a ratio of US$ 11 billion / staff. Others like NZ Super have built strong internal teams despite a 78% liquid portfolio and a single office, with a ratio of US$ 0.2 billion / staff. In the span of four years, PIF managed to attract top talent to Riyadh and grew its staff count from 40 to 1,000.

Another key difference among SOIs is the willingness, or lack thereof, to open satellite offices. The representative offices have grown from 70 in 2015 to 148 today, with a significant presence in London (23 offices), NYC (20 offices) and Beijing (13), and with a tenth of all SOI staff located away from the funds' HQs. The "Singaporean model" of opening offices everywhere with local people (Temasek, 14 offices; GIC, 10 offices) has been followed by some of the Canadian PPFs (CDPQ, 11 offices; OMERS, 11 offices; CPP, 9 offices). Some of the Middle Eastern funds are still behind, such as ADIA which has no significant office outside of Abu Dhabi, and so are other funds operating from remote locations such as Alaska PFC, BCI, Future Fund, NZ Super and PGGM.

Canada's BCI is an interesting case. The fund has chosen not to open any office overseas and has all of its 550 staff based out of Victoria, presenting one of the highest ratios of AuM/staff among Canadian PPFs. However, it collaborates with AustralianSuper and OMERS in personnel exchange and it uses external parties to manage a 40% illiquid portfolio. In its annual report, BCI sheds light on its rationale by breaking down the costs of its internal employees (*15 cents per $100 managed*) vs external managers (*64 cents per $100 managed*).

In fact, SOIs can no longer be referred to as "dumb money", nor can they be tricked by banks or asset managers into trades they do not fully understand (*see LIA vs Goldman*). In the past 12 years, most of them have become sophisticated institutional investors that rigorously examine strategy, allocation and risk.

In the next few years, we expect (i) an increase in the allocation to private markets; (ii) a rising willingness to insource talent and to manage the portfolios actively; and (iii) a refocus on Asia and other emerging markets as the economy recovers. These three factors will increase both headcount and the number of offices. However, SWFs and PPFs must be careful to ensure they grow in a sustainable manner, as their success will be ultimately measured not only on investment returns are but also on cost-efficiency.

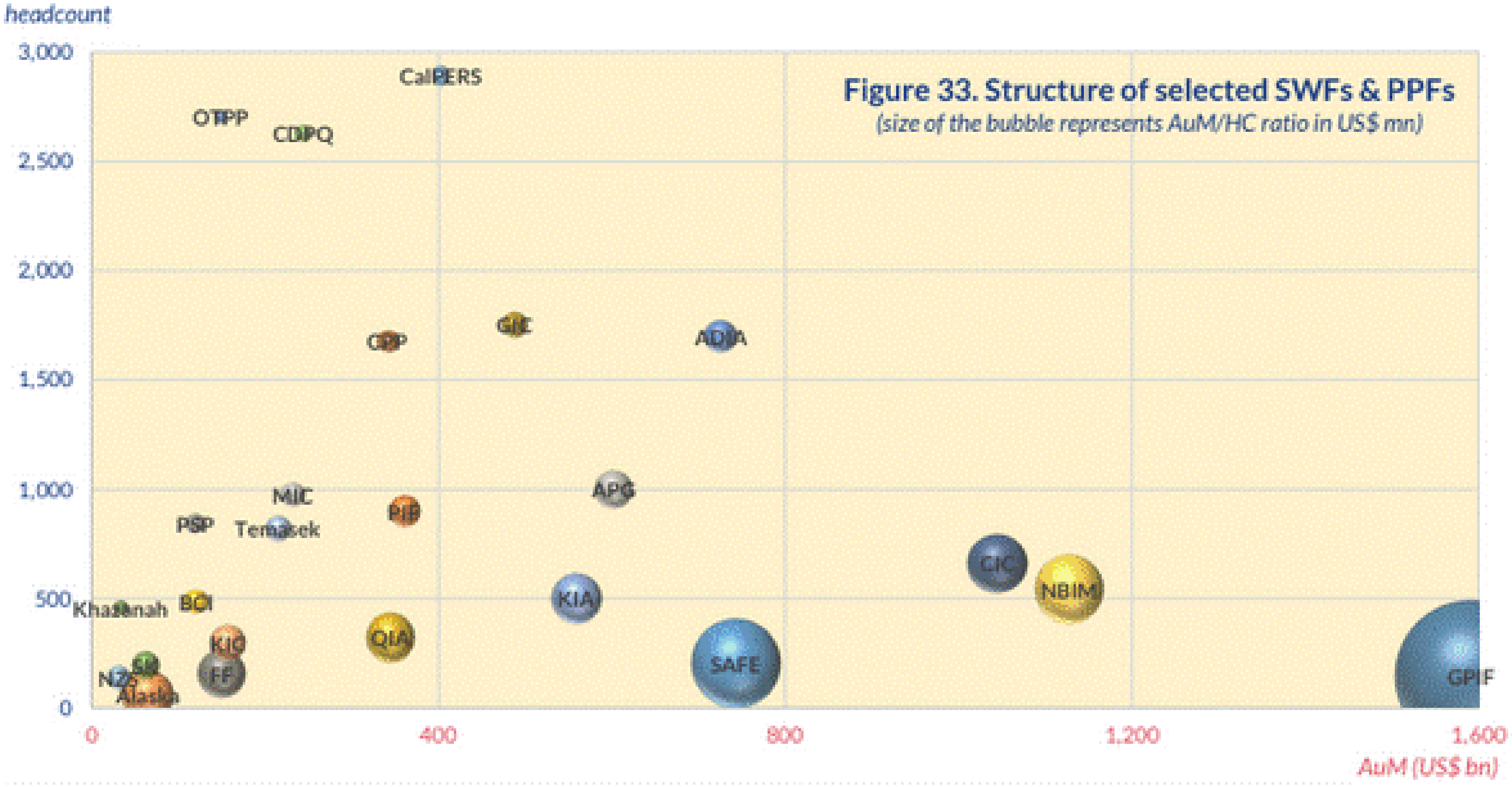


Figure 33. Structure of selected SWFs & PPFs
(size of the bubble represents AuM/HC ratio in US$ mn)
headcount
3,000
2,500
2,000
1,500
1,000
500
0
0
400
800
1,200
1,600
AuM (US$ bn)
CalPERS
OTPP
CDPQ
CPP
GIC
ADIA
MIC
PSP
Temasek
PIF
APG
CIC
NBIM
KIA
Khazanah
BCI
KIC
QIA
SAFE
GPIF
FF
Alaska

The SOI industry is hard to predict due to economics and financial markets as well as geopolitics. However, we have attempted to project the assets under management and to understand some of the key trends and factors that will shape the industry in the next 10 years.

Some of the largest funds incl. NBIM, PIF, APG, GPIF, NPS and CPP have been bold enough to project their balance sheets to 2025, 2030, 2050 or even 2110 (GPIF is seeking to peak at US$ 4.6 trillion in year 2074). For the rest, we have relied on the average growth between 2008-2020 or on our own estimates.

The forecast model produces a stunning result: in the next ten years, SWFs will grow from US$ 9.1 trillion to US$ 15.8 trillion, and PPFs will rise at an even faster rate from US18.4 trillion to US$ 34.2 trillion. Altogether, the SOI sector is set to exceed **US$ 50 trillion** within a decade. This figure only considers the injections of capital and investment returns of existing players. We predict that there will be at least 500 SOIs by 2030 and some of them (*see next page*), if established, can also fuel growth and move the needle significantly.

Table 17. The Crystal Ball – SOIs AuM in 2030 (US$ billion)

#	Fund	2020	CAGR	2030	Source
1	NBIM	1,128	6.1%	**2,045**	National Budget 2020
2	PIF	360	18.7%	**2,000**	Fund's Announcement
3	APG	603	12.7%	**2,000**	Fund's Announcement
4	GPIF	1,592	1.6%	**1,866**	FY20 Annual Report
5	CIC	1,046	5.5%	**1,786**	Global SWF estimate
6	NPS	663	8.0%	**1,428**	Fund's Announcement
7	HKMA	540	8.6%	**1,229**	CAGR 2008-2020
8	SAFE	743	4.0%	**1,100**	Global SWF estimate
9	ADIA	726	3.6%	**1,033**	CAGR 2008-2020
10	NSSF	376	10.0%	**976**	Global SWF estimate
11	GIC	488	4.6%	**768**	CAGR 2008-2020
12	CPP	341	7.4%	**694**	2020 Annual Report
13	CalPERS	403	4.5%	**628**	CAGR 2008-2020
14	PGGM	282	7.6%	**585**	CAGR 2008-2020
15	QIA	345	5.0%	**562**	Global SWF estimate
16	CDPQ	244	8.4%	**545**	CAGR 2008-2020
17	ICD	305	5.0%	**497**	Global SWF estimate
18	Mubadala	232	7.0%	**457**	Global SWF estimate
19	KIA	559	-3.0%	**412**	Global SWF estimate
20	AP1-7	238	5.3%	**399**	CAGR 2008-2020
21	Future Fund	150	10.0%	**389**	Global SWF estimate
22	Temasek	215	6.1%	**388**	CAGR 2008-2020
23	CalSTRS	258	3.9%	**379**	CAGR 2008-2020
24	KIC	157	8.0%	**339**	Global SWF estimate
25	SAMA	448	-3.0%	**330**	Global SWF estimate
	Top 25	12,441	6.3%	**22,834**	
	SWFs	9,072	5.7%	**15,789**	
	PPFs	18,432	6.4%	**34,220**	
	Total SOIs	27,504	6.2%	**50,008**	

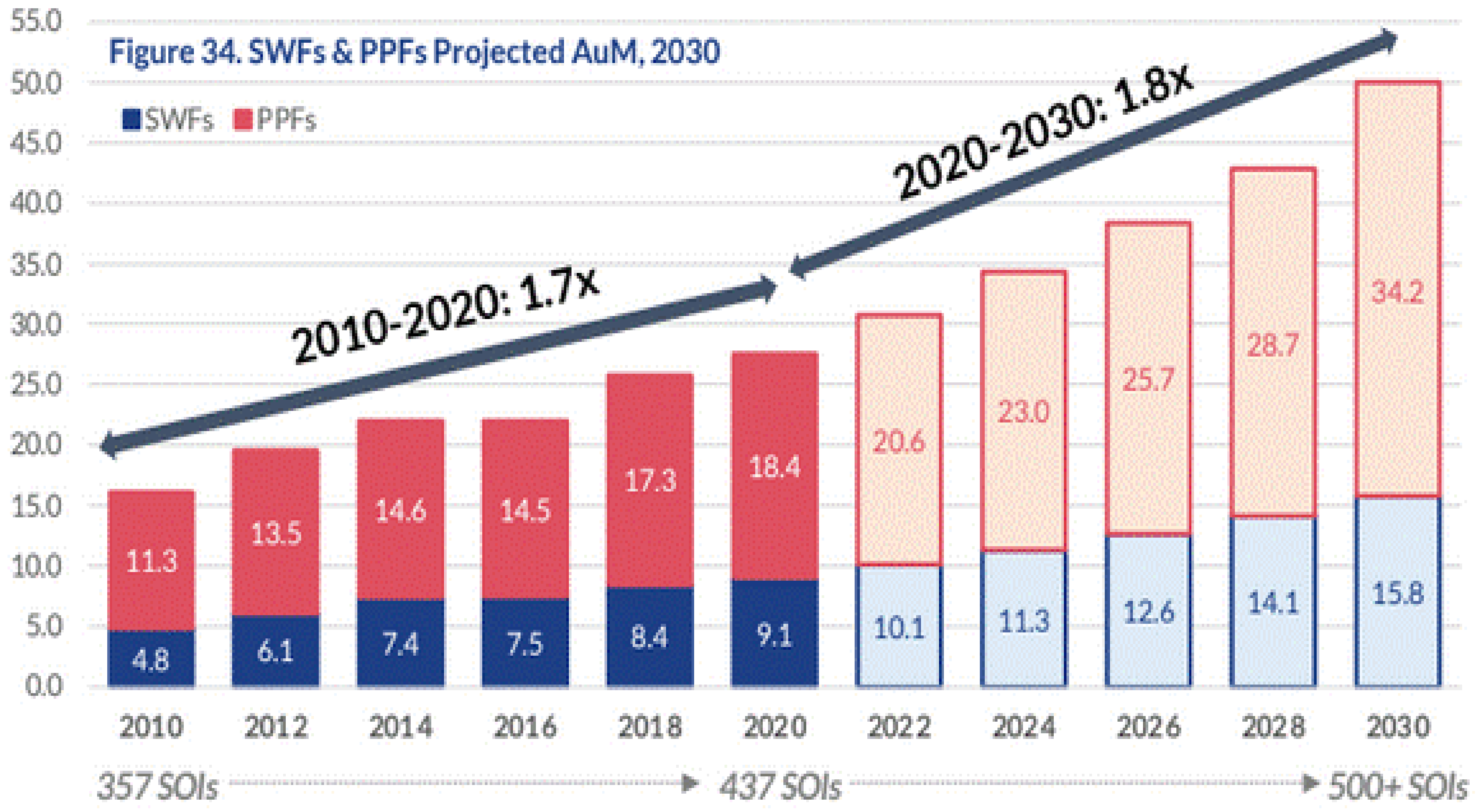


Figure 34. SWFs & PPFs Projected AuM, 2030
SWFs
PPFs
55.0
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2010-2020: 1.7x
2020-2030: 1.8x
11.3
4.8
13.5
6.1
14.6
7.4
14.5
7.5
17.3
8.4
18.4
9.1
20.6
10.1
23.0
11.3
25.7
12.6
28.7
14.1
34.2
15.8
2010
2012
2014
2016
2018
2020
2022
2024
2026
2028
2030
357 SOIs
437 SOIs
500+ SOIs

During the next ten years, we expect to see a number of new Sovereign Wealth Funds being established out of three different situations:

- **Excess (commodities):** The share of resource-sourced SWFs is decreasing rapidly, from 57% today. However, there could be new additions coming from Mozambique (gas), Congo (coltan) or New Caledonia (nickel).
- **Excess (reserves):** According to IMF projections, only four of the top 10 countries by current account surplus in 2021-2025 have a major SWFs; the rest of them could set one up, including Germany, Japan and Taiwan.
- **Need (development):** We expect the trend of setting "*SWFs without Wealth*" to become even more popular in the near future. Countries likely to consider such a fund include Romania, Bangladesh and South Africa.

Table 18. Surplus in 2021-2025

#	Country	US$ bn	SWF?
1	Germany	1,610	No
2	Japan	858	No
3	China	591	Yes
4	Netherlands	478	No
5	Switzerland	407	No
6	South Korea	368	Yes
7	Taiwan	359	No
8	Italy	340	No
9	Singapore	282	Yes
10	UAE	174	Yes

Source: IMF

Additionally, we may see existing funds keep expanding their offices overseas. SOIs headquartered in remote locations such as Victoria (BCI), Juneau (APFC), Melbourne (Future Fund) or Auckland (NZ Super) may need a second office if they want to keep up with their peers and to pursue collaborations and co-investments. We expect a good number of the additional offices will be located in Asia-Pacific, including India and Australia.

In terms of investment activity, despite the poor returns of illiquid assets in 2020, we expect funds to continue the trend of the past 12 years and keep allocating more capital into alternatives over the next decade. In particular, we believe that Private Equity and Debt will be the most popular choices, with the possibility of SOIs becoming direct lenders. These will be followed by real assets, which will continue to be a key part of the funds' holdings (e.g., CDPQ expects to double its Infrastructure portfolio to US$ 47 billion by 2024). Lastly, Hedge Funds may also get some further SOI funding even if the absorption of the asset class is more limited.

Regardless of the success of the ongoing global vaccine campaign, we expect COVID-19 will cast a long shadow. SOIs will be forced to continue pouring money into their domestic economies, via withdrawals or investments. Governments may have to transfer more *national champions* under their SWFs, utilizing them to guarantee and fundraise more capital at fund level – hence promoting a higher degree of State Capitalism. And with SWFs fundraising equity and debt, the line between LPs and GPs will become increasingly blurry.

We believe geopolitics will play an important role within the context of a multipolar world. 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 US administration will continue to decisively decouple from China, while the exit of the United Kingdom from the European Union on January 1 will influence the balance of power in Europe as a whole. As the global economy recovers, we expect funds to be less protectionist and to put more weight into Asia.

Technology will continue to change the ways we do and see things – and in turn, how investment is conducted. The average transaction size has been decreasing in the past few years due to the pivoting between industries and due to Venture Capital becoming a fundamental part of funds' portfolios. We expect this trend to continue with new dedicated subsidiaries such as Temasek's Vertex Ventures, OMERS Ventures and Mubadala Ventures. In other words, we are convinced that the key trends identified in this report (Private Credit, China & India and Technology) will continue to influence the global investment landscape for the next ten years.

There is no doubt that ESG will also shape SOIs' activities and portfolios, as governments recognize the need for change. The emphasis on the environment may move the needle in terms of investment supply and demand, e.g., if NBIM ends up convincing the Norwegian Parliament to invest in private renewable energy opportunities, others may follow. As funds keep growing, they will struggle to meet the annual deployment targets, and there will be an increasing challenge of sourcing and generating off-the-market deal opportunities.

However, it is not only Sustainability that will be promoted. Governance will need to keep improving if funds start fundraising, and we may soon see a much-needed reform in the industry's framework and regulation. Resilience will also be a crucial topic beyond COVID-19. In that context, we will be pushing hard for our GSR Scoreboard to keep gaining legitimacy and momentum and to become a reference as an assessment tool of SOIs as responsible allocators. We certainly look forward to our next review in summer of 2021. *Stay tuned.*

#	Country	Fund	Est	Mission	AuM ($bn)	AAA	Domestic	GSR
1	Japan	GPIF	2006	Pension	1,592	1%	51%	80
2	Norway	NBIM	1997	Savings	1,128	3%	0%	96
3	China	CIC	2007	Savings*	1,046	29%	67%	60
4	China	SAFE IC	1997	Stabilization***	743	10%	74%	12
5	UAE – AD	ADIA	1967	Savings	726	22%	0%	52
6	South Korea	NPS	1988	Pension	663	12%	70%	76
7	Netherlands	APG	1922	Pension	603	29%	6%	88
8	Kuwait	KIA (GRF+FGF)	1953	Savings*	559	18%	5%	36
9	China – HK	HKMA EF	1993	Stabilization***	540	20%	13%	80
10	Singapore	GIC	1981	Savings	488	20%	0%	60
11	Saudi Arabia	SAMA RA	1952	Stabilization***	448	0%	0%	12
12	USA – CA	CalPERS	1932	Pension	403	20%	75%	84
13	China	NSSF	2000	Pension	376	14%	90%	32
14	Saudi Arabia	PIF	1971	Development	360	60%	80%	28
15	Qatar	QIA (QH+QI)	2005	Savings*	345	41%	29%	32
16	Canada	CPP	1997	Pension	341	48%	16%	88
17	UAE – D	ICD	2006	Development	305	65%	49%	28
18	Netherlands	PGGM	1969	Pension	282	17%	24%	84
19	USA – CA	CalSTRS	1913	Pension	258	32%	67%	92
20	Canada – QC	CDPQ	1965	Pension	244	36%	34%	92
21	Sweden	AP1-7	2001	Pension	238	17%	25%	92
22	UAE – AD	Mubadala	1984	Development	232	63%	47%	72
23	USA – NY	NYSCRF	1983	Pension	226	25%	90%	92
24	Singapore	Temasek	1974	Development	215	44%	24%	92
25	USA – FL	SBA Florida	1943	Pension	213	26%	75%	68
26	Russia	NWF	2008	Stabilization*	174	20%	83%	20
27	South Korea	KIC	2005	Savings	157	15%	0%	60
28	Australia	Future Fund	2006	Savings	150	35%	20%	100
29	Canada – ON	OTPP	1917	Pension	149	52%	42%	84
30	Denmark	ATP	1964	Pension	148	38%	56%	92
31	Australia	AustralianSuper	1999	Pension	125	21%	28%	88
32	Canada – BC	BCI	1999	Pension	121	41%	41%	88
33	Canada	PSP	1999	Pension	120	49%	33%	88
34	South Africa	PIC	2015	Pension**	106	6%	93%	76
35	Japan	SoftBank IA	2017	Savings**	101	86%	0%	20
36	Australia	QIC	1991	Savings**	93	34%	43%	68
37	Canada – AB	AIMCo	1976	Pension	91	29%	34%	84
38	Canada – ON	OMERS	1962	Pension	85	61%	35%	80
39	Global	UNJSPF	1949	Pension	74	14%	55%	88
40	Canada – ON	HOOPP	1960	Pension	72	27%	70%	76
41	Iran	NDFI	2011	Development	68	82%	100%	20
42	Libya	LIA	2006	Savings	67	44%	35%	4
43	USA – AK	Alaska PFC	1976	Savings	65	33%	73%	68
44	UAE	EIA	2007	Development	63	26%	99%	12
45	Kazakhstan	Samruk Kazyna	2008	Development	62	62%	100%	56
46	Finland	KEVA	1988	Pension	60	26%	18%	64
47	Kazakhstan	NBK (NF+NIC)	2000	Stabilization***	57	0%	5%	12
48	China	Silk Road Fund	2014	Development**	54	94%	0%	32
49	Canada – ON	IMCO	2016	Pension	54	40%	48%	68
50	USA – TX	Texas PSF	1854	Savings	48	41%	83%	64

** Dual or three mandates, only main one is reflected   ** Asset Managers with Sovereign capital   *** Central Banks sub-accounts*

#	Country	Fund	Est	Mission	AuM ($bn)	AAA	Domestic	GSR
51	Brunei	BIA	1983	Savings	45	18%	20%	4
52	Azerbaijan	SOFAZ	1999	Stabilization	43	13%	25%	52
53	Australia	VFMC	1994	Savings**	41	30%	54%	76
54	Denmark	PensionDanmark	1993	Pension	40	25%	34%	92
55	France	FRR	2001	Pension	38	5%	40%	76
56	UAE – D	Dubai Holding	2004	Development	35	97%	98%	32
57	Turkey	TVF	2017	Development	34	80%	100%	48
58	France	Bpifrance	2008	Development	33	61%	100%	40
59	Malaysia	Khazanah	1993	Development	33	50%	74%	48
60	Malaysia	KWAP	2007	Pension	33	18%	12%	84
61	New Zealand	NZ Super Fund	2001	Savings	31	22%	13%	96
62	Oman	OIA	1980	Development	31	31%	51%	40
63	Russia	RDIF	2011	Development	31	100%	96%	48
64	Global	WB PF	1948	Pension	30	50%	50%	12
65	USA – NM	New Mexico SIC	1958	Savings	29	29%	80%	44
66	Kuwait	Wafra	1994	Savings**	24	55%	5%	32
67	Finland	VER	1990	Pension	23	10%	28%	64
68	USA – WY	WYO	1974	Savings	22	13%	90%	56
69	Chile	Chile ESSF-PRF	2007	Stabilization*	21	0%	0%	64
70	USA – WV	WVIMB	1997	Savings	21	32%	75%	56
71	Global	AIIB	2016	Development**	20	100%	6%	76
72	Bahrain	Mumtalakat	2006	Development	19	79%	62%	44
73	Timor-Leste	PF	2005	Savings	18	4%	0%	60
74	Canada – ON	OPTrust	1995	Pension	17	61%	28%	84
75	Global	IDB Invest	2017	Development**	14	100%	0%	80
76	UAE – D	Dubai World	2005	Development	13	100%	66%	16
77	Ireland	ISIF	2014	Development	12	35%	100%	80
78	Egypt	TSFE	2018	Development	11	23%	100%	20
79	Global	IFC AMC	2009	Development**	10	100%	0%	72
80	China	CADF	2007	Development	10	41%	0%	40
81	Global	APICORP	1975	Development**	8	64%	9%	68
82	Mexico	FMPED-FEIP	2000	Stabilization*	7	0%	0%	40
83	Trinidad & Tobago	HSF	2000	Stabilization*	6	0%	0%	48
84	Botswana	Pula Fund	1994	Stabilization	5	0%	0%	40
85	Angola	FSDEA	2012	Development	5	22%	93%	24
86	India	NIIF	2015	Development**	4	100%	100%	44
87	Italy	CDP Equity	2011	Development	4	81%	100%	52
88	Nigeria	NSIA	2011	Savings*	2	60%	80%	80
89	Morocco	Ithmar Capital	2011	Development	2	52%	100%	20
90	Panama	FAP	2012	Stabilization*	1	0%	0%	56
91	Vietnam	SCIC	2006	Development	1	3%	100%	24
92	Spain	COFIDES	1988	Development**	1	100%	5%	68
93	Gabon	FGIS	2012	Development	1	100%	100%	24
94	Palestine	Palestine	2003	Development	1	100%	100%	48
95	Cyprus	NIF	2019	Savings	0.8	0%	0%	4
96	Rwanda	Agaciro Fund	2012	Development	0.2	6%	100%	56
97	Mongolia	FHF	2019	Savings	0.1	0%	0%	0
98	Nauru	Trust Fund	2015	Savings	0.1	12%	0%	64
99	Guyana	NRF	2019	Savings	0.1	0%	0%	20
100	Senegal	FONSIS	2012	Development	0.1	100%	100%	48

** Dual or three mandates, only main one is reflected ** Asset Managers with Sovereign capital *** Central Banks sub-accounts*