The Thinking Ahead Institute's Asset Owner 100

The most influential capital on the planet



Thinking Ahead Institute WillisTowers Watson III'I'III

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The Thinking Ahead Institute

Formed in 2015, the Thinking Ahead Institute is a global not-for-profit research and innovation group whose aim is to influence change in the investment world for the benefit of the end saver. The Institute's members comprise asset owners, investment managers and other groups that are similarly motivated. It is an outgrowth of Willis Towers Watson Investments' Thinking Ahead Group and more research is available on its <u>website</u>.

The Thinking Ahead Group research team



Bob Collie



Marisa Hall



Tim Hodgson



Roger Urwin



Liang Yin

Executive summary

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The summary of the numbers

- The Asset Owner 100 is a Thinking Ahead Institute study which gathers data on the total assets of the top 100 asset owners around the world. As a new inclusion in the second year of the study, though not included in the ranking, the study presents data on the total assets for the top 10 insurers.
- Total discretionary assets under management (AUM) of the 100 asset owners included in the ranking amounted to US\$ 19 trillion at the end of 2018, up 1.7% from the end of 2017¹. Median AUM was US\$ 102.9 billion in 2018, down from US\$ 104.0 billion last year¹.
- The top 20 funds total US\$10.55 trillion and represent 55.5% of the assets in the ranking
- APAC remains the largest region in terms of AUM, accounting for 36.1% of all assets in the ranking. EMEA and North America's assets represented 32.3% and 31.6% respectively.
- **Pension funds** continue to dominate the ranking, although experienced a decline of 1.7%, primarily at the expense of the growth in sovereign wealth funds.
- The top 3 largest asset owners remained the same, with The Government Pension Investment Fund (GPIF) of Japan continuing to dominate with US\$1.4 trillion of assets under management

Top 100 assets under management increased by 1.7% over the year

GPIF remained the largest asset owner in the world. The Government Pension Fund of Norway and China Investment Corporation took the other top three spots

Pension funds continue to dominate in North America. This is in contrast to EMEA, and in particular the Middle East, where sovereign wealth funds are dominant

Key industry-wide observations

- Sustainability has become significant on asset owners' ever extending agendas. They
 are tackling impacts, particularly set out against the SDGs; then interpreting the fiduciary
 duty dimension where their identification of loyalty to beneficiaries has to bring in intergenerational equity, whilst balancing traditional risk/return considerations. Data and
 technology is making the management of sustainability more sophisticated but not
 always more precise.
- Structural changes in the asset owner model complicate sustainability in investing. Examples include the de-risking trajectory of DB plans and governance challenges faced by DC plans. We also see a step-change in the focus on sustainability by insurance companies, whilst sovereign wealth funds are still struggling in this area, due to political constraints. Global best practice on sustainability for asset owners is on an upward trajectory, but still has a long-way to go.
- Governance and considerations of culture needs to be improved and has some way to travel with asset owners still being time poor.
- Asset owners are too important to fail in their mission. They carry a massive burden for the wealth and well-being of billions. They have no real choice but to take seriously their financial stakes and real world responsibilities and to lead from the front and address the big issues. We see universal owners as well-placed to play a more influential role in safeguarding the financial system and contributing positively to some of the big societal issues, including climate change and other environmental issues. During 2018 there were a number of sustainability initiatives of universal owner funds that involved 'doing good while doing well'. This marks the start of a movement in which funds support societally beneficial initiatives that are consistent with financially sound fiduciary principles.

Sustainability is presenting big issues for asset owners in both their business models (including fiduciary responsibility) and in investment models

Structural changes in the asset owner model produce a new landscape for investing

Universal owners are largescale, long-term, leadershipminded funds that invest in a hyper-integrated way. They have a borderless incentive to solve borderless problems such as climate change

Key asset owner challenges

Business model:

Purpose, mission and vision need re-setting. This suggests strategy and culture should change. Funds have to build a more coherent view of their core stakeholders and their needs.

Operating model:

Strengthened governance and leadership. The relative influence of asset owners compared with asset managers is set to rise, in part through building bigger teams with stronger leadership, but also through the streamlining of governance particularly in delegations, partners and process.

Impact from evolved regulations. Asset owners will be on the receiving end of further saver/investor protection regulations. What they invest in will also be over-regulated. This is a very mixed picture – some good, lots of bad.

Investment model:

Factors. Private. ESG. Funds have to explore these new opportunities in a market environment where most opportunities do not meet current targets. Factors are developing a bigger profile. Private markets are increasingly significant in the opportunity set. ESG is everywhere.

China. The development of a strong access route and far-sighted strategy to mainland China assets will be critical, in a world that needs to build its understanding of the special factors governing China investment markets. Stakeholder management has become a much bigger task for asset owners to address

Regulation is set to rise as a factor influencing asset owner practice. This is particularly significant in the ESG and stewardship areas

Asset owners face lower expected returns in future. The success with which they meet their targeted returns will be dependent on how well they adapt their investment model to new opportunities

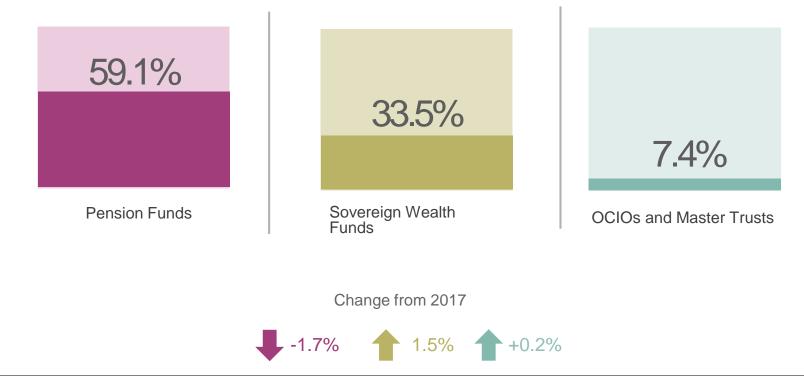
What is an asset owner?

- In our view, an asset owner has five qualifying characteristics:
 - 1. Works directly for a defined group of beneficiaries/savers/investors as the manager of their assets in a fiduciary capacity (upholding loyalty and prudence) under delegated responsibility
 - 2. Works with a sponsoring entity, usually a government, part of government, a company or a not-for-profit
 - 3. Works within explicit law and possesses an implicit societal license to operate because of its societal trust and legitimacy
 - 4. Delivers mission-specific outcomes to beneficiaries and stakeholders in the form of various payments or benefits into the future
 - 5. Employs a business model that combines a governance budget (essentially resources and processes) and a risk budget (reflecting the mix of financial assets that delivers on the mission).
- Pension funds are the single biggest group of asset owners meeting all the qualifying criteria above. Sovereign funds, OCIOs, endowments and foundations also fully qualify. Other institutions, such as insurance companies and mutual fund partly qualify.

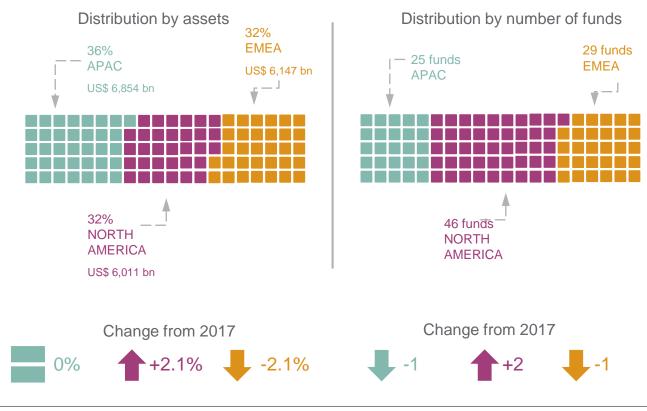
Total value of assets

Total value of fund assets

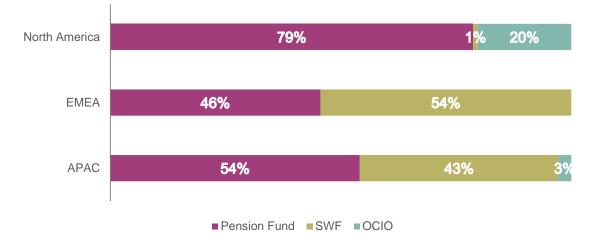
Split by fund type



Assets by region



Total value of fund assets Split by fund type and region



- Pension funds dominated in North America where they represented 79% of assets. Pension funds also dominated in APAC although to a smaller extent with 54%.
- Sovereign Wealth funds accounted for a significant share of the assets in the EMEA region (54%), in particular due to the Middle East sovereign funds.
- OCIO and Master trust assets are shown in the region of their corporate headquarters. We note that all of the OCIOs and Master Trusts have clients globally.

Total value of fund assets Split by fund domicile

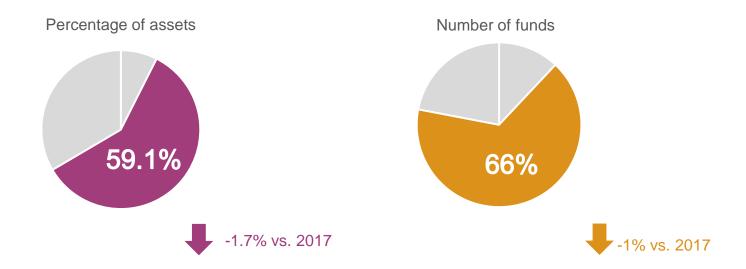


Number of funds per country

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Pension funds

Pension funds



- Pension funds represented 59.1% of the ranking's assets and 66% of the number of funds
- Of the top 20 funds, 50% are pension funds
- The average assets of Pension Funds accounted for US\$170 billion, below the average of US\$190 billion for all funds

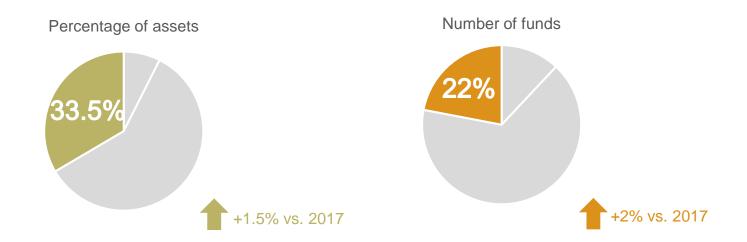
Pension funds

Top 10 Pension Funds (in US\$ million)



Sovereign wealth funds

Sovereign wealth funds



- Sovereign wealth funds (SWFs) represented 33.5% of the ranking's assets and 22% of the number of funds
- Of the top 20 funds, 50% are SWFs.
- The average assets of SWFs accounted for US\$289 billion, well above the average of US\$190 billion for all funds.

Sovereign wealth funds

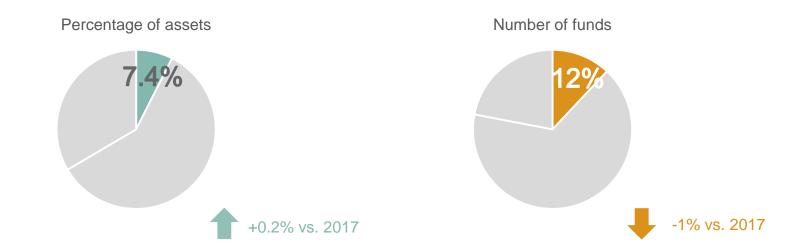
Top 10 Sovereign Wealth Funds (in US\$ million)



\$941,420

OCIOs and Master trusts

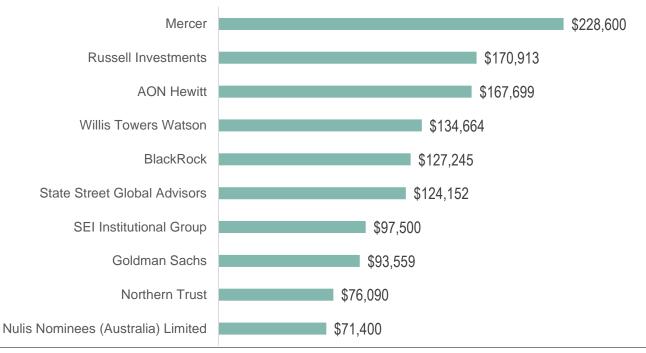
OCIOs and master trusts



- OCIOs and Master Trusts represented 7.4% of the ranking's assets and 12% of the number of funds
- There are no OCIOs and Master Trusts in the top 20 of the ranking
- The average assets of OCIOs and Master Trusts accounted for US\$118 billion which is below the average of US\$190 billion for all funds.

OCIOs and master trusts

Top 10 OCIOs and Master Trusts (in US\$ million)

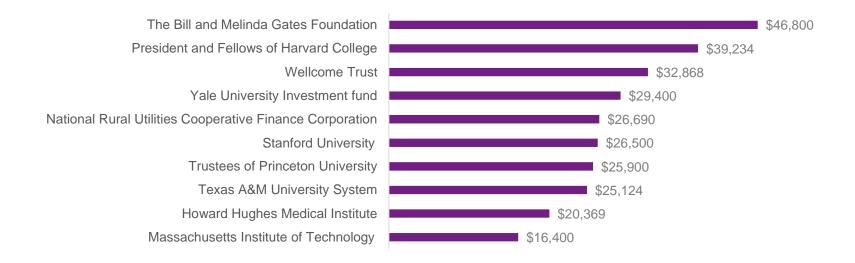


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Foundations and endowments

Foundations and endowments

Top 10 Foundations & Endowments (in US\$ million)

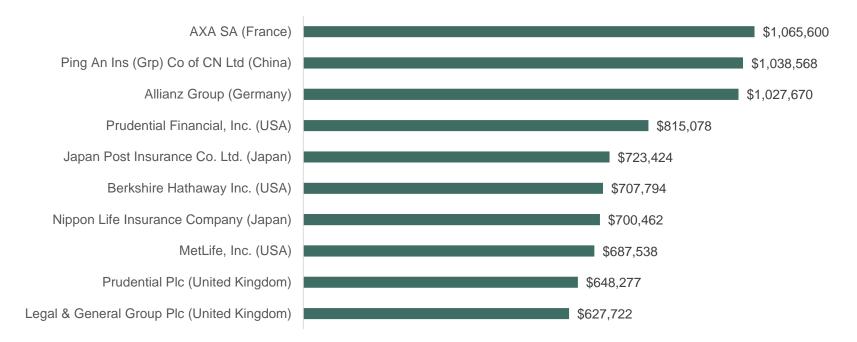


- Foundations and Endowments are an important category of asset owners.
- None of the Foundations and Endowments listed above are large enough to enter the top 100 asset owners.

Insurance companies

Top 10 insurance companies

Total assets managed by top 10 insurers (in US\$ million)



Universal owners

What is a universal owner?

Universal owners are large long-term holders of index-like portfolios that are exposed to the entire market and economy

Universal owners also own a significant slice of corporate externalities which risk being internalised to their funds' net cost, now or in the future

Universal owners are leadership-minded to grow the value and utility of their sponsor/member wealth by managing their long-term risk exposures inter-dependencies across the portfolio, across the stakeholders and over time

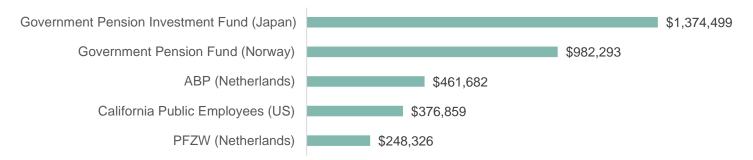
• For a definition of universal owners we use: R Urwin, Pension Funds as Universal Owners; Opportunity Beckons and Leadership Calls | Rotman International Pensions Management Journal | Spring 2011.

"The core idea of a universal owner is a large institution investing long-term in widely diversified holdings across multiple industries and asset classes, and adapting its investment strategy to these circumstances. For universal owners, overall economic performance will influence the future value of their portfolios more than the performance of individual companies or sectors. This suggests that universal owners will support the goals of sustainable growth and well-functioning financial markets. A universal owner will also view these goals holistically and seek ways to reduce the company level externalities that produce economy-wide efficiency losses."

 Relatively few asset owners in this study have held claim to being universal owners (eg GPIF, Norges), while others appear to have a universal mindset. We identify around 5 of the top 20 asset owners in the universal owner category.

Universal owners

Top 5 Universal Owners (in US\$ million)



- Categorisation of universal owners follows from a combination of their characteristics, actions and mind-set and so is hard to draw up a definitive listing.
- The principle is that universal owners have a large and growing portfolio of externalities that risk being internalised to their funds' net cost, now or in the future. Their responses can be to manage the value and utility of their sponsor/member wealth by integrating financial and extra-financial exposures by both within-the-system and change-the-system actions recognising inter-dependence across the portfolio, across stakeholders and across time.
- The challenge for UO's is hyper-integrated risk management which can be carried out in two main areas:
 - allocation of assets where as large investors they will generally work within-the-system
 - stewardship of assets where as universal owners there are change-the-system opportunities.
- These challenges introduce considerable practical difficulties. In practice, most large asset owners currently find factors not to manage their funds in line with universal ownership principles by either not seeing themselves as large enough; not having the long-term orientation; or not having the leadership buy-in to operate this way.

Full AO 100 Ranking

Rank	Manager	Market	Total Assets	Type of fund
1	Government Pension Investment Fund	Japan	\$1,374,499	Pension Fund
2	Government Pension Fund	Norway	\$982,293	Pension Fund
3	China Investment Corporation ¹	China	\$941,420	SWF
4	Abu Dhabi Investment Authority ¹	United Arab Emirates	\$696,660	SWF
5	Kuwait Investment Authority ²	Kuwait	\$592,000	SWF
6	Federal Retirement Thrift	U.S.	\$578,755	Pension Fund
7	National Pension	South Korea	\$573,259	Pension Fund
8	Hong Kong Monetary Authority Investment Portfolio ²	Hong Kong	\$509,353	SWF
9	SAMA Foreign Holdings ²	Saudi Arabia	\$505,755	SWF
10	ABP	Netherlands	\$461,682	Pension Fund
11	SAFE Investment Company ²	China	\$439,837	SWF
12	GIC Private Limited ²	Singapore	\$390,000	SWF
13	California Public Employees	U.S.	\$376,859	Pension Fund
14	Temasek Holdings ²	Singapore	\$374,896	SWF
15	National Social Security	China	\$325,002	Pension Fund
16	Qatar Investment Authority ²	Qatar	\$320,000	SWF
17	Public Investment Fund/Sanabil Investments ²	Saudi Arabia	\$290,000	SWF
18	Canada Pension ²	Canada	\$287,410	Pension Fund
19	Central Provident Fund	Singapore	\$286,963	Pension Fund
20	PFZW ²	Netherlands	\$248,326	Pension Fund
21	Investment Corporation of Dubai ²	United Arab Emirates	\$233,801	SWF
22	California State Teachers	U.S.	\$230,209	Pension Fund
23	Mercer	U.S.	\$228,600	OCIO
24	Mubadala Development Company ³	United Arab Emirates	\$225,000	SWF
25	New York State Common	U.S.	\$213,241	Pension Fund

Note: Data is at 31 December 2018, or latest available dates. See Footnotes.

Rank	Manager	Market	Total Assets	Type of fund
26	Employees Provident Fund	Malaysia	\$201,687	Pension Fund
27	New York City Retirement	U.S.	\$200,805	Pension Fund
28	Local Government Officials	Japan	\$199,522	Pension Fund
29	Florida State Board	U.S.	\$174,721	Pension Fund
30	Russell Investments	U.S.	\$170,913	OCIO
31	AON Hewitt	U.S.	\$167,699	OCIO
32	Texas Teachers	U.S.	\$153,126	Pension Fund
33	Employees' Provident	India	\$145,372	Pension Fund
34	Public Investment Corporation ⁴	South Africa	\$144,206	SWF
35	Ontario Teachers	Canada	\$140,123	Pension Fund
36	Willis Towers Watson ²	U.S.	\$134,664	OCIO
37	Korea Investment Corporation	South Korea	\$131,600	SWF
38	ATP	Denmark	\$129,110	Pension Fund
39	BlackRock	U.S.	\$127,245	OCIO
40	State Street Global Advisors	U.S.	\$124,152	OCIO
41	AT&T	U.S.	\$124,129	Pension Fund
42	Boeing	U.S.	\$123,700	Pension Fund
43	New York State Teachers	U.S.	\$120,088	Pension Fund
44	Wisconsin Investment Board	U.S.	\$114,626	Pension Fund
45	Washington State Board	U.S.	\$112,474	Pension Fund
46	North Carolina	U.S.	\$111,370	Pension Fund
47	Pension Fund Association ²	Japan	\$104,966	Pension Fund
48	Future Fund ²	Australia	\$103,391	SWF
49	IBM	U.S.	\$103,254	Pension Fund
50	Agirc-Arrco	France	\$102,994	Pension Fund
	-			

Note: Data is at 31 December 2018, or latest available dates. See Footnotes.

Rank	Manager	Market	Total Assets	Type of fund
51	Labor Pension Fund	Taiwan	\$102,711	Pension Fund
52	Ohio Public Employees	U.S.	\$100,707	Pension Fund
53	AustralianSuper	Australia	\$99,990	Pension Fund
54	National Federation of Mutual Aid	Japan	\$99,486	Pension Fund
55	SEI Institutional Group	U.S.	\$97,500	OCIO
56	Goldman Sachs	U.S.	\$93,559	OCIO
57	Alecta	Sweden	\$93,362	Pension Fund
58	California University	U.S.	\$93,296	Pension Fund
59	National Development Fund ⁵	Iran	\$91,000	SWF
60	General Motors	U.S.	\$88,527	Pension Fund
61	Bayerische Versorgungskammer ⁶	Germany	\$88,296	Pension Fund
62	Royal Dutch Shell*	Netherlands	\$85,803	Pension Fund
63	Bouwnijverheid	Netherlands	\$85,411	Pension Fund
64	New Jersey	U.S.	\$83,876	Pension Fund
65	Virginia Retirement	U.S.	\$83,876	Pension Fund
66	Metaal/tech. Bedrijven	Netherlands	\$83,371	Pension Fund
67	Alberta Investment Management Corporation	Canada	\$83,002	Pension Fund
68	Michigan Retirement	U.S.	\$81,899	Pension Fund
69	Public Service Pension Plan ⁴	Canada	\$81,459	Pension Fund
70	Oregon Public Employees	U.S.	\$81,269	Pension Fund
71	Universities Superannuation ⁴	U.K.	\$81,115	Pension Fund
72	General Electric	U.S.	\$80,954	Pension Fund
73	Ohio State Teachers	U.S.	\$79,153	Pension Fund
74	Minnesota State Board	U.S.	\$77,631	Pension Fund
75	Georgia Teachers	U.S.	\$77,523	Pension Fund

* Value considered includes global pension funds.

Note: Data is at 31 December 2018, or latest available dates. See Footnotes.

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85National Public ServiceJapan\$68,549Pension Fund86BT Group2U.K.\$68,060Pension Fund87United Parcel ServiceU.S.\$66,244Pension Fund88United Nations Joint StaffU.S.\$65,605Pension Fund89TCorp7Australia\$64,367Pension Fund90BT Funds Management Limited7Australia\$63,669OCIO91First State SuperAustralia\$63,082Pension Fund92Royal Bank of Scotland GroupU.K.\$62,178Pension Fund93Alaska Permanent FundU.S.\$60,400SWF94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	83	Nulis Nominees (Australia) Limited ⁷	Australia	\$71,400	OCIO
86BT Group2U.K.\$68,060Pension Fund87United Parcel ServiceU.S.\$66,244Pension Fund88United Nations Joint StaffU.S.\$65,605Pension Fund89TCorp7Australia\$64,367Pension Fund90BT Funds Management Limited7Australia\$63,669OCIO91First State SuperAustralia\$63,082Pension Fund92Royal Bank of Scotland GroupU.K.\$62,178Pension Fund93Alaska Permanent FundU.S.\$60,400SWF94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	84	Samruk-Kazyna JSC⁵	Kazakhstan	\$71,344	SWF
87United Parcel ServiceU.S.\$66,244Pension Fund88United Nations Joint StaffU.S.\$66,605Pension Fund89TCorp7Australia\$64,367Pension Fund90BT Funds Management Limited7Australia\$63,669OCIO91First State SuperAustralia\$63,082Pension Fund92Royal Bank of Scotland GroupU.K.\$62,178Pension Fund93Alaska Permanent FundU.S.\$60,400SWF94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	85	National Public Service	Japan	\$68,549	Pension Fund
88United Nations Joint StaffU.S.\$65,605Pension Fund89TCorp7Australia\$64,367Pension Fund90BT Funds Management Limited7Australia\$63,669OCIO91First State SuperAustralia\$63,082Pension Fund92Royal Bank of Scotland GroupU.K.\$62,178Pension Fund93Alaska Permanent FundU.S.\$60,400SWF94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	86	BT Group ²	U.K.	\$68,060	Pension Fund
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91First State SuperAustralia\$63,082Pension Fund92Royal Bank of Scotland GroupU.K.\$62,178Pension Fund93Alaska Permanent FundU.S.\$60,400SWF94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	89	TCorp ⁷	Australia	\$64,367	Pension Fund
92Royal Bank of Scotland GroupU.K.\$62,178Pension Fund93Alaska Permanent FundU.S.\$60,400SWF94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	90	BT Funds Management Limited ⁷	Australia	\$63,669	OCIO
93Alaska Permanent FundU.S.\$60,400SWF94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	91	First State Super	Australia	\$63,082	Pension Fund
94Libyan Investment Authority2Libya\$60,000SWF95Brunei Investment Agency2Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	92	Royal Bank of Scotland Group	U.K.	\$62,178	Pension Fund
95Brunei\$60,000SWF96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited?Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	93	Alaska Permanent Fund	U.S.	\$60,400	SWF
96Bank of AmericaU.S.\$59,960Pension Fund97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	94	Libyan Investment Authority ²	Libya	\$60,000	SWF
97Colonial First State Investments Limited7Australia\$58,717OCIO98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	95	Brunei Investment Agency ²	Brunei	\$60,000	SWF
98Tennessee ConsolidatedU.S.\$58,355Pension Fund99National Wealth FundRussia\$58,321SWF	96	Bank of America	U.S.	\$59,960	Pension Fund
99National Wealth FundRussia\$58,321SWF	97	Colonial First State Investments Limited ⁷	Australia	\$58,717	OCIO
	98	Tennessee Consolidated	U.S.	\$58,355	Pension Fund
100Kazakhstan\$57,988SWF	99	National Wealth Fund	Russia	\$58,321	SWF
	100	Kazakhstan National Fund	Kazakhstan	\$57,988	SWF

* Operates as the trustee for MLC Super Fund.

Note: Data is at 31 December 2018, or latest available dates. See Footnotes.

Endnotes in ranking

¹ As of May 31, 2019

² As of March 31, 2019

³ As of December 01, 2018

⁴ As of March 31, 2018

⁵ As of Aril 30, 2019

⁶ As of January 31, 2019

⁷ As of June 30, 2018

Notes:

- Compilation of the Asset Owner 100 data has been drawn from several published studies. Notably these include Sovereign Wealth Fund Institute, Pension & Investments, Bloomberg, Reuters, Statista and Verdict. In certain cases the data is taken from the primary source – the organisation itself.
- The country listing is associated with the principal location of the organisation, but in some cases management is in multiple locations. Note reference to Hong Kong is as a special administrative region of China and not a country.
- The heading of 'Primary Category' has drawn on the self-labelling of some organisations. For example, Government Pension Fund (Norway) is listed here as a pension fund although it also is included in some surveys as a SWF.
- The OCIO figures are compiled by reference to full or partial discretionary accounts managed for underlying asset owners that have delegated the asset management responsibility. The OCIO organisations in some cases manage Master Trust funds for underlying asset owners which are consolidated in the overall figures. We note that all of the OCIOs and Master Trusts have clients globally.
- Consolidated asset figures have been calculated in a number of cases, where an asset owner organisation has one large account and manages other smaller portfolios. The categorisation of organisation type is given for the principal funds managed.

Limitations of reliance

Limitations of reliance – Thinking Ahead Group 2.0

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Contact Details

Tim Hodgson, +44 1737 284822 tim.hodgson@willistowerswatson.com