Thinking Ahead Institute

Global pension assets study 2018

February 2018

Thinking Ahead Institute
Willis Towers Watson

Overview

3 Sections:

- Asset size, including growth statistics and comparison of asset size with GDP **(P22)**
- Asset allocation **(P7)**
- DB and DC share of pension assets **(P7)**

P22

The study covers 22 pension markets in the world (P22). They have pension assets of USD 41,355 bn

P22 markets
Australia
Brazil
Canada
Chile
China
Finland
France
Germany
Hong Kong
India
Ireland
Italy
Japan
Malaysia
Mexico
Netherlands
South Africa
South Korea
Spain
Switzerland
UK
US

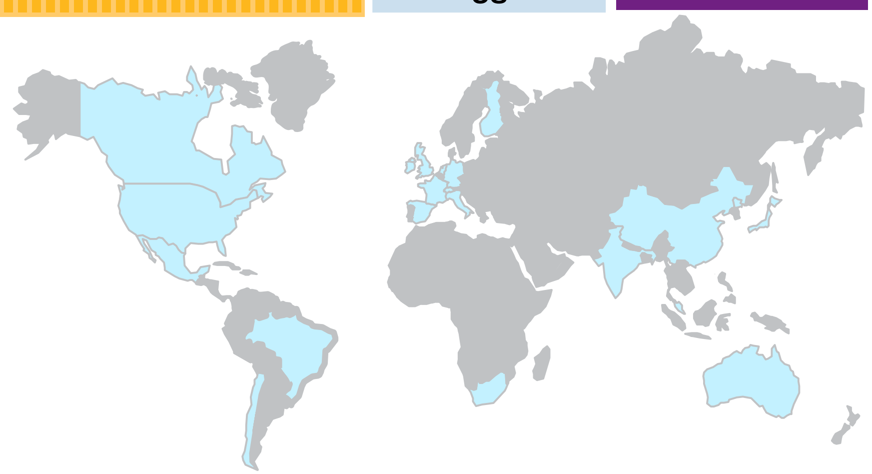
P7

A deeper analysis is performed for the P7, with assets of USD 37,770 bn (91% of P22, 84% of P195)

P7 markets
Australia
Canada
Japan
Netherlands
Switzerland
UK
US

P195

Outside the P22 we estimate there is an additional USD 3,000 bn to 4,000 bn of pension assets



Key 2017 findings – P22 markets

USD 41,355 bn Total P22 assets estimated to year end 2017

61%

The US is the largest market, with a share of 61.4% of P22 assets, followed by the UK and Japan with 7.5% and 7.4% respectively

91%

of P22 assets are in seven largest markets

P22 assets increased **13.1% in 2017** from USD 36,571 bn the previous year

16.4%

Return for a 60% global equities / 40% global bonds reference portfolio in 2017 (in USD)

67% Ratio of pension assets to GDP of these economies

The P22 assets growth rate of US, UK and Japan were 12.7%, 16.9% and 9.7% respectively in 2017 (in USD)

It is important to note the impact of currency exchange rates when measuring the growth of pension assets in USD as, in many cases, the results vary significantly with growth rates in local currency terms

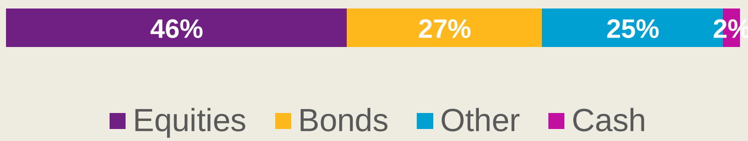
Key 2017 findings – P7 markets

Asset allocation

US, Australia and the UK have higher allocations to equities than the rest of P7 markets

Japan, Netherlands and Switzerland have more conservative investment strategies: higher allocation to bonds

Average global asset allocation of the seven, largest markets at the end of 2017



The asset allocation pattern has changed since 1997. Allocation to assets other than equities and bonds have increased while allocation to equities and bonds have decreased

DB/DC split

49%

DC assets represent 48.6% of total P7 pension assets

5.6%

Growth rate of DC assets in the last ten years

3.1%

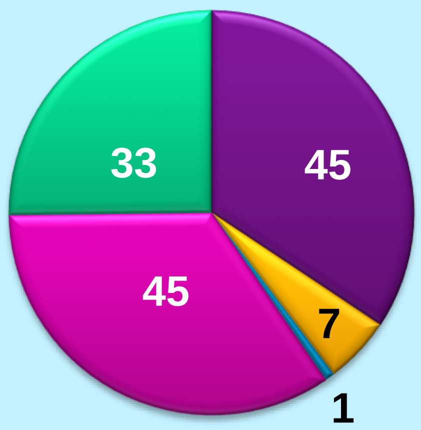
Growth rate of DB assets in the last ten years

DC is dominant in Australia and the US. Japan and Canada, historically only DB, are now showing signs of a shift to DC

[1] The majority of pension fund assets in Switzerland are DC and take the form of cash balance plans, whereby the plan sponsor shares the investment risk and the assets are pooled. Pure DC assets have only recently been introduced in Switzerland and, although they have seen strong growth, they are not yet large enough to justify inclusion in this analysis.

Key 2017 findings - global asset owner landscape

Asset owners globally control USD 131 trillion



Source: The asset owner of tomorrow: Thinking Ahead Institute. Various original sources. Projections used to derive end 2017 estimates

What is an asset owner?

An asset owner has three qualifying characteristics:

1. Works directly for a defined group of beneficiaries / savers / investors as the investment manager of their assets in a **fiduciary capacity** under delegated responsibility
2. Works with a **sponsor**, usually a government, part of government, a company or a not-for-profit within explicit law and under an implicit societal license to operate
3. Has the **purpose** of delivering mission-specific outcomes to beneficiaries and stakeholders in the form of various payments or benefits into the future

Pension funds, sovereign wealth funds and endowments and foundations clearly qualify as asset owners, while mutual funds and insurance funds partly qualify

Key findings from 20 years of global pension assets growth

#1 market – Australia	• The 20-year growth in pension assets in Australia has been 12.1% per annum. The critical features in this success have been government-mandated pension contributions, a competitive institutional model and the dominance of DC
#1 pension design – defined contribution	• The 20-year growth of DC in the P7 has been 7.9% per annum relative to 4.5% per annum for DB. DC has worked better for employers who have had declining appetite for taking pension risk during this 20-year period
#1 asset class – private assets	• The asset allocation to real estate, private equity and infrastructure in the 20-year period has moved from about 4% to around 20%. Alternatives have been attractive for return reasons, offsetting their governance difficulties
#1 meme – governance	• The governance of pension funds has been a growing source of attention fanned by successive industry reviews – ERISA in the US; Myners in the UK; Cooper in Australia. Pension governance is a lot stronger than 20 years ago
#1 missed opportunity – stewardship	• The 20-year story is one of missing the opportunity to influence and mitigate corporate misalignments – like executive pay, and other poor leadership and boardroom practices
#1 no-show – technology	• The technology impacts on pension funds have been surprisingly light as evidenced by legacy systems that rely heavily on spreadsheets. The prioritisation of technological innovation hasn't changed much over the 20 years

Key issues for pension funds to consider in the next 5-10 years

Pension design, towards a DC model	• DC becomes the dominant global model. Individuals own the risk but have little control. The significant governance issues gradually get sorted out
Bigger impact from evolved regulations	• Pension funds will be subject to heavier saver/investor protection regulations. What they invest in will also be over-regulated
Governance issues are challenging	• There is a big governance challenge to build the resources required to manage a complex organisation, with multiple stakeholders, and varied views on what constitutes progress and success
Culture makes a difference	• Investment organisations increasingly differentiate themselves by referencing their values and culture. New measurement models and methods are needed to move the needle on culture
Sustainability and long-horizon investing	• Opportunities are being missed in the overlapping areas of sustainability, ESG, stewardship and long-horizon investing. Investors need to combine both investment beliefs and wider sustainability motives in their strategy
Technology rising	• Technology will challenge business models and human capital, requiring adaptation. The people plus technology model should ultimately emerge as dominant

Expected shifts by pension funds in the next 5-10 years

Shift	Shift from	Shift to
Business model Refocusing	▪ License to operate is more of a legal construct ▪ Focused over short- and long-term but problems with control	▪ License to operate is both legal and a social construct ▪ Focused over long- and short-term; with better control
People model Adapting to better culture and diversity	▪ Male, ethno-centric, economics educated with limited culture	▪ Multi-disciplinary, diverse spectrum of backgrounds with stronger culture
Operating model Streamlining decisions	▪ IT infrastructure weak ▪ Decision biases significant	▪ IT infrastructure stronger ▪ Decision biases reduced
Investment model Repositioning to more systematic and sustainable	▪ Alternatives moderately sized but infrastructure finance small ▪ Alpha broad, factors small ▪ Small-scale responsible investing model ▪ Silent and disengaged owners	▪ Alternatives large-sized with infrastructure finance larger ▪ Alpha selective, factors larger ▪ Mainstreamed sustainability model ▪ Engaged owners with some activism

Source: The asset owner of tomorrow, Thinking Ahead Institute, 2017

Asset size

Market	Total Assets 2017 (USD billion)	Assets/GDP ratio (%)[7]
Australia	1,924	138.4%
Brazil[1]	269	12.9%
Canada	1,769	107.8%
Chile	205	77.8%
China[2]	177	1.5%
Finland	233	92.8%
France	167	6.5%
Germany[3]	472	12.9%
Hong Kong	164	49.1%
India	120	4.9%
Ireland	157	48.2%
Italy	184	9.6%
Japan[4]	3,054	62.5%
Malaysia	227	73.4%
Mexico	177	15.5%
Netherlands	1,598	193.8%
South Africa	258	75.1%
South Korea	725	47.4%
Spain	44	3.3%
Switzerland[5]	906	133.1%
UK	3,111	121.3%
US[6]	25,411	131.2%
Total	**41,355**	**67.0%**[8]

Source: Willis Towers Watson and secondary sources

1 Only includes pension assets from closed entities.
2 Only includes Enterprise Annuity assets.
3 Only includes pension assets for company pension schemes.
4 Does not include the unfunded benefit obligation of corporate pension plans (account receivables).
5 Only includes autonomous pension funds. Does not consider insurance companies assets.
6 Includes IRAs.
7 The Assets/GDP ratio for individual markets are calculated in local currency terms, and the total Assets/GDP ratio is calculated in USD.
8 The ratio of Total Pension Assets to GDP declined from 2016 with the addition of China. China's pension assets represent 1.5% of total GDP.

Pension asset growth versus market returns

Period to end December 2017	Total assets growth in USD – All countries annualised	Total assets growth in USD – P7 countries annualised	Reference Portfolio return 60% Global Equity / 40% Global Debt annualised
1-year	13.1%	12.8%	16.4%
5-year	6.2%	6.3%	7.4%
10-year	4.5%	4.3%	4.9%
20-year	6.2%	5.8%	6.0%

- Total pension asset growth has been quite closely matched to global public market equity and bond returns over the last 20 years
- The reference portfolio returns are a simple proxy for market returns used by some funds – in practice funds seek to outperform this return by adopting different mixes of asset to the 60/40 split in the reference portfolio. In particular, funds have large alternative assets exposures
- Pension asset growth includes net cash flows – contributions in and benefits out. Most calculations suggest that this amount has been quite small relative to the size of assets and market growth

Source: Willis Towers Watson and secondary sources
Growth in all countries not adjusted for the change fin using P11 to P22 over the period
Figures for P7 are like-for-like in the 7 countries selected

Reference Portfolio used by some pension funds as performance comparator for an averagely sized risk appetite
The Reference Portfolio is rebalanced annually
Source: MSCI ACWI Index ; Bloomberg Barclays Global Aggregate Bond Index
All calculations in US dollars

Evolution of P7 ranking – assets in billions of USD

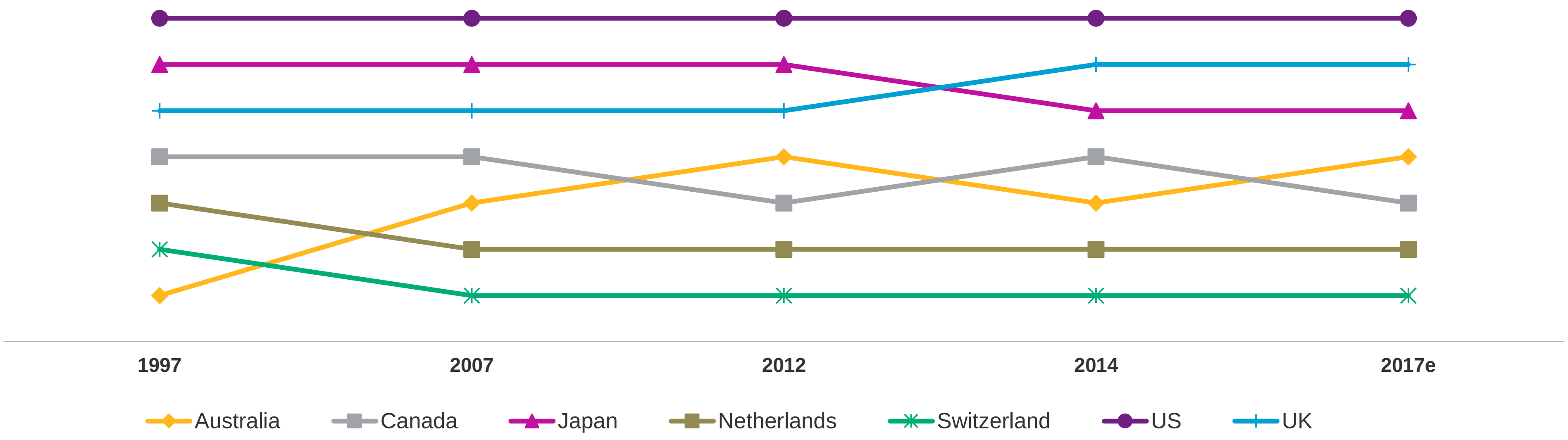
1997	
US	7,893
Japan	1,901
UK	1,050
Canada	436
Netherlands	365
Switzerland	294
Australia	193

2007	
US	15,330
Japan	3,002
UK	2,686
Canada	1,209
Australia	1,086
Netherlands	1,058
Switzerland	539

2012	
US	16,848
Japan	3,166
UK	2,879
Australia	1,476
Canada	1,421
Netherlands	1,252
Switzerland	736

2014	
US	21,708
UK	3,272
Japan	2,693
Canada	1,611
Australia	1,548
Netherlands	1,415
Switzerland	788

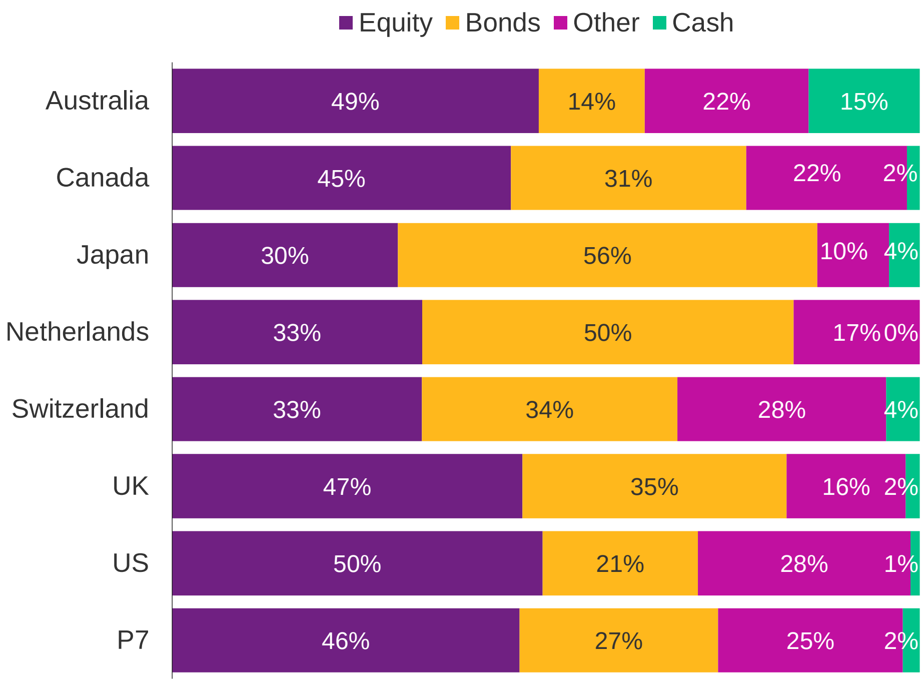
2017e	
US	25,411
UK	3,111
Japan	3,054
Australia	1,924
Canada	1,769
Netherlands	1,598
Switzerland	906



Source: Willis Towers Watson and secondary sources

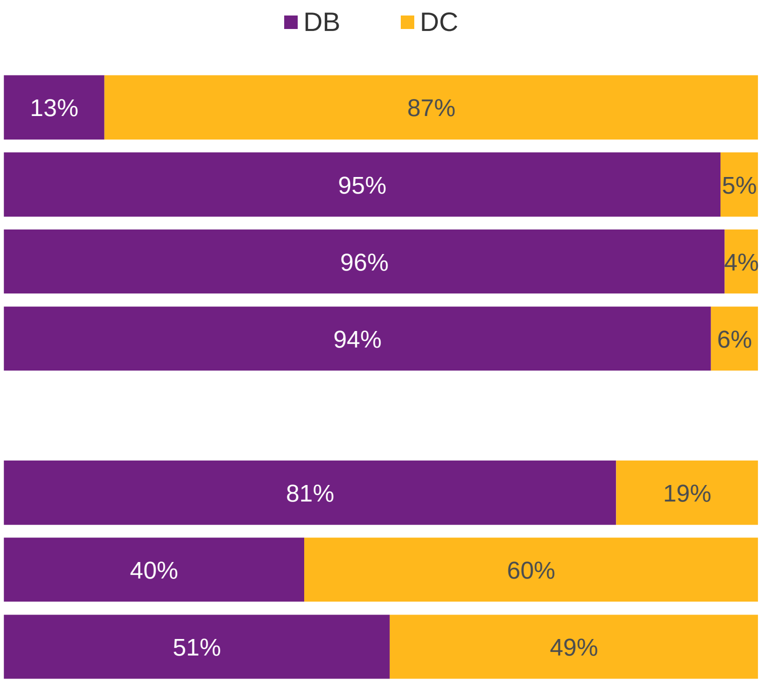
Asset allocation and DB/DC split

Asset allocation 2017



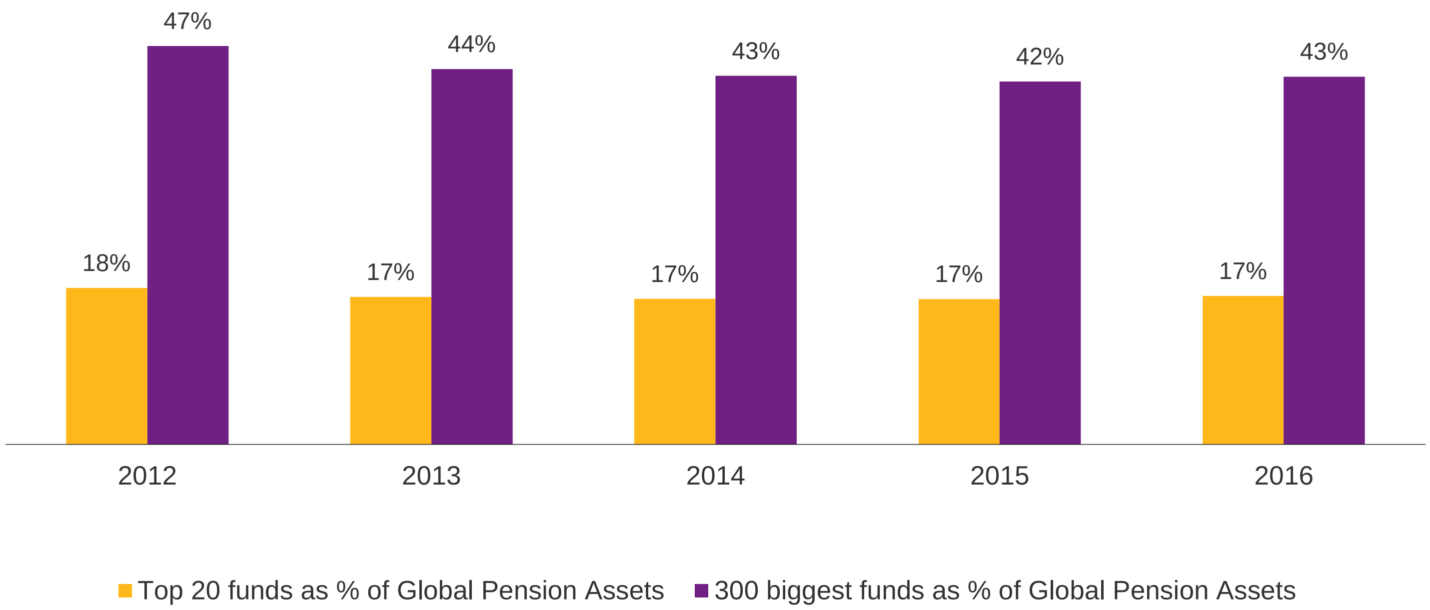
Source: Willis Towers Watson and secondary sources

DB/DC split 2017[1,2]



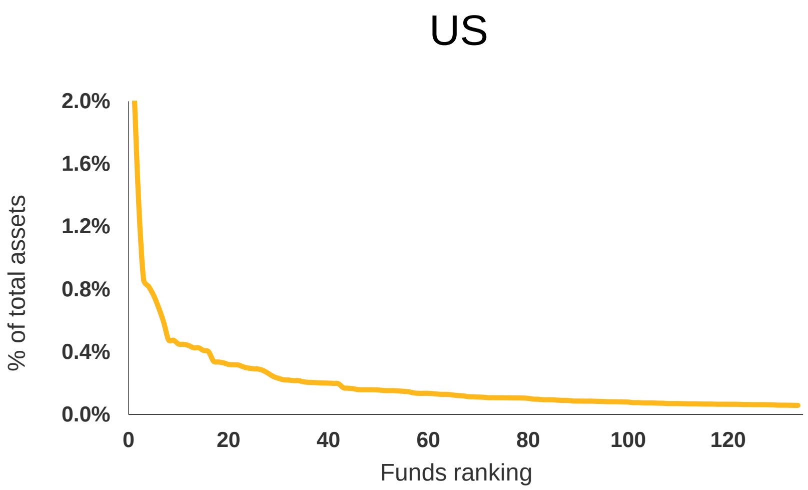
[1] DC assets in Switzerland are cash balance plans where the plan sponsor shares the investment risk and all assets are pooled. There are no pure DC assets where members make an investment choice and receive market returns on their funds. Therefore, Switzerland is excluded from this analysis.
[2] In January 2017, the UK's Office for National Statistics stated that the figures previously disclosed for DC entitlements were significantly overestimated. As a result there is a significant decrease in UK DC pension assets when compared to the previous editions of this study. This change has a very limited impact on the P7 DC assets; in the order of a one percent reduction.

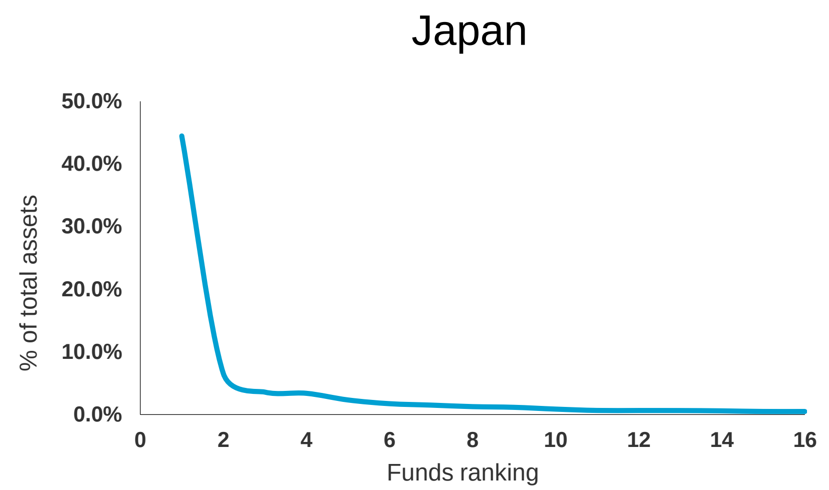
Concentration of assets in top 300 pension funds

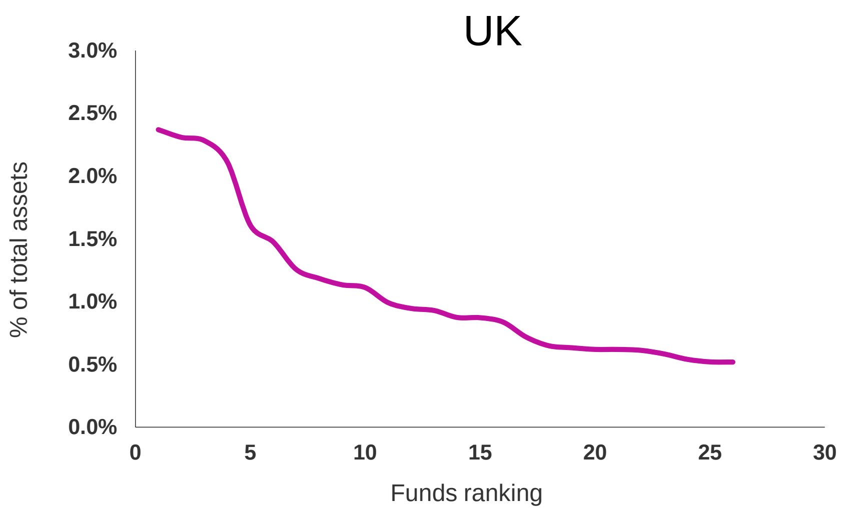


- The annual Pension & Investments/Willis Towers Watson 300 Analysis ranks the world's largest 300 pension funds by assets
- The assets of the top 300 pension funds represent 43.0% of the total global pension assets
- The top 20 pension funds account for 17.4% of total global pension assets

Relative size of top pension funds by market







- While the top ten US pension funds represent 8.6% of total assets, the top ten Japanese pension funds account for 67.0% of total assets. This is largely explained by the Government Pension Investment fund that represents 44.4% of Japan's pension assets
- In the UK, the top ten pension funds represent 16.8% of the total UK pension assets. Among them, 13.3% are private pension funds and the remaining 3.5% are state-sponsored pension funds

Source: Willis Towers Watson and secondary sources

Asset size

Asset size and growth statistics
Comparison of asset size with GDP

A decade of growth

- In 2017 global pension assets are estimated to have reached USD 41,355 billion, an increase of over 13% in a year
- The US is the largest pensions market followed, at significant distance, by the UK and Japan. Together they account for over 76% of all pensions assets
- P22 assets are around 50% larger than a decade ago

Market	Total assets 2007 (USD billion)	Total assets 2017e (USD billion)	10-year CAGR (USD)
US	15330	25411	5.2%
UK	2686	3111	1.5%
Japan	3002	3054	0.2%
Australia	1086	1924	5.9%
Canada	1209	1769	3.9%
Netherlands	1058	1598	4.2%
Switzerland	539	906	5.3%
South Korea[1]	—	725	—
Germany	391	472	1.9%
Brazil	259	269	0.4%
South Africa	195	258	2.8%
Finland	183	233	2.4%
Malaysia[1]	—	227	—
Chile	111	205	6.3%
Italy[1]	—	184	—
Mexico	108	177	5.1%
China[1]	—	177	—
France	170	167	-0.2%
Hong Kong	75	164	8.1%
Ireland	128	157	2.1%
India[1]	—	120	—
Spain	46	44	-0.5%
Total	**26,577**	**41,355**	**4.2%**

Source: Willis Towers Watson and secondary sources

[1] 10 year growth rates are not available for China, India, Italy, Malaysia and South Korea.

Growth rates in USD

- During the last ten years, the fastest growing pension markets have been Hong Kong (8.1%), Chile (6.3%) and Australia (5.9%) in USD terms
- France and Spain have had the slowest rates of growth in USD terms since 2007 (-0.2% and -0.5% respectively)

Market	Growth rates to 2017e (USD) 1-year CAGR[2]	5 -year CAGR	10-year CAGR
Australia[3]	8.0%	5.4%	5.9%
Brazil	9.9%	-4.1%	0.4%
Canada[1]	14.0%	4.5%	3.9%
Chile	17.7%	4.8%	6.3%
China[4]	11.2%	18.4%	—
Finland	16.4%	3.4%	2.4%
France[1]	18.7%	1.7%	-0.2%
Germany	16.0%	0.2%	1.9%
Hong Kong	20.3%	10.0%	8.1%
India	7.8%	8.8%	—
Ireland	18.7%	8.1%	2.1%
Italy[4]	15.3%	5.9%	—
Japan	9.7%	-0.7%	0.2%
Malaysia[4]	17.9%	2.5%	—
Mexico	13.2%	-0.4%	5.1%
Netherlands	17.5%	5.0%	4.2%
South Africa	26.8%	0.4%	2.8%
South Korea[4]	18.1%	13.2%	—
Spain	16.5%	0.0%	-0.5%
Switzerland	12.2%	4.2%	5.3%
UK[1]	16.9%	1.6%	1.5%
US	12.7%	8.6%	5.2%
Average	**15.2%**	**4.6%**	**3.2%**

Source: Willis Towers Watson and secondary sources

[1] There was a methodology change for France and Canada in 2008/2009 and a methodology change for UK in 2012 and 2016.
[2] 1-year growth rate does not capture net contributions in markets
[3] Existing contribution rates as well as the fact that retirees can cash in all their benefits (i.e. no compulsion to lock in or annuities), can have a significant impact on expected asset growth in Australia.
[4] 10 year growth rates are not available for China, India, Italy, Malaysia and South Korea.

Relative weights of each market

- In the past decade, the weights of Brazil, Canada, Finland, France, Germany, Ireland, Japan, Netherlands, South Africa, Spain and UK have declined relative to the other markets in the study

	Relative weights of each market	
Market	**2007**	**2017e**
Australia	4.1%	4.7% ▲
Brazil	1.0%	0.6% ▼
Canada[1]	4.5%	4.3% ▼
Chile	0.4%	0.5% ▲
China[2]	—	0.4%
Finland	0.7%	0.6% ▼
France[1]	0.6%	0.4% ▼
Germany	1.5%	1.1% ▼
Hong Kong	0.3%	0.4% ▲
India[2]	—	0.3%
Ireland	0.5%	0.4% ▼
Italy[2]	—	0.4%
Japan	11.3%	7.4% ▼
Malaysia[2]	—	0.6%
Mexico	0.4%	0.4%
Netherlands	4.0%	3.9% ▼
South Africa	0.7%	0.6% ▼
South Korea[2]	—	1.8%
Spain	0.2%	0.1% ▼
Switzerland	2.0%	2.2% ▲
UK[1]	10.1%	7.5% ▼
US	57.7%	61.4% ▲
Total	**100.0%**	**100.0%**

Source: Willis Towers Watson and secondary sources

[1] There was a methodology change for France and Canada in 2008/2009 and a methodology change for UK in 2012 and 2016.

[2] 2007 figures for China, India, Italy, Malaysia and South Korea are not available.

Growth rates in local currency

- Estimated five-year growth rates range from 2.0% pa in Spain to 19.1% pa in China
- During the past ten years Mexico's pension assets have grown the fastest, followed by those of South Africa, Chile, Hong Kong and Australia

Market	1-year CAGR[2]	5 -year CAGR	10-year CAGR
Australia	6.0%	8.8%	7.1%
Brazil	11.8%	5.6%	6.9%
Canada[1]	6.3%	9.4%	6.5%
Chile	8.7%	10.2%	8.6%
China[3]	4.2%	19.1%	—
Finland	2.4%	5.4%	4.6%
France[1]	4.4%	3.8%	1.8%
Germany	2.0%	2.2%	3.9%
Hong Kong	21.2%	10.2%	8.1%
India[3]	1.2%	12.2%	—
Ireland	4.4%	10.2%	4.1%
Italy[3]	1.4%	8.0%	—
Japan	5.8%	4.8%	0.2%
Malaysia[3]	6.7%	8.1%	—
Mexico	7.7%	8.2%	11.5%
Netherlands	3.3%	7.1%	6.3%
South Africa	14.8%	8.3%	9.2%
South Korea[3]	4.6%	13.2%	—
Spain	2.5%	2.0%	1.4%
Switzerland	7.5%	5.6%	3.8%
UK[1]	6.6%	5.3%	5.5%
US	12.7%	8.6%	5.2%
Average	**6.6%**	**8.0%**	**5.6%**

[1] There was a methodology change for France and Canada in 2008/2009 and a methodology change for UK in 2012 and 2016.

[2] 1-year growth rate does not capture net contributions in markets

[3] 10 year growth rates are not available for China, India, Italy, Malaysia and South Korea.

Source: Willis Towers Watson and secondary sources

Currency impact

- In 2017, the Brazilian real and the Hong Kong Dollar depreciated against the US Dollar, all the other currencies in the study rose against the US Dollar
- Currencies that appreciated the most against the USD were the Euro (13.7%), Korean Won (12.9%), Malaysian Ringgit and South African Rand (both with 10.5%)
- Over longer periods, there has been a trend of strengthening USD relative to other major currencies. During the last ten years, the only currency that has appreciated against the USD was the Swiss Franc (1.4% pa), while in the last five years, none of the currencies of the markets in this study appreciated against the USD

	Variation in FX rates against USD		
Market	1-year	5-year CAGR	10-year CAGR
Australia	1.9%	-3.1%	-1.1%
Brazil	-1.7%	-9.2%	-6.1%
Canada	7.3%	-4.5%	-2.4%
Chile	8.3%	-4.9%	-2.1%
China[1]	6.7%	-0.6%	—
Finland	13.7%	-1.9%	-2.0%
France	13.7%	-1.9%	-1.9%
Germany	13.7%	-1.9%	-1.9%
Hong Kong	-0.8%	-0.2%	0.0%
India[1]	6.5%	-3.0%	—
Ireland	13.7%	-1.9%	-1.9%
Italy[1]	13.7%	-1.9%	—
Japan	3.6%	-5.3%	0.0%
Malaysia[1]	10.5%	-5.2%	—
Mexico	5.1%	-7.9%	-5.8%
Netherlands	13.7%	-1.9%	-1.9%
South Africa	10.5%	-7.3%	-5.9%
South Korea[1]	12.9%	0.0%	—
Spain	13.7%	-1.9%	-1.9%
Switzerland	4.4%	-1.3%	1.4%
UK	9.7%	-3.6%	-3.8%

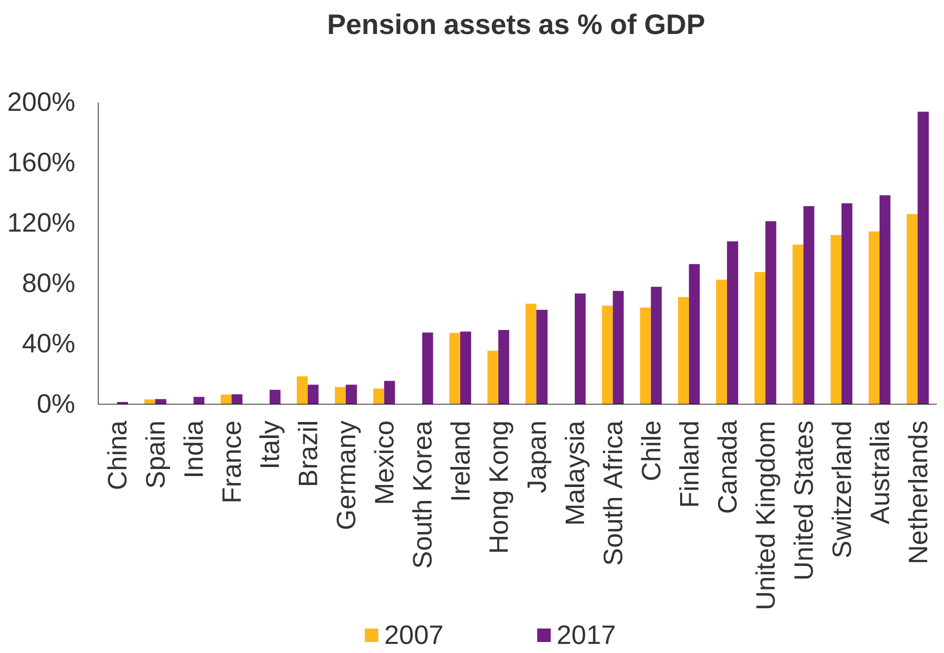
Source: Willis Towers Watson and secondary sources

[1] 10 year growth rates are not available for China, India, Italy, Malaysia and South Korea.

Pension assets vs GDP in local currency

	Pension assets as a % of GDP		
Market	**2007**	**2017e**	***Change*[1]**
Australia	114%	138%	24%
Brazil	19%	13%	-6%
Canada	83%	108%	25%
Chile	64%	78%	14%
China[2]	—	1%	—
Finland	71%	93%	22%
France	6%	7%	1%
Germany	11%	13%	2%
Hong Kong	35%	49%	14%
India[2]	—	5%	—
Ireland	47%	48%	1%
Italy[2]	—	10%	—
Japan	66%	63%	-3%
Malaysia[2]	—	73%	—
Mexico	10%	16%	6%
Netherlands	126%	194%	68%
South Africa	65%	75%	10%
South Korea[2]	—	47%	—
Spain	3%	3%	0%
Switzerland	112%	133%	21%
UK	88%	121%	33%
US	106%	131%	25%

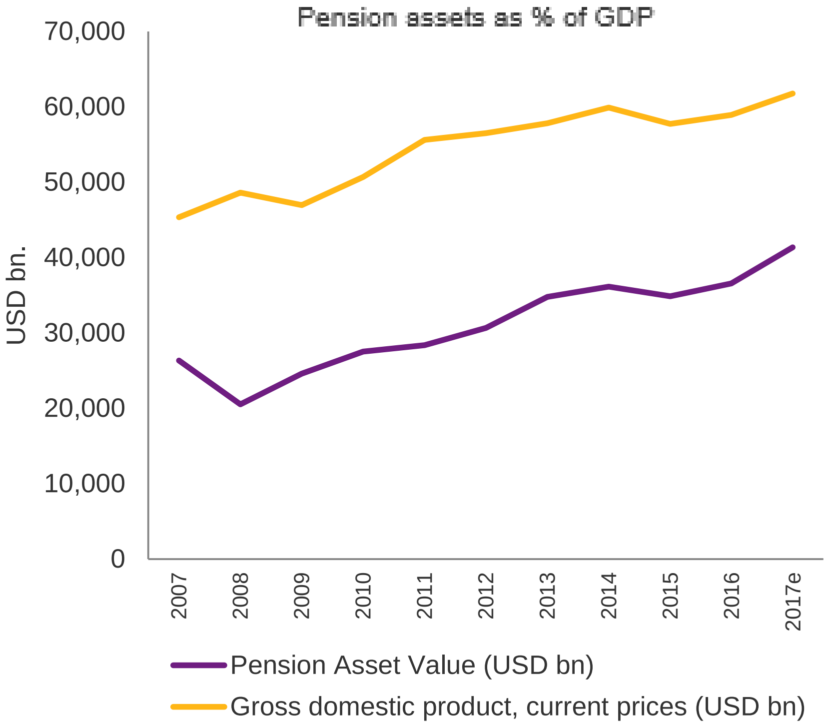
Source: Willis Towers Watson and secondary sources



[1] In percentage points, figures are rounded.
[2] 2007 figures are not available for China, India, Italy. Malaysia and South Korea.

Pension assets VS GDP in USD

- The total pension assets to GDP ratio reached 67% at the end of 2017
- The Netherlands has the highest ratio of pension assets to GDP (194%) followed by Australia (138%), Switzerland (133%), the US (131%) and the UK (121%)
- During the last ten years, the pension assets to GDP ratio increased the most in Netherlands, United Kingdom, Canada and the US (68, 34, 25 and 25 percentage points respectively). It declined in only one market, Brazil by 6%.

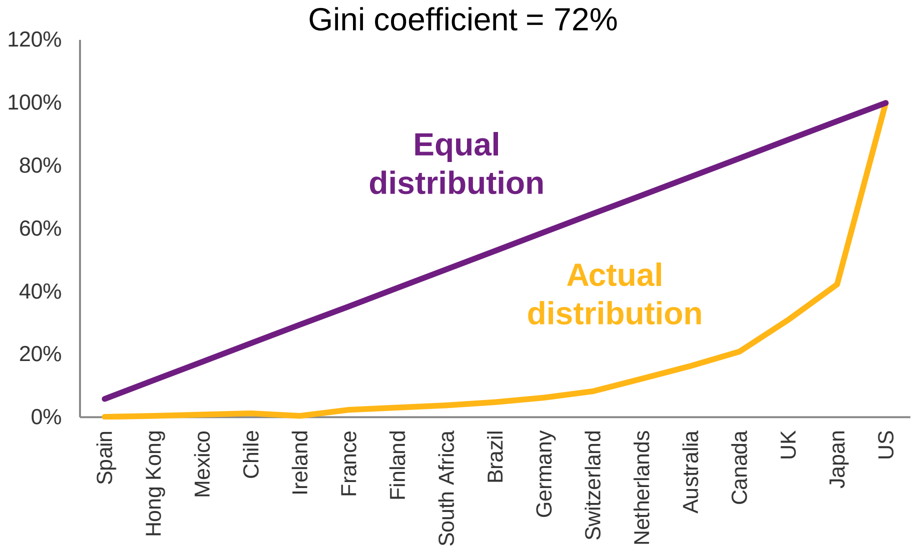


Source: Willis Towers Watson and secondary sources

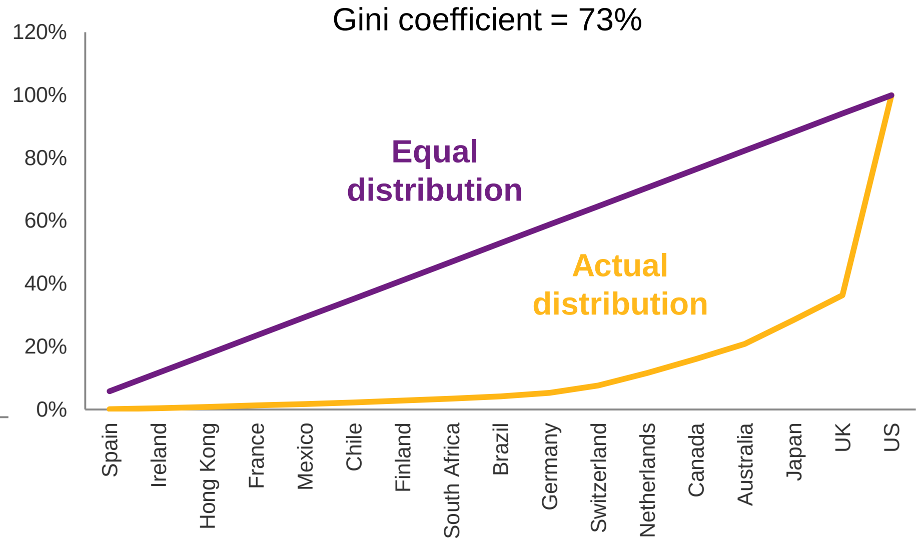
Note: World GDP measured in USD and market GDP in Local Currency

Pension market concentration

Lorenz curve for pension assets in 2007



Lorenz curve for pension assets in 2017

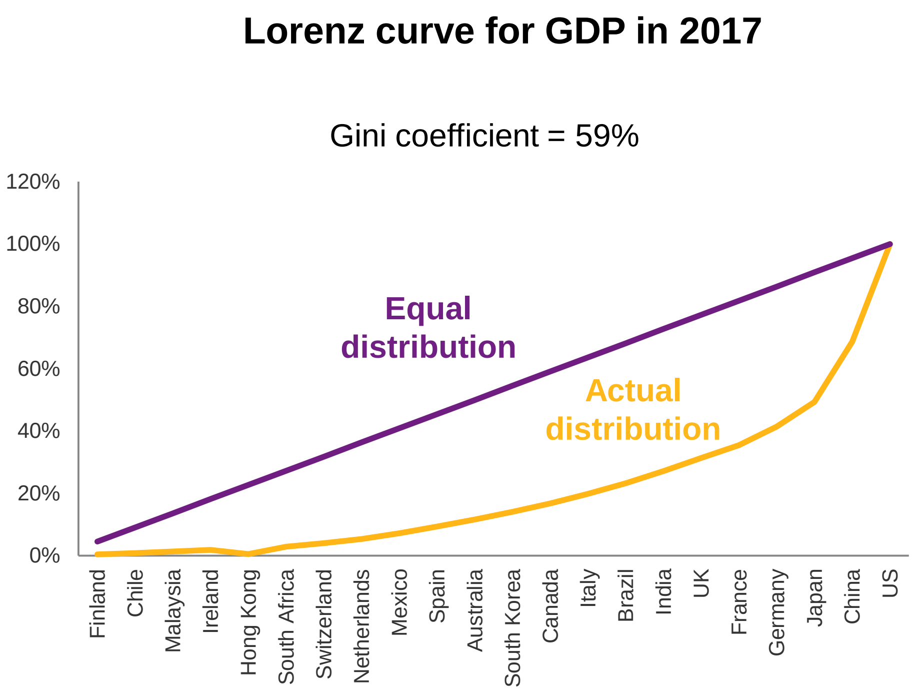


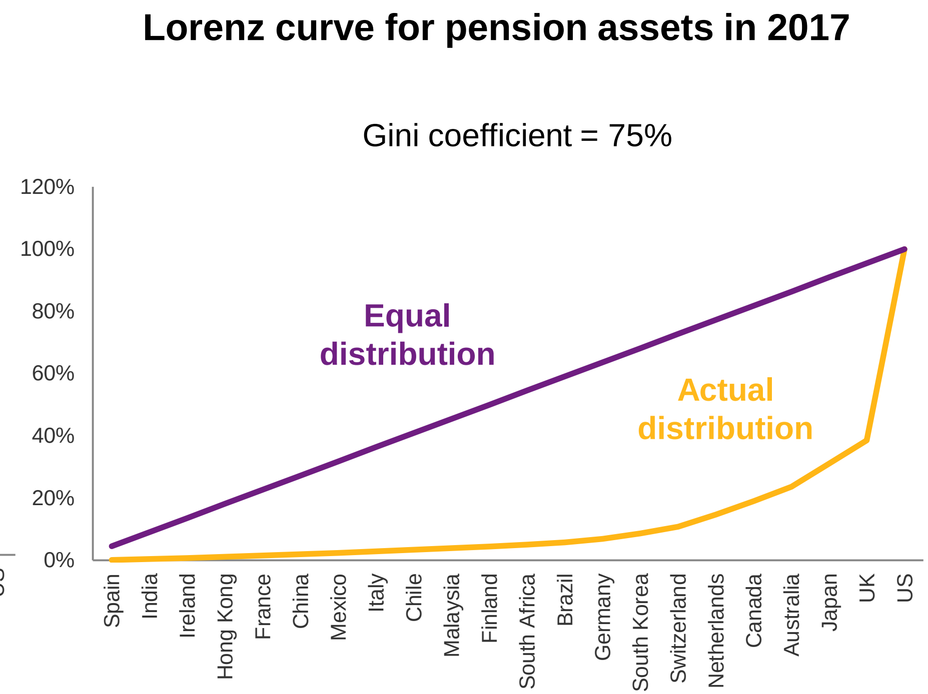
Source: Willis Towers Watson and secondary sources

- The Gini coefficient of global pension assets in 2017 was 72.9% which indicates the pension assets are still concentrated in relatively few markets
- The global pension market has remained largely unchanged over the last 10 years. The Gini coefficient was 71.5% in 2007

Note: China, India, Italy, Malaysia and South Korea are not included in the analysis

Compared with GDP



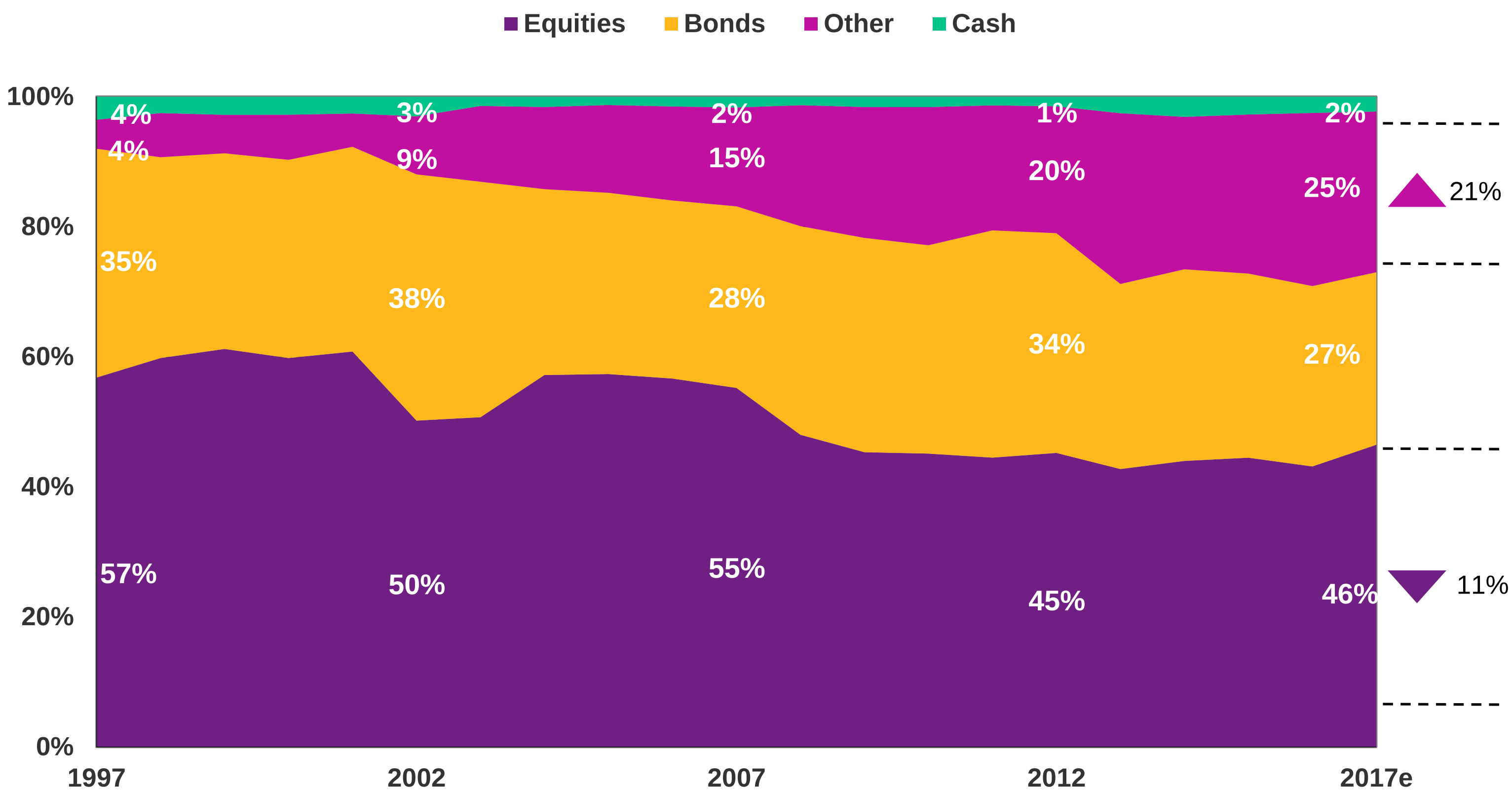


Source: Willis Towers Watson and secondary sources

- The lower Gini coefficient for GDP (58.7%) relative to pension market size (75.0%) suggests that the global pension asset pool is more concentrated than what would be suggested by their GDP levels. This could be explained by a number of factors including but not limited to a more developed capital market and a more mature pension system within the larger markets
- As a comparison, the Gini coefficient for GDP has increased over the last 10 years, from 55.0% in 2007 to 58.7% in 2017

Asset allocation (P7)

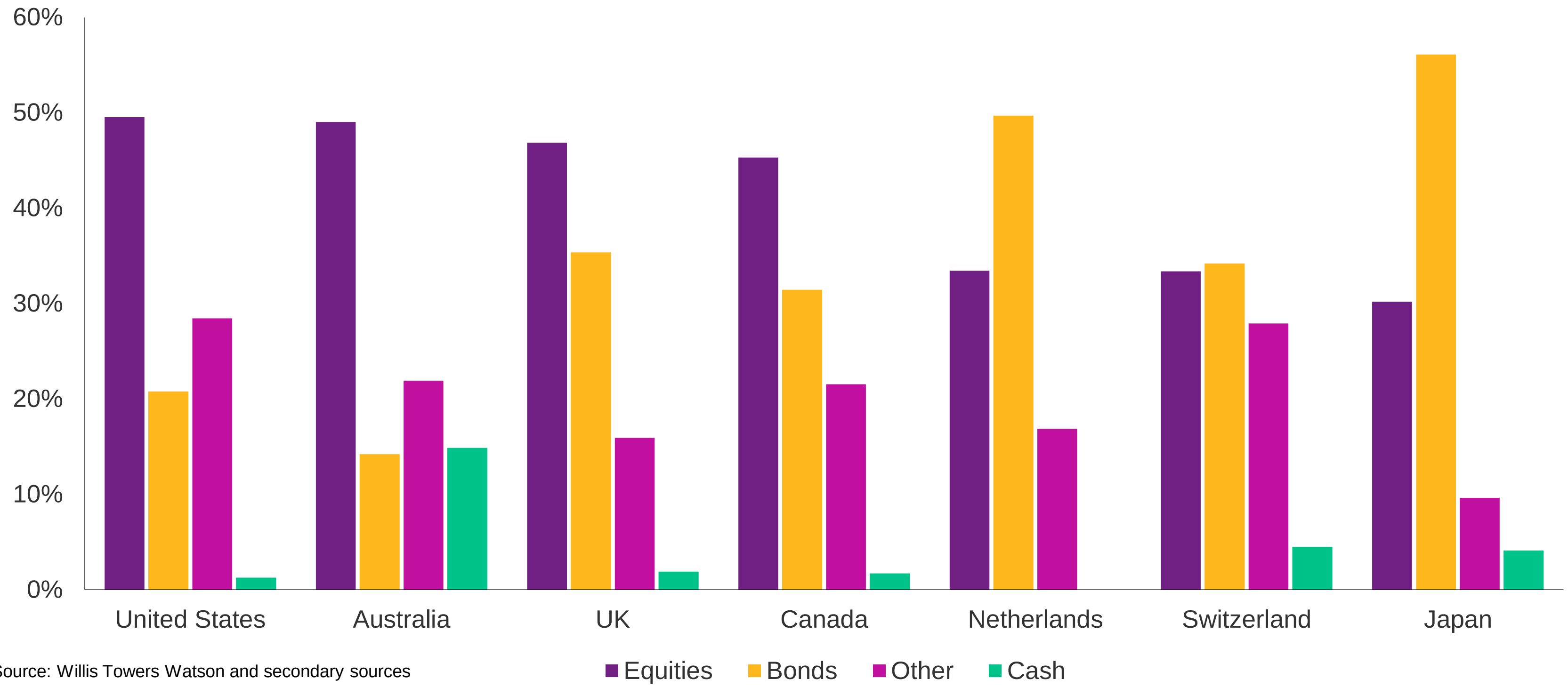
Aggregate P7 asset allocation from 1997 to 2017



Source: Willis Towers Watson and secondary sources

- Since 1997, bonds, equities and cash allocations have reduced to varying degrees while allocations to other assets (real estate and other alternatives) have increased from 4% to 25%
- Pension fund assets managed by the top 100 alternative asset managers rose to USD 1,612 billion in 2017 according to Willis Towers Watson's Global Alternatives Survey

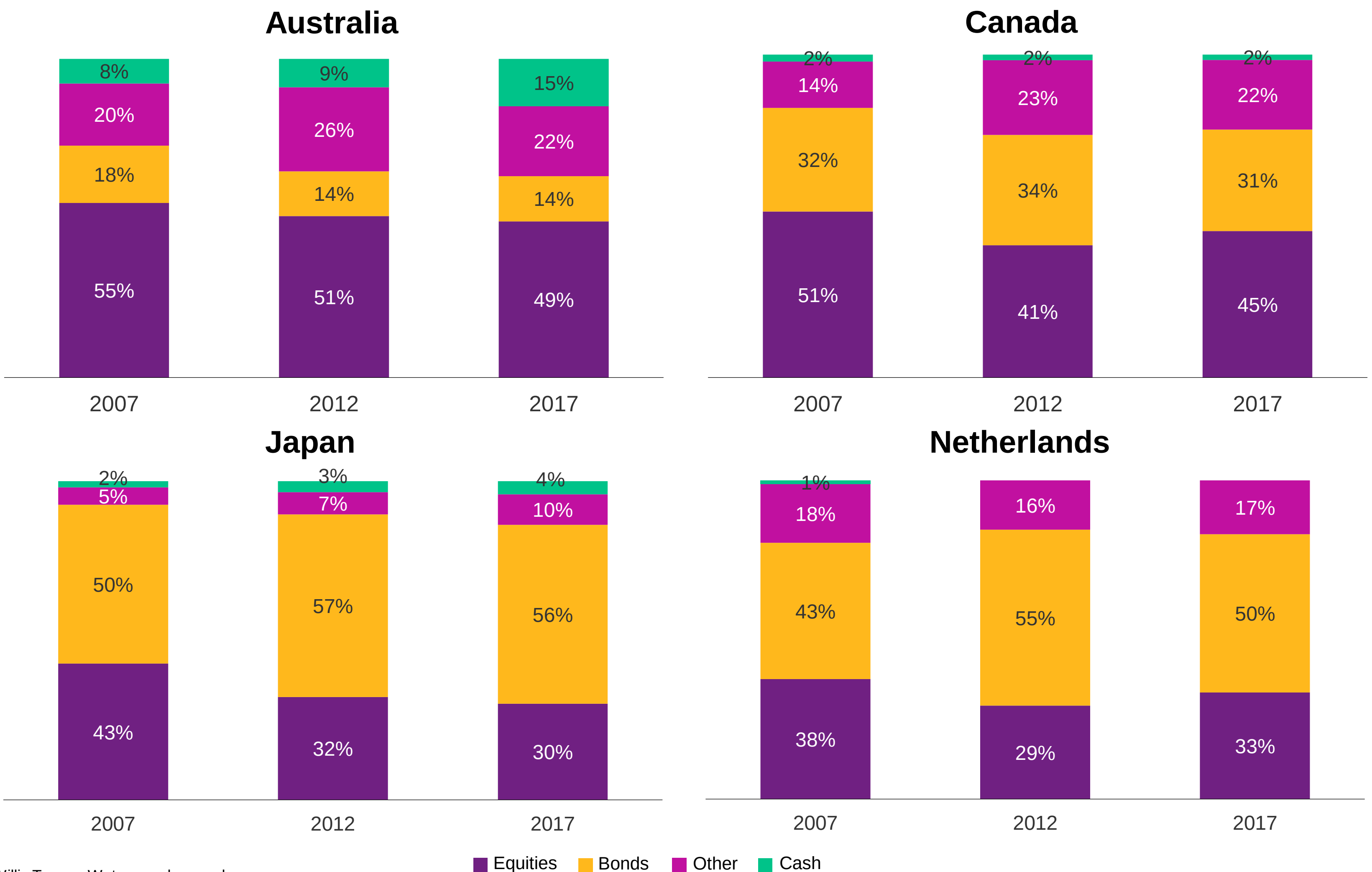
P7 asset allocation in 2017



Source: Willis Towers Watson and secondary sources

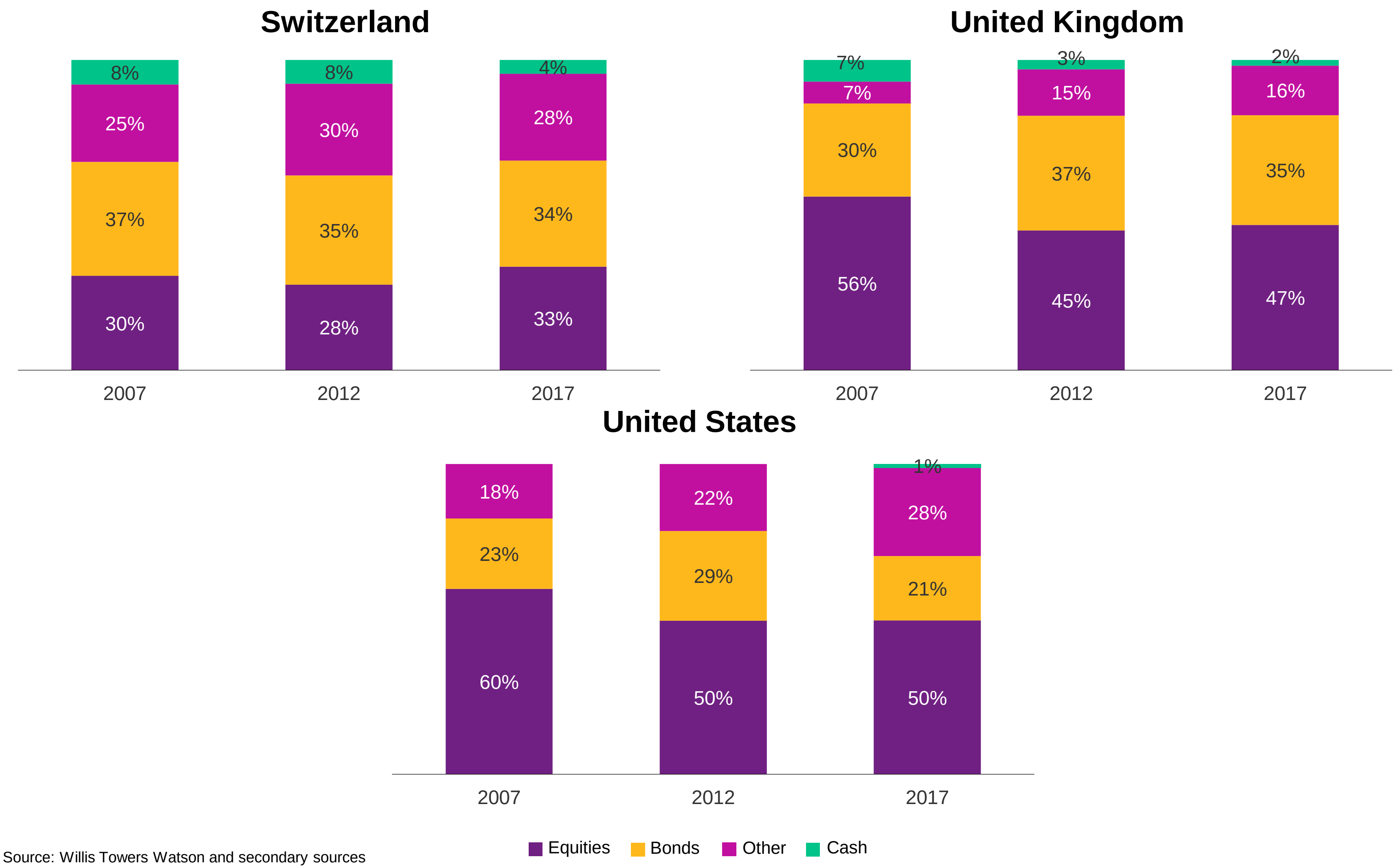
- In 2017, Australia, Canada, the UK and the US continued to have above average equity allocations
- The Netherlands and Japan have above average exposure to bonds, while Switzerland has the most even allocations across equities, bonds and other assets

P7 asset allocation over the last ten years (1)



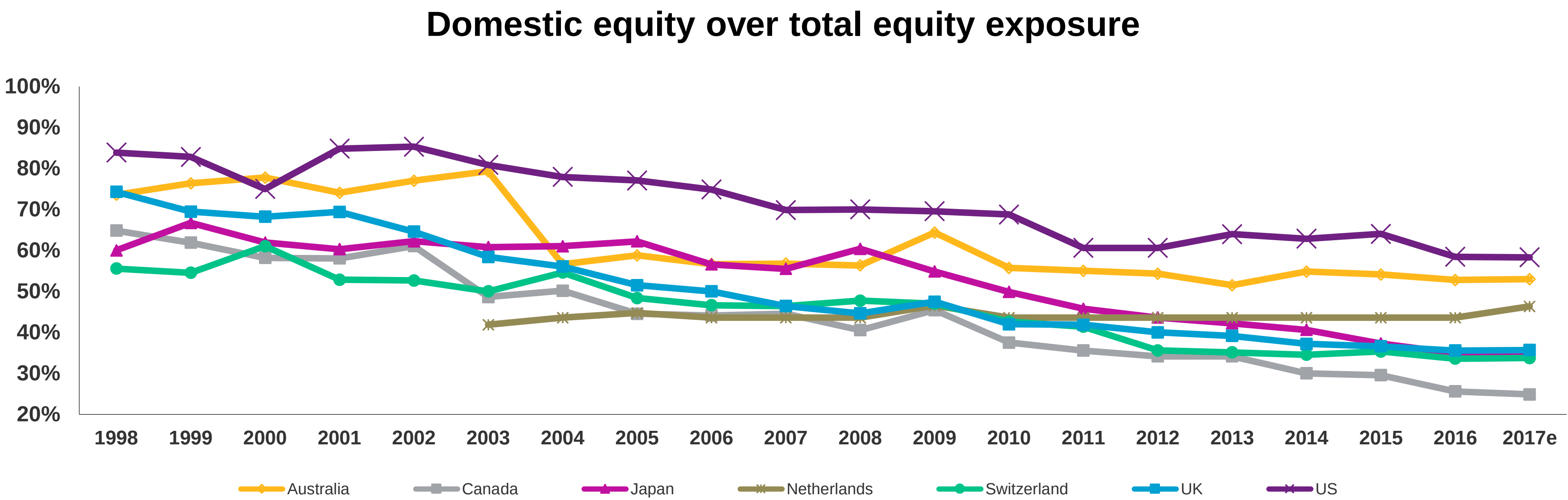
Source: Willis Towers Watson and secondary sources

P7 asset allocation over the last ten years (2)



Source: Willis Towers Watson and secondary sources

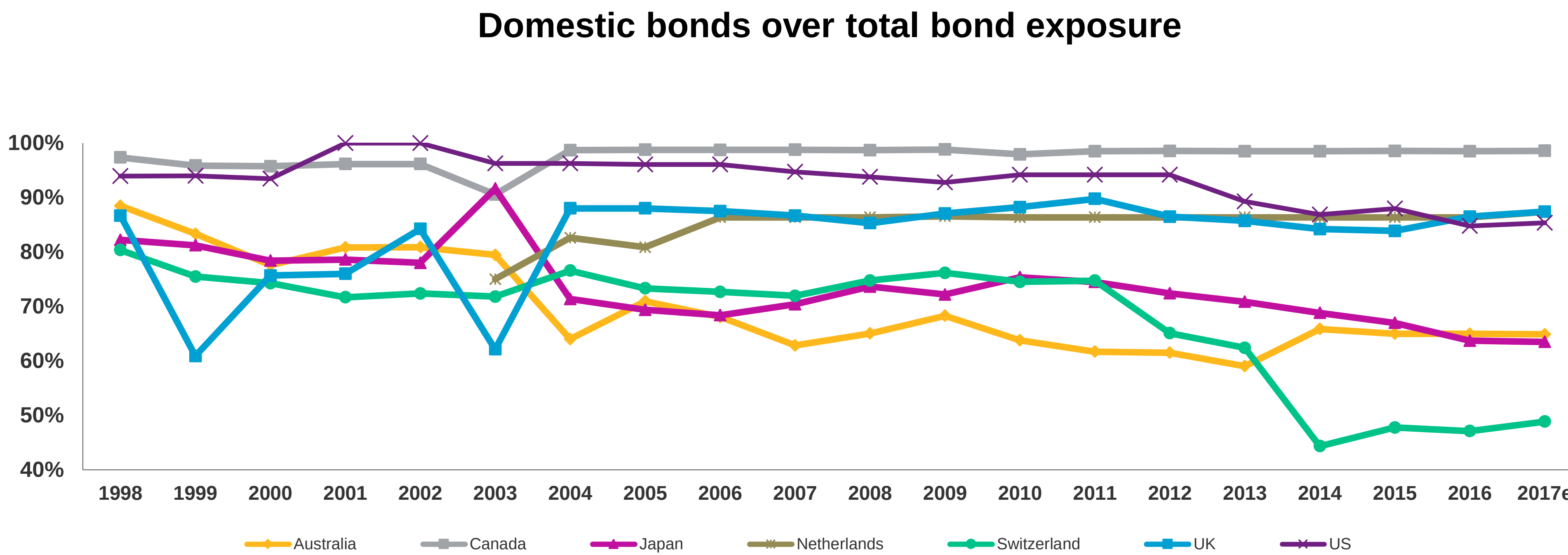
Domestic equity exposure



Source: Willis Towers Watson and secondary sources

- There is a clear sign of a reduced home bias in equities, as the weight of domestic equities has fallen, on average, from 68.7% in 1998 to 41.1% in 2017
- During the past ten years, the US has had the highest allocation to domestic equities, while Canada Switzerland and the UK have had the lowest allocation

Domestic bonds exposure

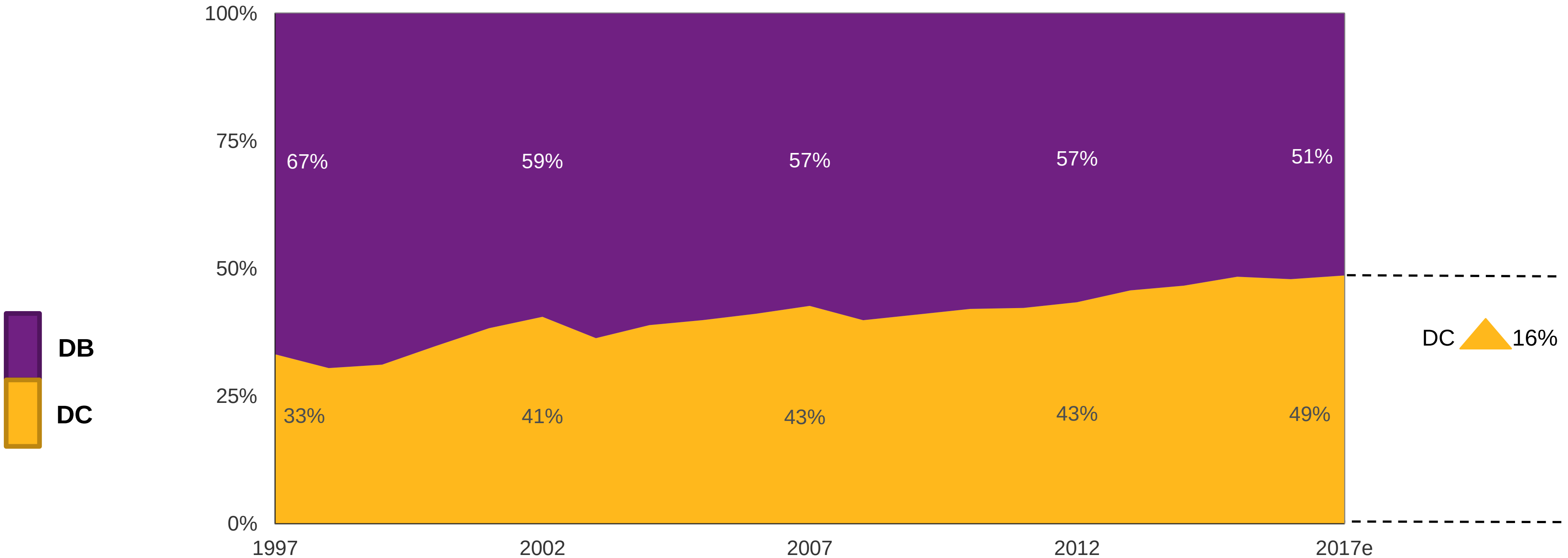


Source: Willis Towers Watson and secondary sources

- The allocation to domestic bonds has remained high. On average, the allocation to domestic bonds as a percentage of total bonds was 88.2% in 1998 and 76.6% in 2017
- Canada, Netherlands, the UK and the US have the highest allocation to domestic bonds, while Switzerland has the highest foreign bond exposure

DB/DC split (P7)

DC on the rise

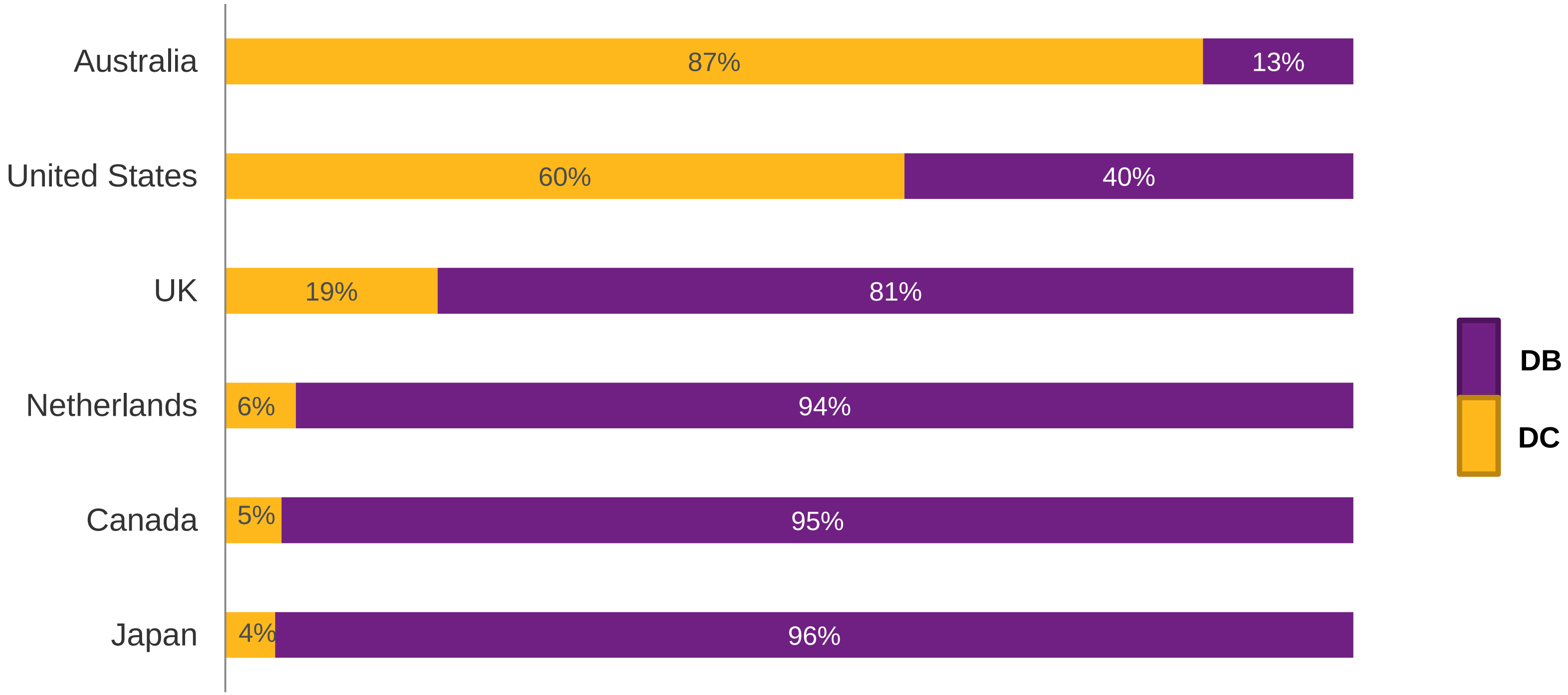


Source: Willis Towers Watson and secondary sources

- During the last ten years, DC assets have grown by 5.6% pa while DB assets have grown at a slower pace of 3.1% pa.
- The growth rate of DC assets for the last 20 years is 7.9% pa and 4.5% pa for DB assets

Note: DC assets in Switzerland are cash balance plans where the plan sponsor shares the investment risk and all assets are pooled. There are no pure DC assets where members make an investment choice and receive market returns on their funds. Therefore, Switzerland is excluded from this analysis.

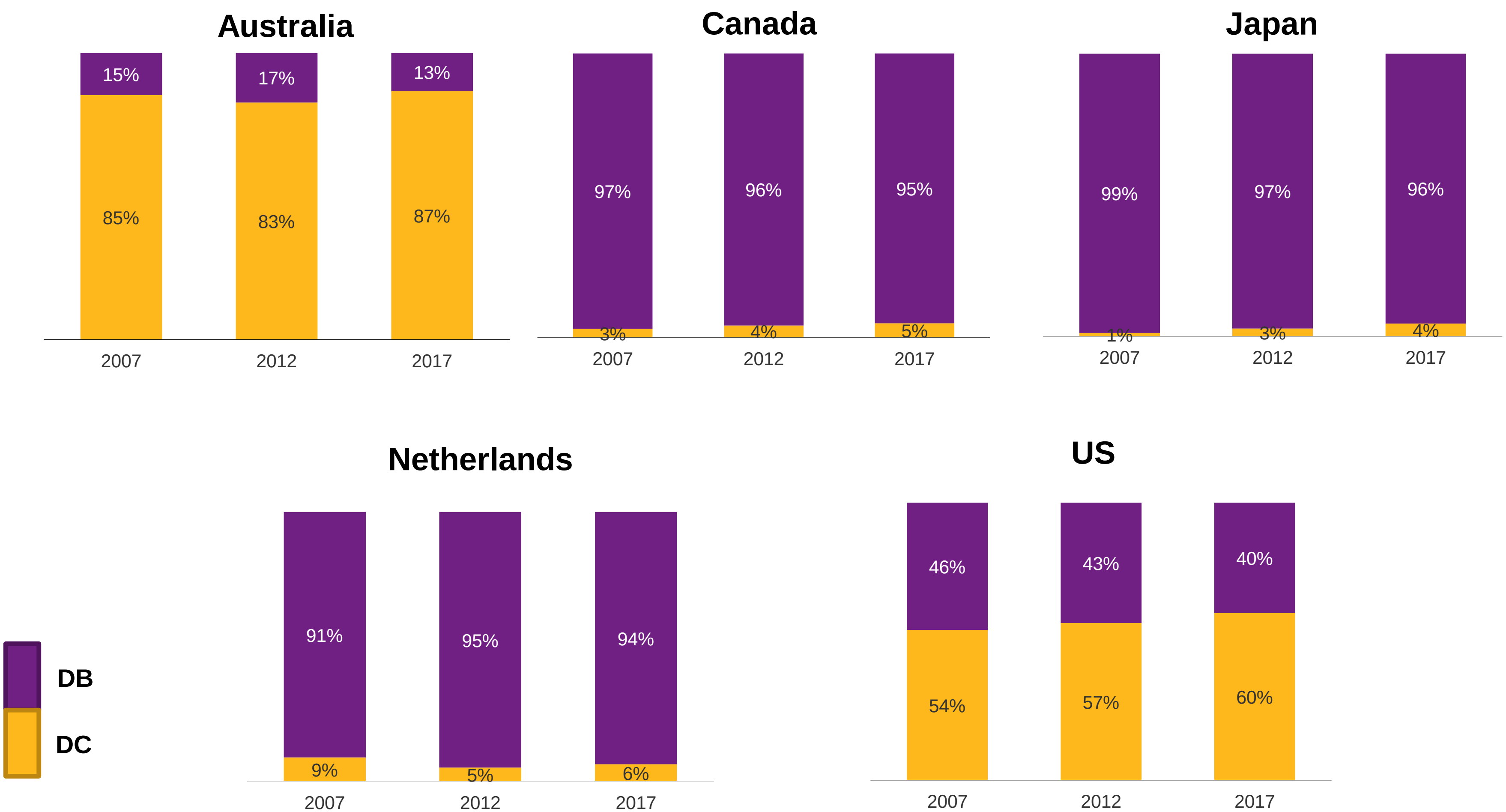
DB/DC split in 2017



Source: Willis Towers Watson and secondary sources

Note: The majority of pension fund assets in Switzerland are DC and take the form of cash balance plans, whereby the plan sponsor shares the investment risk and the assets are pooled. Pure DC assets have only recently been introduced in Switzerland and, although they have seen strong growth, they are not yet large enough to justify inclusion in this analysis

DB/DC split over the last ten years



Source: Willis Towers Watson and secondary sources

Notes: The majority of pension fund assets in Switzerland are DC and take the form of cash balance plans, whereby the plan sponsor shares the investment risk and the assets are pooled. Pure DC assets have only recently been introduced in Switzerland and, although they have seen strong growth, they are not yet large enough to justify inclusion in this analysis. In January 2017, the UK's Office for National Statistics stated that the figures previously disclosed for DC entitlements were significantly overestimated. As a result, we do not have confidence in making comparisons with prior years and so have omitted this chart.

Methodology

Asset estimation

- In this analysis we seek to provide estimates of pension fund assets (i.e. assets whose official primary purpose is to provide pension income). This data comprises:
  - Hard data typically as of year-end 2016 (except for Australia and Brazil which is from June 2017) collected by Willis Towers Watson and from various secondary sources
  - Estimates as at year-end 2017 based on index movements
- Before 2006, we focused only on 'institutional pension fund assets', primarily 2nd pillar assets (occupational pensions). Since 2006, the analysis has been slightly widened, incorporating DC assets (IRAs) within US's total pension assets. The objective was to better capture retirement assets around the globe and expand the analysis into the 3rd pillar (individual savings) universe, which is primarily being used for pensions purposes in many markets. Furthermore, this innovation enables us to estimate the global split between DB and DC assets
- In the 2016 edition of the GPAS Australian assets started to include Self-Managed Super Fund (SMSF) assets. SMSF represent almost a third of Australia's pension assets
- The source for UK pension data was changed this year from the Official National Statistics (ONS) to a variety of publicly available sources. This change was prompted by methodological changes announced by the ONS in January 2017
- Due to unavailability of pensions data in China, the study collects information on Enterprise Annuity (Pillar II) assets only. Data relating to Pillar I assets - social pooling (DB) and individual accounts (DC) - is very limited and therefore not included. The National Social Security Fund pension assets (c. US$349 billion at December 31, 2016) are also not included as it is considered as a reserve fund and separate from the pension system

Comparison with GDP

- This section compares total pension fund assets within each market to GDP sourced from the IMF

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