Thinking Ahead Institute

Global Pension Assets Study | 2023

Thinking Ahead Institute
An innovation network founded by WTW

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 mobilise capital for a sustainable future. The Institute's members comprise around 50 asset owners and asset managers with collective responsibility for around USD 16 trillion. It is an outgrowth of WTW Investments' Thinking Ahead Group and more research is available on its website.

The Thinking Ahead Group research team

Marisa Hall

Tim Hodgson

Roger Urwin

Paul Deane-Williams

Jessica Gao

Andrea Caloisi

Isabella Martin

Anastassia Johnson

Executive summary

Overview and key findings

Overview

P22

The study covers 22 pension markets in the world (P22). They have pension assets of **USD 47,861 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 43,838 bn**

P7 markets

Australia, Canada, Japan, Netherlands, Switzerland, UK, US

92%

of P22 assets are in the seven largest markets

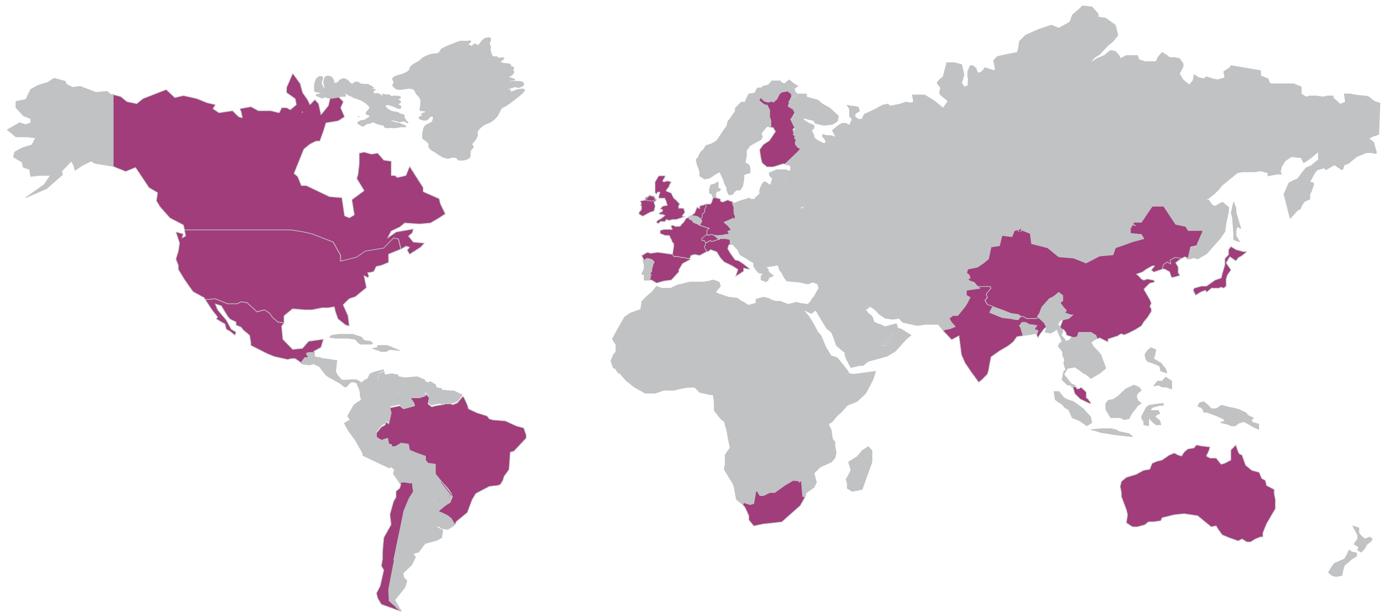
P195

Outside the P22 we estimate there is an additional USD 3-5 tn of pension assets

76%

The Gini coefficient of global pension assets reflecting the concentration in few markets

P22 markets



Overview of P22 markets

USD 47,861 bn Total P22 assets estimated to year end 2022

P22

64%

The US is the largest market, with a share of 63.6% of P22 assets, followed by Japan and Canada with 6.5% and 6.0% respectively

76%

The US, Japan and Canada represent 76.1% of all pension assets

-16.7%

%y/y decrease in 2022 P22 assets from USD 57,452 bn the previous year

-17.4%

Return for a 60% global equities / 40% global bonds reference portfolio as of December 2022 (in USD)

62% Ratio of pension assets to GDP of these economies

The P22 assets estimated growth rate of US, Japan and Canada is -16.8%, -16%, -12.5% respectively in 2022 (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

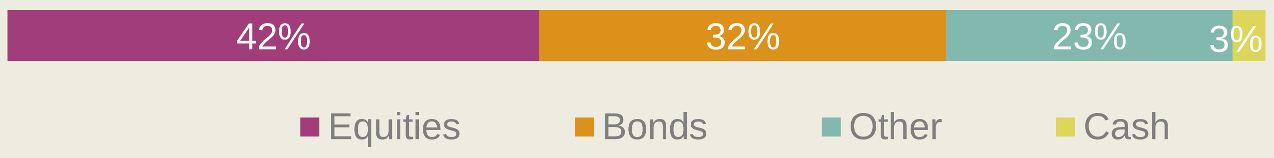
Overview of P7 markets

Asset allocation

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

Japan, Netherlands and the UK have higher allocation to bonds

Average global asset allocation of the seven, largest markets at the end of 2022



The asset allocation pattern has changed since 2002. Allocation to equities and bonds has decreased while investments in other assets grew during the same period.

DB/DC split

55% **% of DC assets represented in total P7 pension assets**

6.5% Growth rate of DC assets in the last ten years

2.1% Growth rate of DB assets in the last ten years

DC is dominant in Australia and the US. Canada, historically only DB, is now showing an increasing allocation towards DC

P7

Four big themes for 2023

A new era

A new era is rapidly unfolding, potentially marking the end of cheap money and a long period of low volatility.
2022 was a year of consequences with unparalleled geopolitical tension, turbulent economic environment and rapid tightening of monetary policy. A period of the economic cycle with a disinflationary headwind has come to an end. Asset owners may find the next period uncomfortable. Regime change will become more apparent during 2023.

Benchmarks

Surging data and benchmarks support a better understanding of relative positioning and best practice
The market has had decades of developing disciplines in financial reporting; but only one decade for non-financial reporting. There is huge scope for reporting and investing standards to become better disciplined, consistent and valuable but it will take a highly coordinated effort by the large global industry bodies, and stronger disciplines in organisations' reporting and accountability.

Collaboration

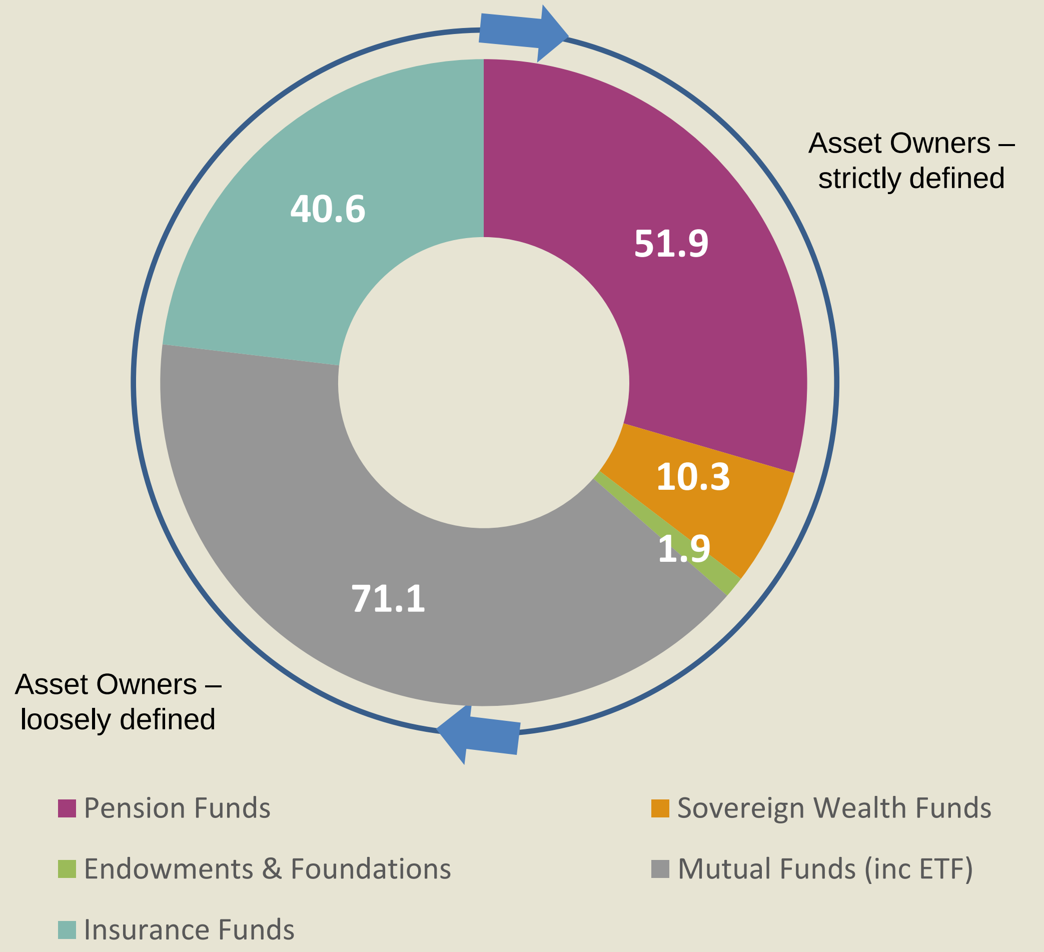
Investment organisations move from isolated models to versions that recognize the benefits of collaborations in the value chain
There is a big shift in priorities towards active ownership activities which is enabled with deeper AO-AM engagement and the rise of sustainability NGOs like PRI. Leadership styles are evolving with systems leadership particularly well-placed to produce change in collective action settings.

Climate

Asset owners are getting ready for the climate challenges, new regulations and reporting rules
Disruptions from climate change contribute to a significant part of the investment risks asset owners will be facing and many asset owners joined the Race to Zero. With the rolling out of new sustainability-related regulations and climate reporting becoming more demanding, asset owners need to be watchful when rebalancing their finite resources. Rightsizing in strategies and resource allocation becomes crucial.

Global asset owner landscape

Asset owners globally control USD 176 trillion



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

What is an asset owner?

An asset owner has four qualifying characteristics:

- Works directly for a defined group of beneficiaries/savers/investors as the manager of their assets in a fiduciary capacity under delegated responsibility
- Works with a sponsoring entity (government, government affiliate, company or not-for-profit)
- Works within explicit law and possesses an implicit societal license to operate because of its societal trust and legitimacy
- Delivers mission-specific outcomes to beneficiaries and stakeholders in the form of various payments or benefits into the future

Read more about asset owners

The Asset Owner of Tomorrow

Provides insight into the complexity of being an asset owner today.

The AO 100 survey

The survey provides analysis of the 100 largest asset owners in the market - the most influential capital on the planet

Spotlight subjects (1)

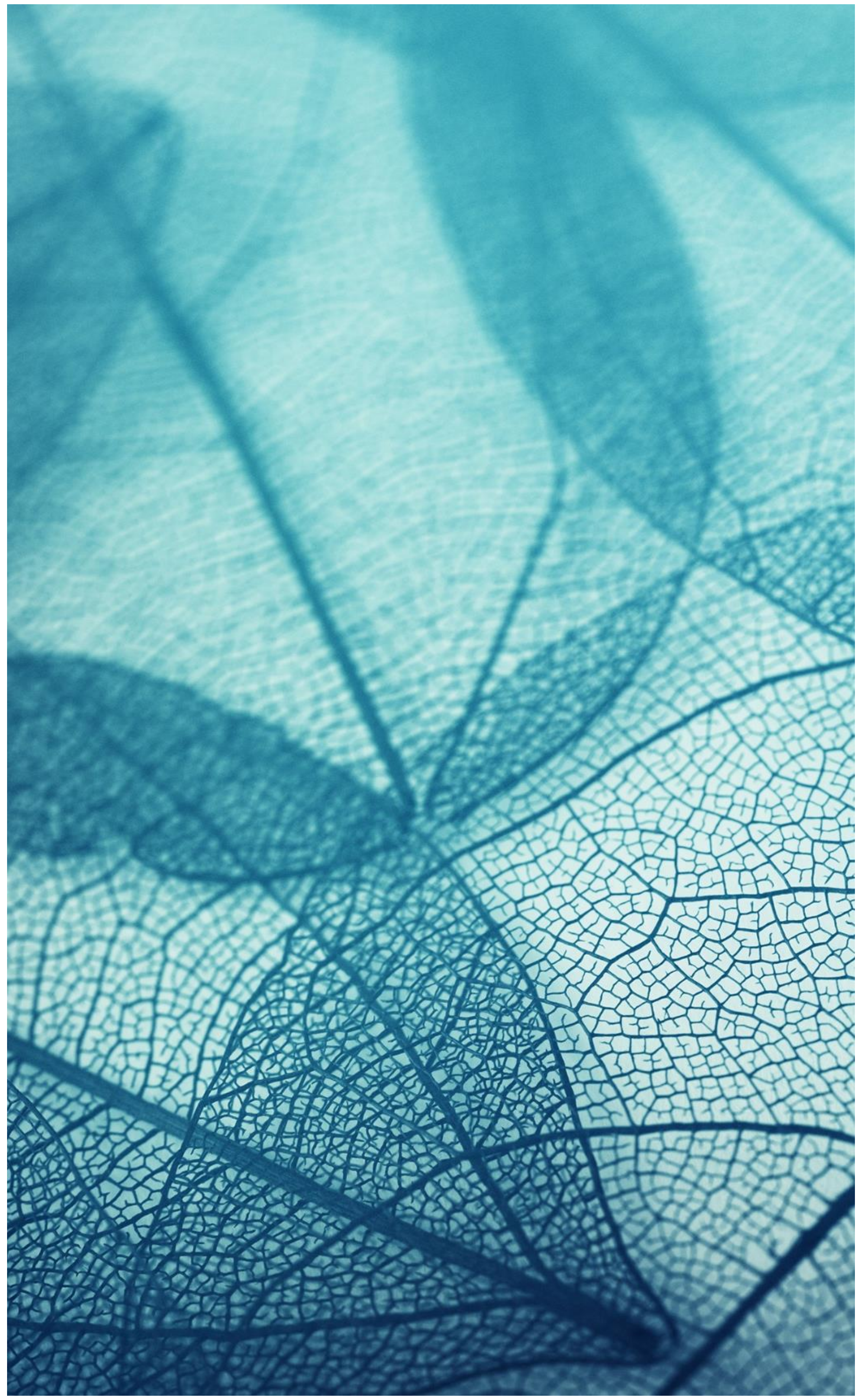
Macro uncertainty and systemic risk

Uncertainty has been one of the dominant themes in the investment industry in 2022 with heightened geopolitical tension entangled with slower real economic growth. Inflation rose to its highest level in three decades following extraordinary stimulus measures in response to the pandemic and disruptive geopolitical events. Global market turbulence has been immediately apparent, while the impact on the underlying economic context will only reveal itself over the medium or long term. If the commodity price shock is here to stay, it could lead to different challenges to the global economy.

Asset owners are expected to face the possibility of lower-for-longer returns in the coming economic cycle which has raised solvency concerns and prompted funds to increase allocations to alternative assets. With their low correlation to traditional asset classes, alternatives may help asset owners to lessen inflation-induced volatility. As funds attempt to define and access the asset classes of tomorrow[1], alternatives will play an important role in future portfolios.

Systemic risks in the future are increasingly from climate, environmental and social sources. Pricing these risks is near impossible (high uncertainty/low tractability), but it is likely to be orders of magnitude bigger than prior versions. There is a potential for a global 'polycrisis' where systemic risks combine and synchronise with consequences for risk amplification and acceleration. Organisational resilience will bring a new perspective to an economy that spent a decade improving efficiency and is needing to become adaptable to a more difficult operating environment.

Spotlight subjects (2)



Investment horizon, fund maturity and pension design

Asset owners have endured a difficult year in 2022 but will be facing even more substantial challenges in the coming years. After enjoying a decade of growth with relatively low inflation and expansionary monetary policies, pension asset values have declined considerably in 2022.

The majority of asset owners are focused on the long horizon and have the resilience to cope with short-term declines. Of course, but they may need to re-set strategies for the new conditions ahead and their future outlook is uncertain. A minority of asset owners are relatively mature DB pension funds and these will have been tested in their balance sheet management – the early signs are that for most of this special group pension fund solvency hasn't suffered although liquidity was challenging.

Horizon also comes into play when looking at ESG and investing for sustainable impact. While open DB schemes, sovereign funds and DC funds with long-term maturity are developing their capabilities to navigate the complex landscape of sustainable investing, this is not a particularly significant issue for closed DB schemes with a short-term maturity and declining asset size.

Spotlight subjects (3)

Stewardship, fiduciary duty and the future of ESG

Engagement activities enable organisations to have a real world impact as they decarbonise their portfolios or businesses, but they can be resource-heavy endeavours. Outsourcing is a viable option for budget-constrained organisations. We expect third-party provider strategies to come under growing scrutiny. Emerging standards and better data have led to better reporting on engagement activities and have increased accountability in the industry.

The race to net zero is stretching the window of the interpretation of fiduciary duty. With beneficiaries demanding decent investment returns and a more sustainable future, the investment industry currently finds itself in a difficult space, caught between the progressive views of society (its customers) and the lagging interpretations of fiduciary duty. We expect the interpretation and implementation of fiduciary duty to undergo increased scrutiny in this decade.

The ‘ESG unstoppable train’ has travelled far but is at risk of being dragged down by debates surrounding it from greenwashing to fiduciary duty. Commodity price hikes added inflationary pressures to the global economy when countries prepare to tackle climate change and inequality. Despite setbacks, the direction of travel has remained clear. The energy crisis in Europe could spur a faster transition to clean energy even with needing short-term fossil fuel solutions. At the heart of the landmark US Inflation Reduction Act is a package addressing climate change issues and speeding up the energy transition. Looking into the future of ESG, organisations need to consider an evolving ESG landscape and readjust their strategies to navigate the shift.

Section 1 | Asset size

Asset sizes

P22

Market	Total Estimated Assets 2022 (USD billion)	Assets/GDP ratio (%)[7]
Netherlands	1,641	165.63%
Switzerland[1]	1,074	133.00%
Canada	2,880	130.91%
Australia	2,137	123.87%
US[2]	30,439	121.58%
Finland	240	85.33%
UK	2,568	80.30%
Japan[3]	3,099	72.07%
South Africa	245	59.50%
Malaysia	254	58.43%
South Korea	921	53.11%
Hong Kong	190	51.45%
Chile	148	47.47%
Ireland	166	31.97%
Mexico	291	20.40%
Brazil[4]	233	12.29%
Germany[5]	415	10.29%
Italy	205	10.28%
India	173	4.98%
France	125	4.48%
Spain	36	2.62%
China[6]	382	2.09%
Total	47,861	**61.7%**

[1] Only includes autonomous pension funds. Does not consider insurance companies assets.
[2] Includes IRAs.
[3] Does not include the unfunded benefit obligation of corporate pension plans (account receivables).
[4] Only includes pension assets from closed entities.
[5] Only includes pension assets for company pension schemes.
[6] Only includes Enterprise Annuity assets.
[7] The Assets/GDP ratio for individual markets are calculated in local currency terms, and the total Assets/GDP ratio is calculated in USD.

Source: Thinking Ahead Institute and secondary sources

Pension asset growth versus market returns

Period to end December 2022	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	-16.7%	-17.1%	-17.4%
5-year	2.4%	2.5%	3.2%
10-year	4.2%	4.3%	5.3%
20-year	6.0%	5.8%	6.4%

Total pension asset growth has been largely 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.

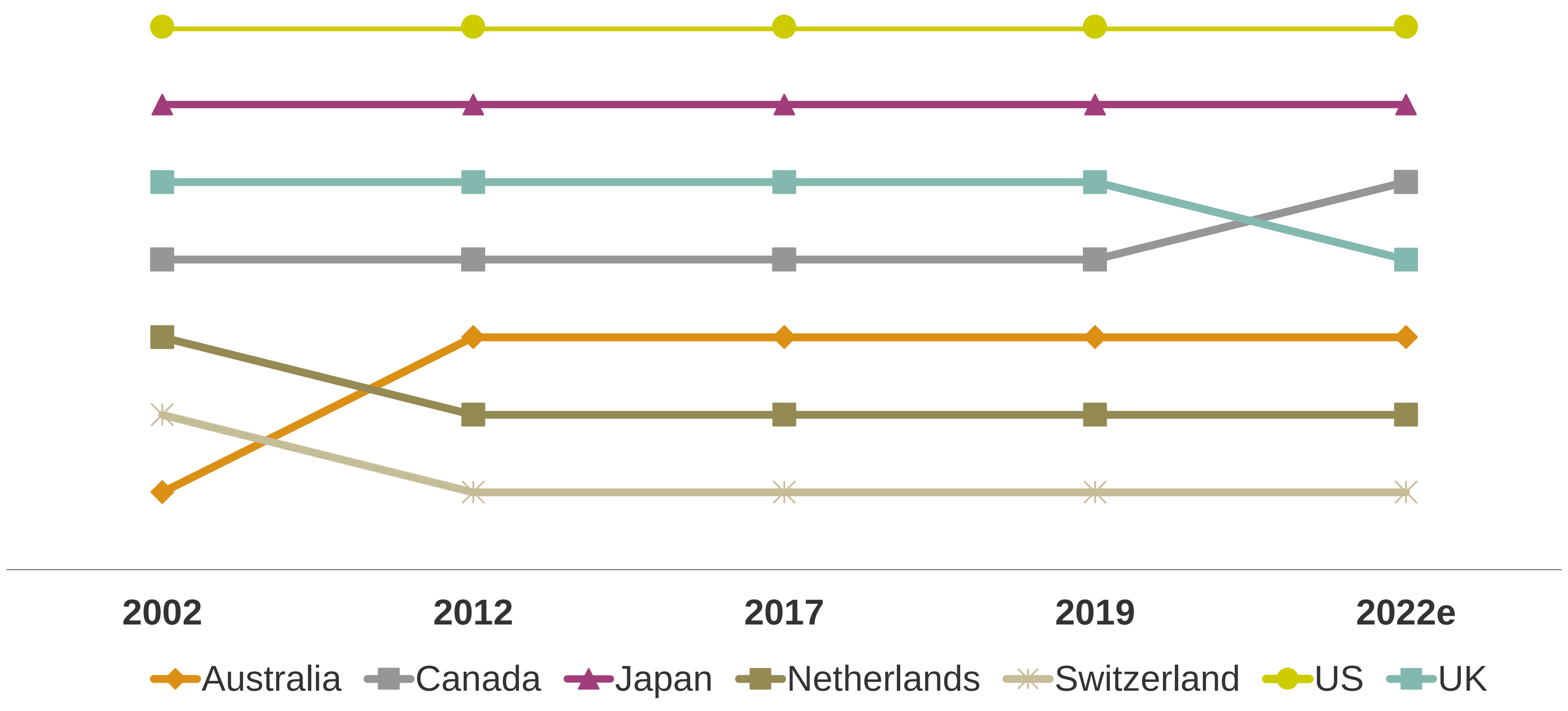
Source: Thinking Ahead Institute and secondary sources
Growth in all countries not adjusted for the change from using P11 to P22 over the period
Figures for P7 are like-for-like in the 7 countries selected

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: USD bn assets

P7

Canada Market reaches #3 by overtaking UK* in 2022



Evolution of assets under management (USD bn) over the past two decades

2002	
US	8,968
Japan	2,289
UK	1,120
Canada	754
Netherlands	503
Switzerland	333
Australia	292

2012	
US	16,848
Japan	3,166
UK	2,879
Canada	2,510
Australia	1,476
Netherlands	1,252
Switzerland	736

2022e	
US	30,439
Japan	3,099
Canada	2,880
UK	2,568
Australia	2,137
Netherlands	1,641
Switzerland	1,074

*UK pension assets have a large proportion invested in domestic bonds which had the worst performance in 2022.

Source: Thinking Ahead Institute and secondary sources

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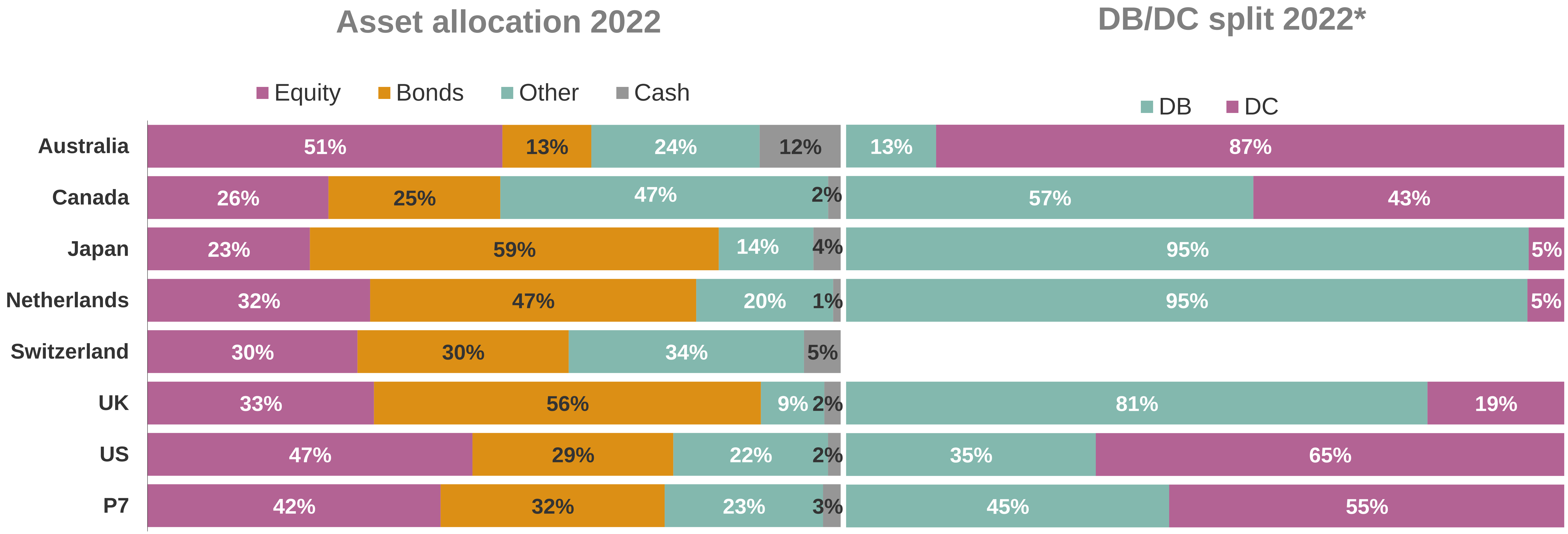
Asset allocation and DB/DC split

P7



Source: Thinking Ahead Institute and secondary sources

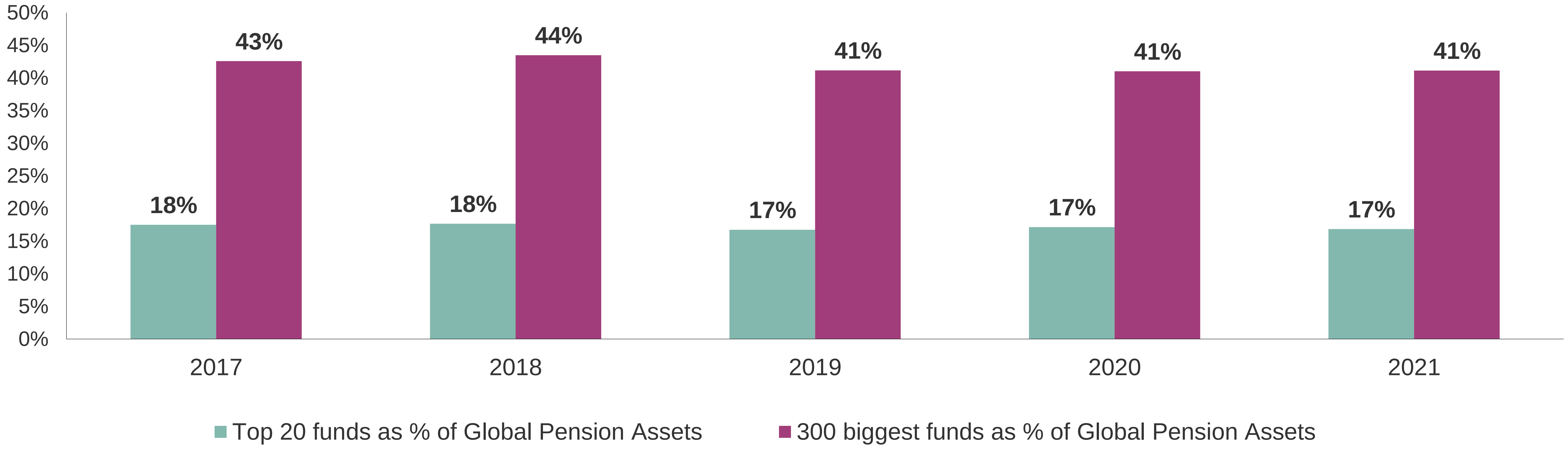
Numbers may not add up 100% due to rounding

*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 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.

*Canadian DC assets now include individual accounts. Historical figures have been restated.

Concentration of assets in top 300 pension funds

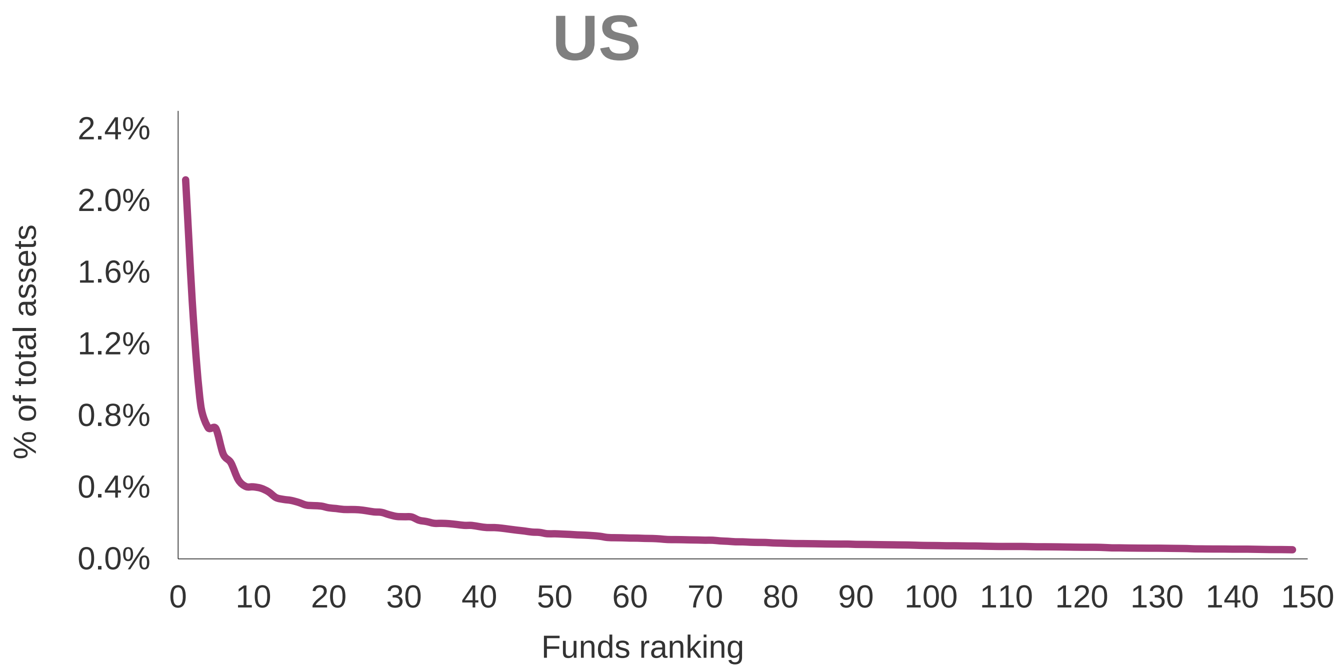


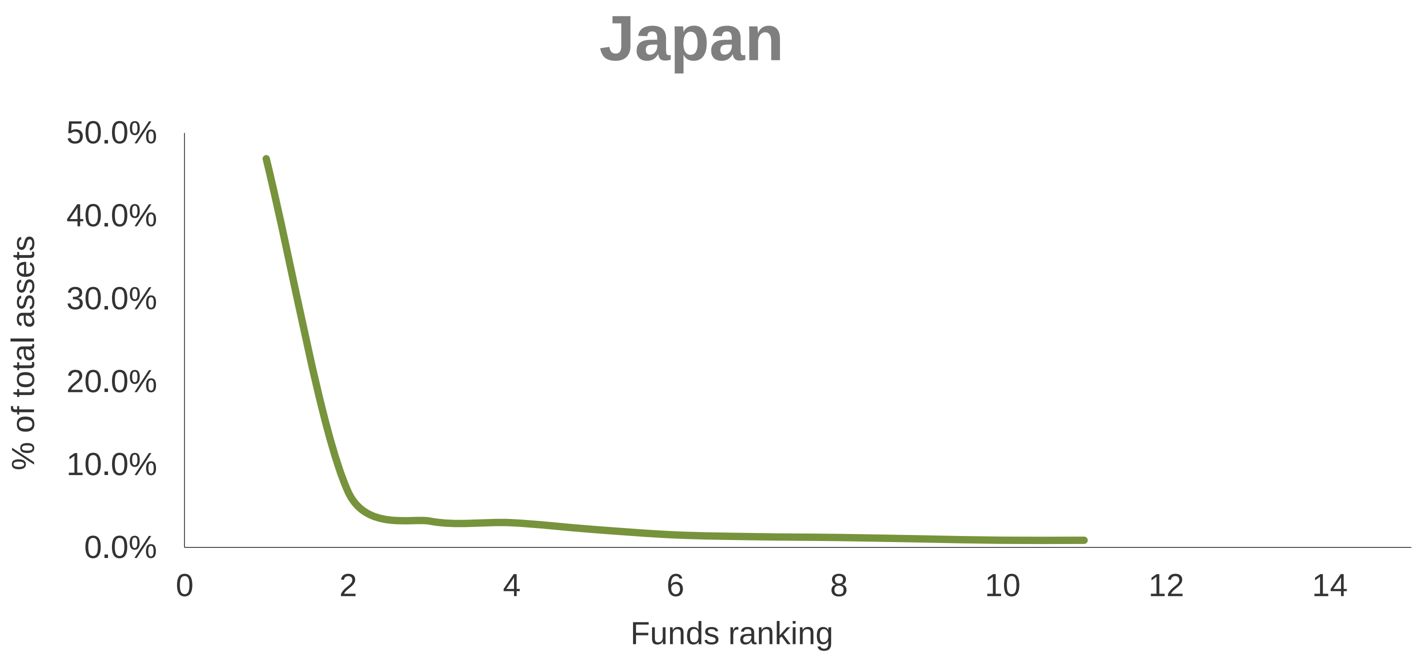
The annual Pension & Investments / Thinking Ahead Institute world 300 Analysis ranks the world's largest 300 pension funds by assets.

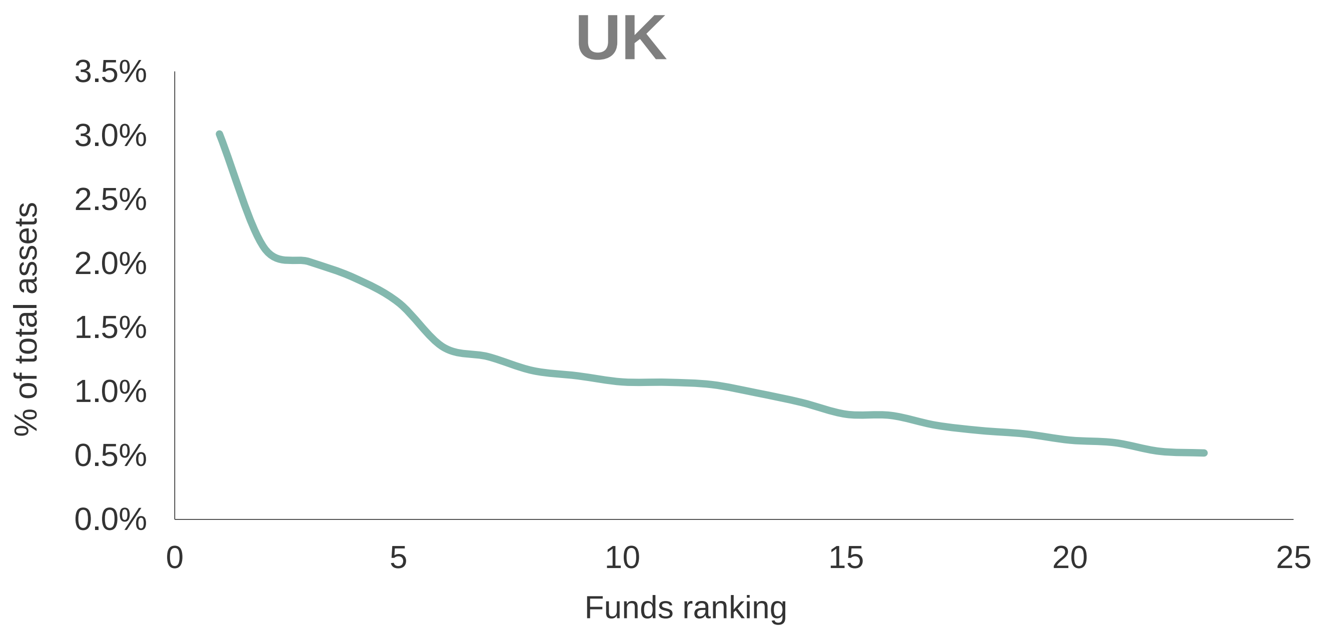
The assets of the top 300 pension funds represent 41% of the total global pension assets and the top 20 pension funds account for 17% of total global pension assets.

Source: Thinking Ahead Institute and secondary sources

Relative size of top pension funds by market







The top ten US pension funds represent 8.2% of total US assets

The top ten Japanese pension funds account for 67.8% of total Japanese assets. This is because the Government Pension Investment Fund that represents 46.9% of Japan's pension assets.

In the UK, the top ten pension funds represent 16.7% of the total UK pension assets. Among them, 11.3% are private pension funds and the 5.4% are state-sponsored pension funds.

Source: Thinking Ahead Institute and secondary sources

P22

A decade of growth with turbulence

In 2022 global pension assets are estimated to have reached USD 47,861 billion, a decrease of almost -17% in a year

The US is the largest pension market followed, at significant distance, by the Japan and Canada. Together, these three markets account for over 76% of all pension assets

Market	Total Assets (USD billion) Year end 2012	Total Assets (USD billion) Year end 2022e	Growth rate (USD) 10-year CAGR
Australia	1476	2,137	3.8%
Brazil	331	233	-3.5%
Canada	2510	2,880	1.4%
Chile	162	148	-0.9%
China	76	382	17.5%
Finland	198	240	2.0%
France	154	125	-2.1%
Germany	468	415	-1.2%
Hong Kong	102	190	6.4%
India	79	173	8.2%
Ireland	106	166	4.6%
Italy	138	205	4.1%
Japan	3166	3,099	-0.2%
Malaysia	201	254	2.4%
Mexico	181	291	4.8%
Netherlands	1252	1,641	2.7%
South Africa	253	245	-0.3%
South Korea	390	921	9.0%
Spain	43	36	-1.7%
Switzerland	736	1,074	3.8%
UK	2879	2,568	-1.1%
US	16848	30,439	6.1%
Total (USD)	31,750	47,861	4.2%

Total assets are in USD billion
CAGR is USD.

Source: Thinking Ahead Institute and secondary sources

Relative weights of markets

P22

Over the past decade, the weights of China, Hong Kong, India, South Korea and US have increased relative to other markets in the study

While the weight of Ireland, Italy, Mexico and Spain remained unchanged

Relative weights of each market

Market	2012	2022e	
Australia	4.6%	4.5%	▼
Brazil	1.0%	0.5%	▼
Canada[1]	7.9%	6.0%	▼
Chile	0.5%	0.3%	▼
China	0.2%	0.8%	▲
Finland	0.6%	0.5%	▼
France[1]	0.5%	0.3%	▼
Germany	1.5%	0.9%	▼
Hong Kong	0.3%	0.4%	▲
India	0.2%	0.4%	▲
Ireland	0.3%	0.3%	–
Italy	0.4%	0.4%	–
Japan	10.0%	6.5%	▼
Malaysia	0.6%	0.5%	▼
Mexico	0.6%	0.6%	–
Netherlands	3.9%	3.4%	▼
South Africa	0.8%	0.5%	▼
South Korea	1.2%	1.9%	▲
Spain	0.1%	0.1%	–
Switzerland	2.3%	2.2%	▼
UK[1]	9.1%	5.4%	▼
US	53.1%	63.6%	▲
Total	100.0%	100.0%	

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

Source: Thinking Ahead Institute and secondary sources

P22

Growth rates in USD

During the last ten years, the fastest growing pension markets have been China (17.5%), South Korea (9.0%) and India (8.2%), in USD terms

Brazil, France and Spain have had the slowest rates of growth in USD terms since 2012 (-3.5%, -2.1% and -1.7% respectively)

Growth rates to 2022e (USD)

Market	1-year CAGR[2]	5 -year CAGR	10-year CAGR
Australia[3]	-6.3%	1.3%	3.8%
Brazil	5.5%	1.2%	-3.5%
Canada[1]	-12.5%	1.2%	1.4%
Chile	-13.7%	-6.9%	-0.9%
China	-6.6%	14.1%	17.5%
Finland	-17.7%	-0.2%	2.0%
France[1]	-19.1%	-5.4%	-2.1%
Germany	-22.4%	-2.9%	-1.2%
Hong Kong	-9.6%	2.9%	6.4%
India	-9.7%	5.6%	8.2%
Ireland	-15.9%	-1.2%	4.6%
Italy	-15.0%	1.1%	4.1%
Japan	-16.0%	0.0%	-0.2%
Malaysia	-8.3%	1.8%	2.4%
Mexico	2.1%	9.3%	4.8%
Netherlands	-21.1%	0.1%	2.7%
South Africa	-5.5%	-0.4%	-0.3%
South Korea	-15.2%	3.7%	9.0%
Spain	-14.8%	-3.2%	-1.7%
Switzerland	-14.8%	3.3%	3.8%
UK[1]	-30.4%	-3.4%	-1.1%
US	-16.8%	3.7%	6.1%
Average	-12.9%	1.2%	3.0%

Source: Thinking Ahead Institute 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.

Growth rates in local currency

Estimated five-year growth rates range from -3.2% pa in France to 15.5% pa in China

During the past ten years China's pension assets have grown the fastest, followed by those of India and South Korea, when calculated in local currency (18.6%, 12.7% and 10.8% respectively)

Growth rates to 2022e (LC)

Market	1-year CAGR[2]	5 -year CAGR	10-year CAGR
Australia	0.1%	3.0%	6.9%
Brazil	-1.2%	7.8%	6.1%
Canada[1]	-7.3%	2.7%	4.5%
Chile	-13.3%	-0.5%	5.0%
China	1.5%	15.5%	18.6%
Finland	-12.7%	2.1%	4.2%
France[1]	-14.2%	-3.2%	0.0%
Germany	-17.7%	-0.6%	0.9%
Hong Kong	-9.6%	2.9%	6.5%
India	0.5%	11.2%	12.7%
Ireland	-10.8%	1.1%	6.8%
Italy	-9.8%	3.4%	6.3%
Japan	-3.8%	3.2%	4.2%
Malaysia[3]	-3.2%	3.5%	6.4%
Mexico	-3.1%	9.1%	9.2%
Netherlands	-16.3%	2.5%	5.0%
South Africa	0.6%	6.2%	6.9%
South Korea	-10.1%	7.2%	10.8%
Spain	-9.7%	-0.9%	0.4%
Switzerland	-14.0%	2.1%	4.0%
UK[1]	-22.2%	-1.2%	1.8%
US	-16.8%	3.7%	6.1%
Average	-8.8%	3.7%	6.1%

Source: Thinking Ahead Institute 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

P22

Currency impact

In 2022, currencies that depreciated the most against the USD were the Japanese Yen (-12.7%), the British Pound (-10.6%) and the Indian Rupee (-10.1%)

On the other hand, only currency that rose against the USD was the Brazilian Real (6.8%)

Over longer periods, there has been a trend of strengthening USD relative to other major currencies. During the last ten years, no currency appreciated against the USD

Variation in FX rates against USD)

Market	1-year	5-year CAGR	10-year CAGR
Australia	-6.4%	-1.7%	-2.9%
Brazil	6.8%	-6.1%	-9.0%
Canada	-5.6%	-1.5%	-3.0%
Chile	-0.5%	-6.3%	-5.6%
China	-8.0%	-1.2%	-0.9%
Finland	-5.7%	-2.3%	-2.1%
France	-5.7%	-2.3%	-2.1%
Germany	-5.7%	-2.3%	-2.1%
Hong Kong	0.0%	-0.0%	-0.1%
India	-10.1%	-5.1%	-4.1%
Ireland	-5.7%	-2.3%	-2.1%
Italy	-5.7%	-2.3%	-2.1%
Japan	-12.7%	-3.1%	-4.2%
Malaysia	-5.3%	-1.6%	-3.8%
Mexico	-5.4%	0.2%	-4.0%
Netherlands	-5.7%	-2.3%	-2.1%
South Africa	-6.1%	-6.2%	-6.7%
South Korea	-5.6%	-3.3%	-1.6%
Spain	-5.7%	-2.3%	-2.1%
Switzerland	-0.9%	1.1%	-0.1%
UK	-10.6%	-2.2%	-2.9%

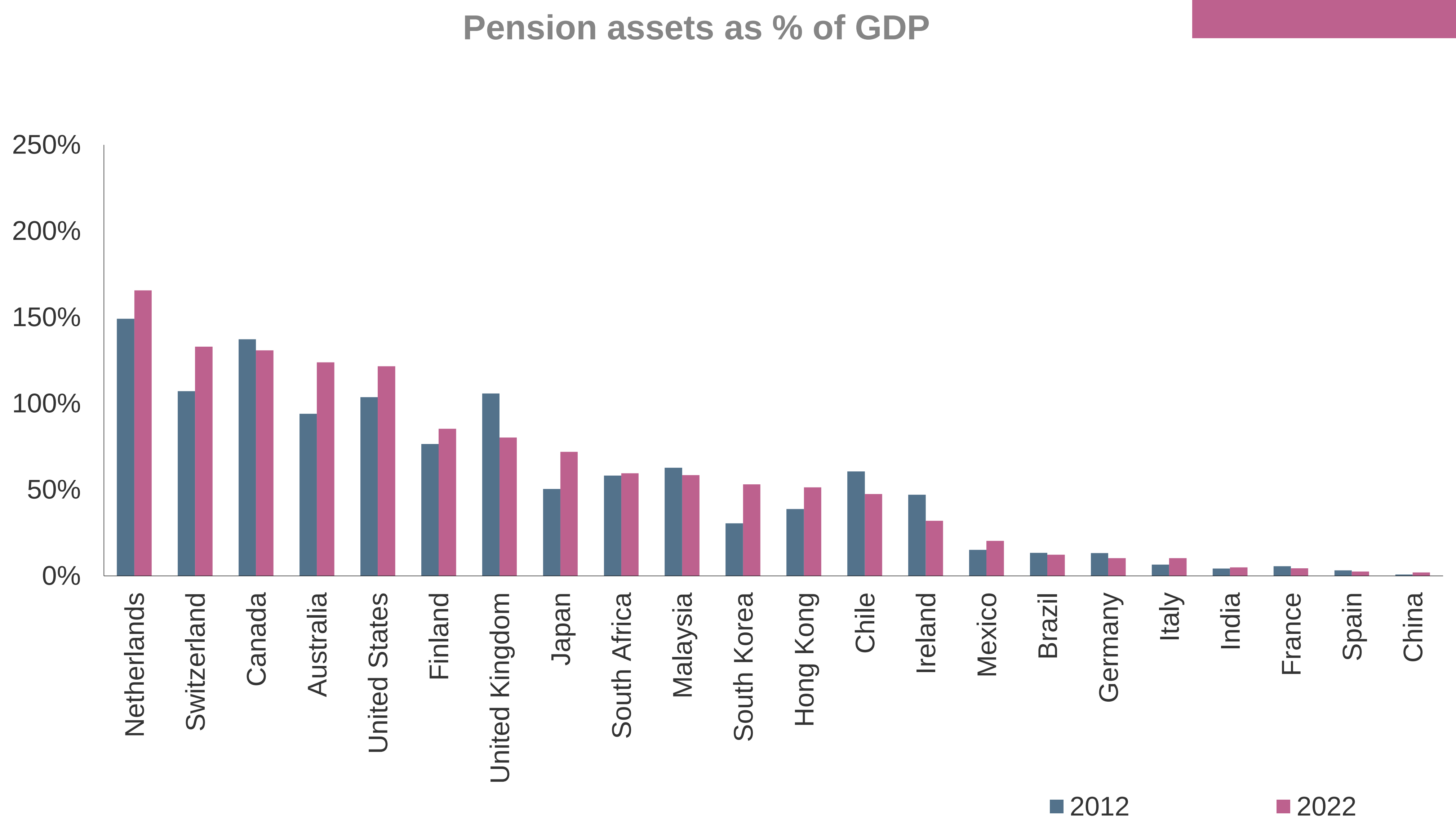
Source: Thinking Ahead Institute and secondary sources

P22

Pension assets vs GDP in local currency

Pension assets as % of GDP

Market	2012	2022e	Change[1]
Australia	94%	124%	30%
Brazil	13%	12%	-1%
Canada	137%	131%	-6%
Chile	61%	47%	-13%
China	1%	2%	1%
Finland	77%	85%	9%
France	6%	4%	-1%
Germany	13%	10%	-3%
Hong Kong	39%	51%	13%
India	4%	5%	1%
Ireland	47%	32%	-15%
Italy	7%	10%	4%
Japan	50%	72%	22%
Malaysia	63%	58%	-4%
Mexico	15%	20%	5%
Netherlands	149%	166%	16%
South Africa	58%	60%	1%
South Korea	31%	53%	23%
Spain	3%	3%	-1%
Switzerland	107%	133%	26%
UK	106%	80%	-26%
US	104%	122%	18%



[1] In percentage points, figures are rounded.

Source: Thinking Ahead Institute and secondary sources

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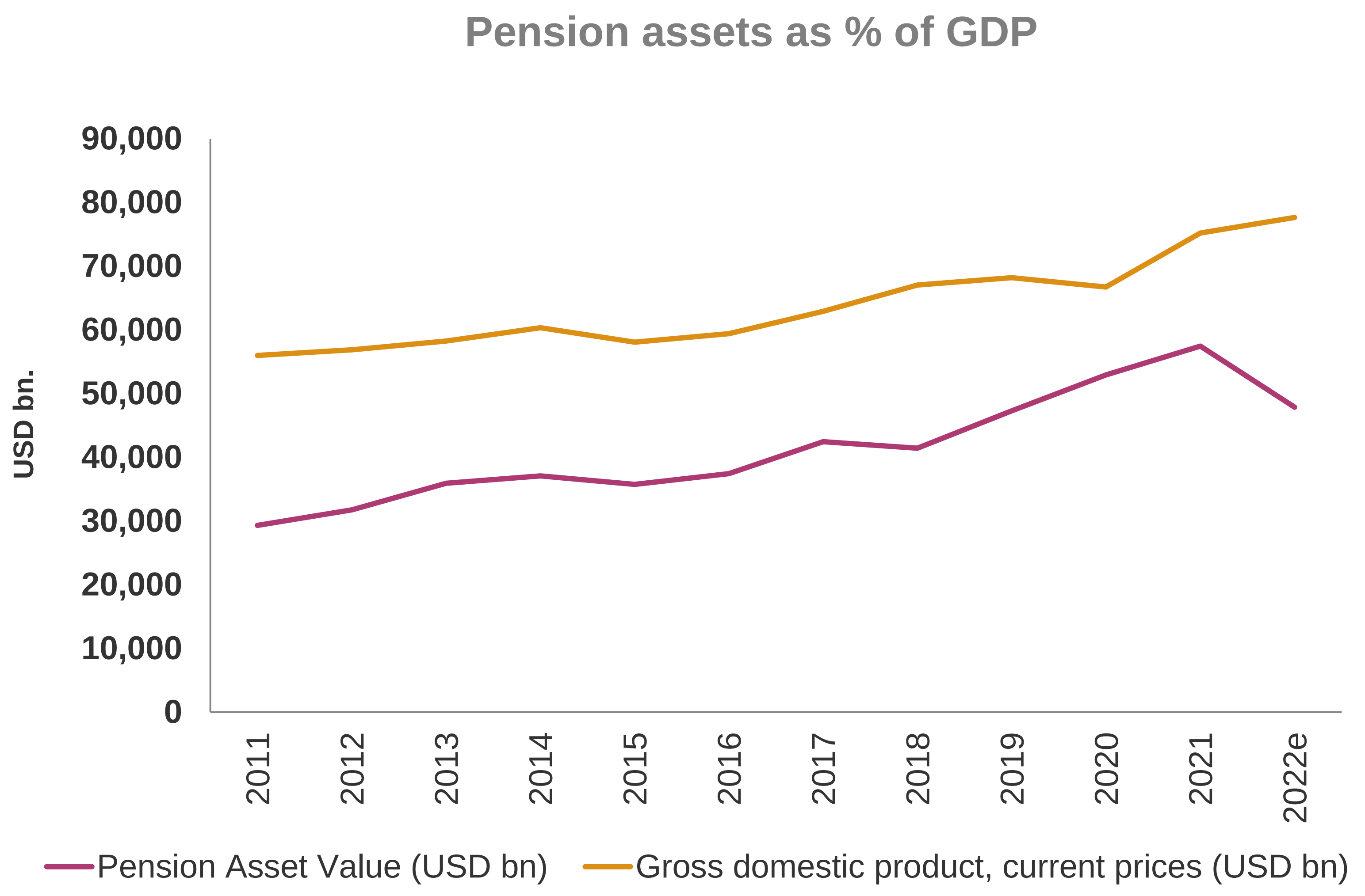
Pension assets vs GDP in USD

P22

The total pension assets to GDP ratio reached 61.7% at the end of 2022

The Netherlands has the highest ratio of pension assets to GDP (166%) followed by Switzerland (133%), Canada (131%), Australia (124%), the US (122%) and Finland (85%)

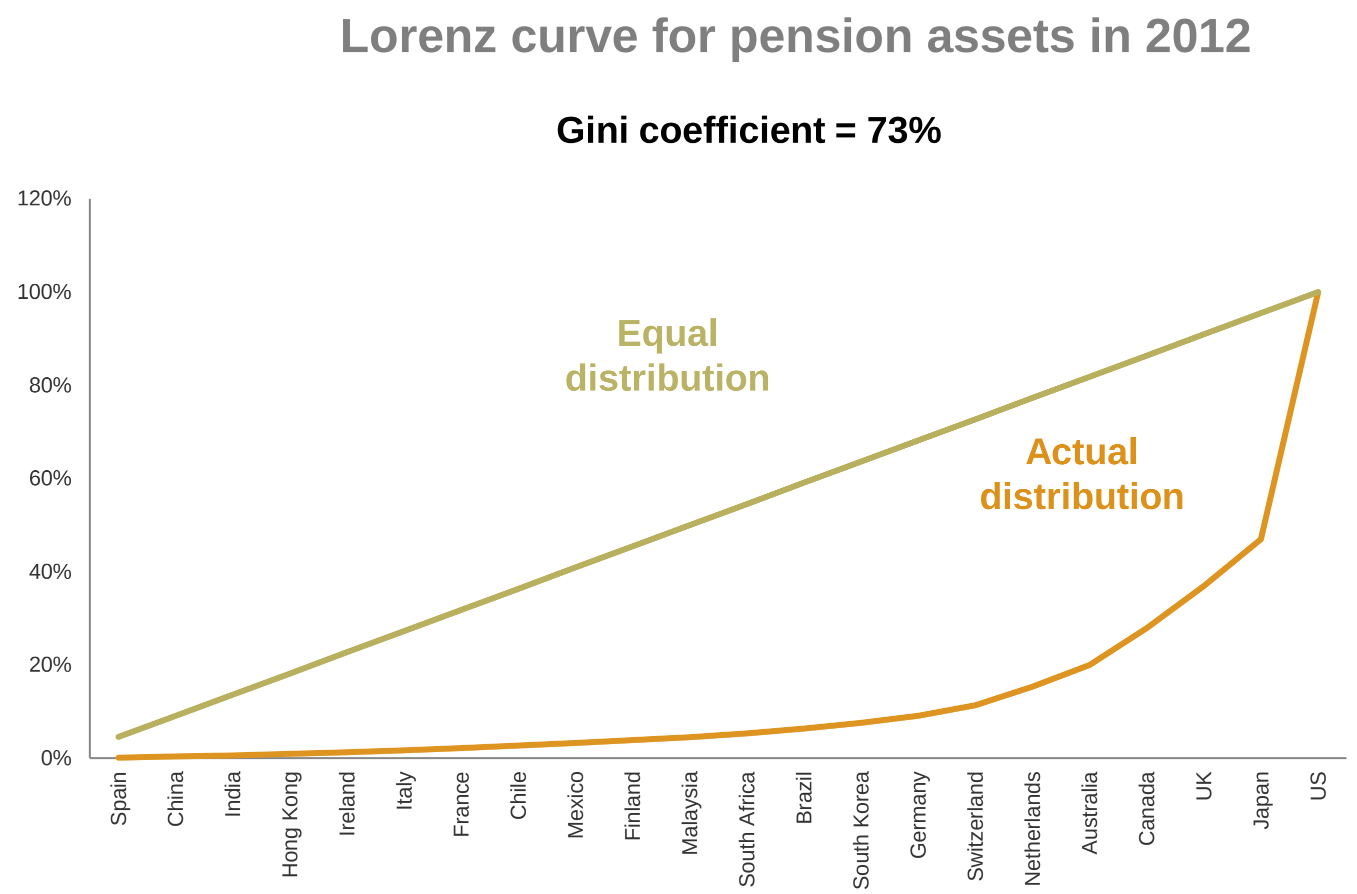
During the last ten years, the pension assets to GDP ratio increased the most in Australia, Switzerland South Korea and Japan (30, 26, 23 and 22 percentage points respectively). It declined the most in the UK, Ireland and Chile (26, 15 and 13 percentage points respectively)

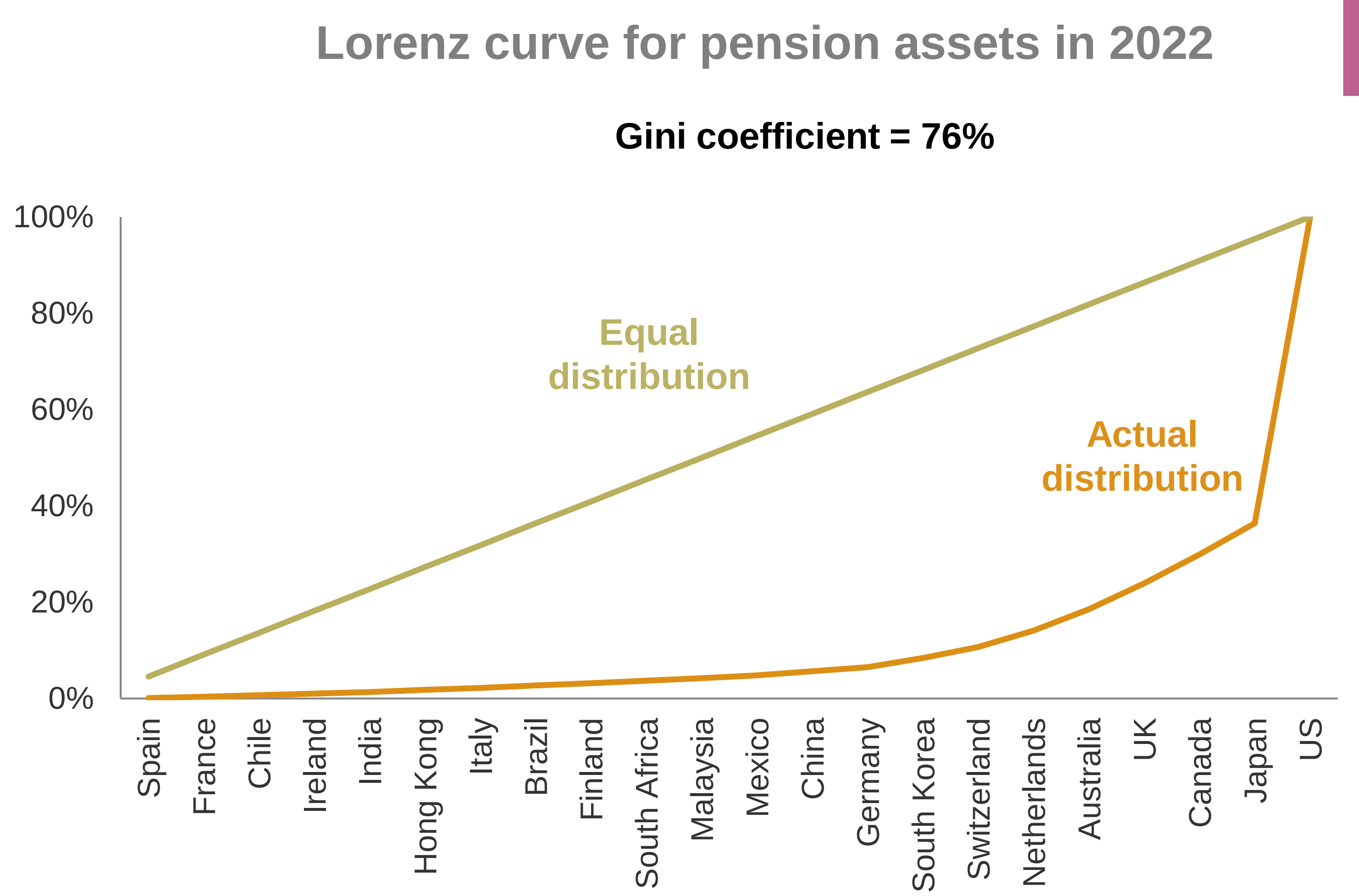


Source: Thinking Ahead Institute and secondary sources

Pension market concentration

P22





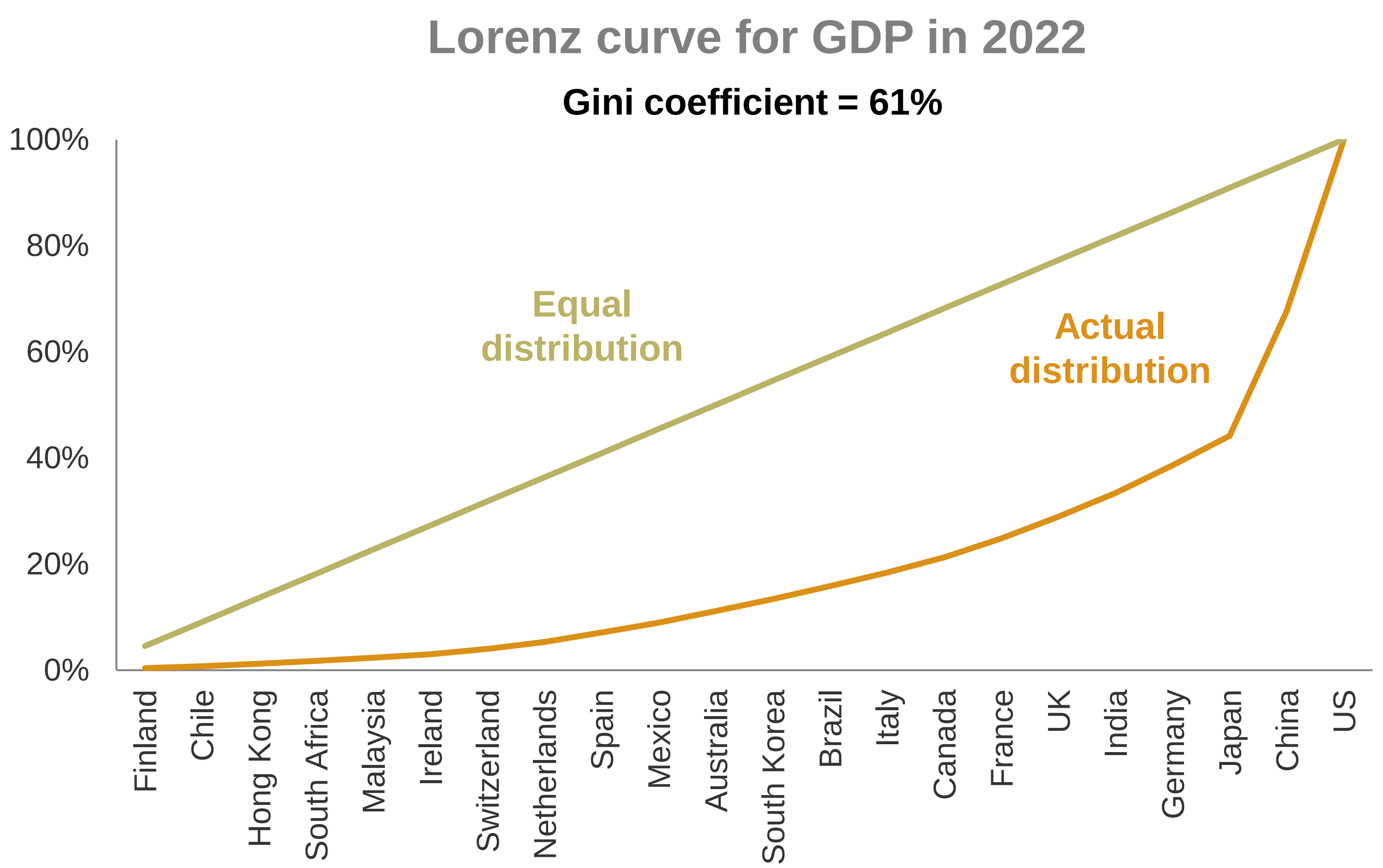
The Gini coefficient of global pension assets in 2022 was 75.7%. Pension assets are still concentrated in relatively few markets

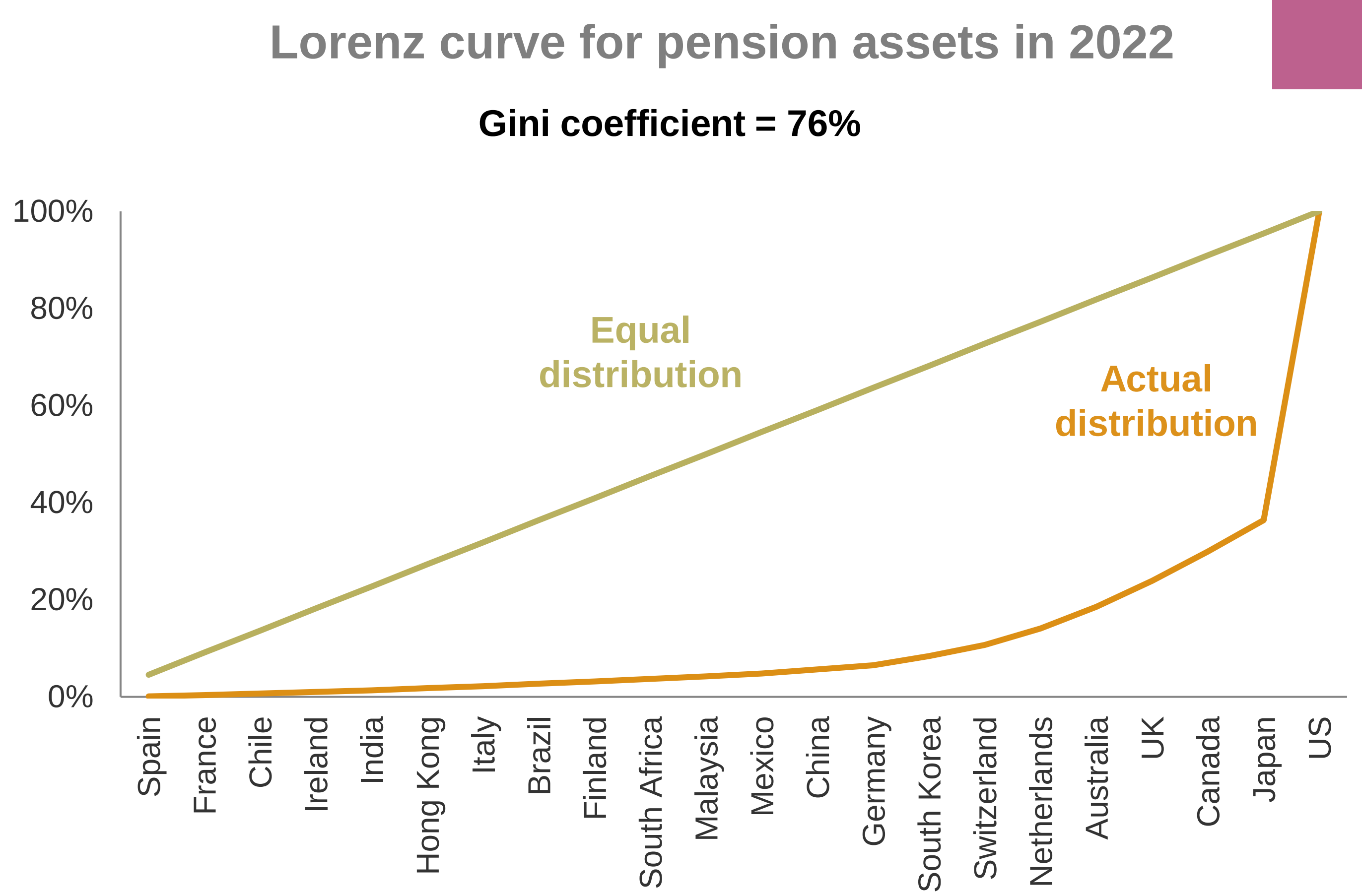
The global pension market has remained largely unchanged over the last 10 years. The Gini coefficient was 73.2% in 2012

Source: Thinking Ahead Institute and secondary sources

Compared with GDP

P22





The lower Gini coefficient for GDP (60.6%) relative to pension market size (75.7%) 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

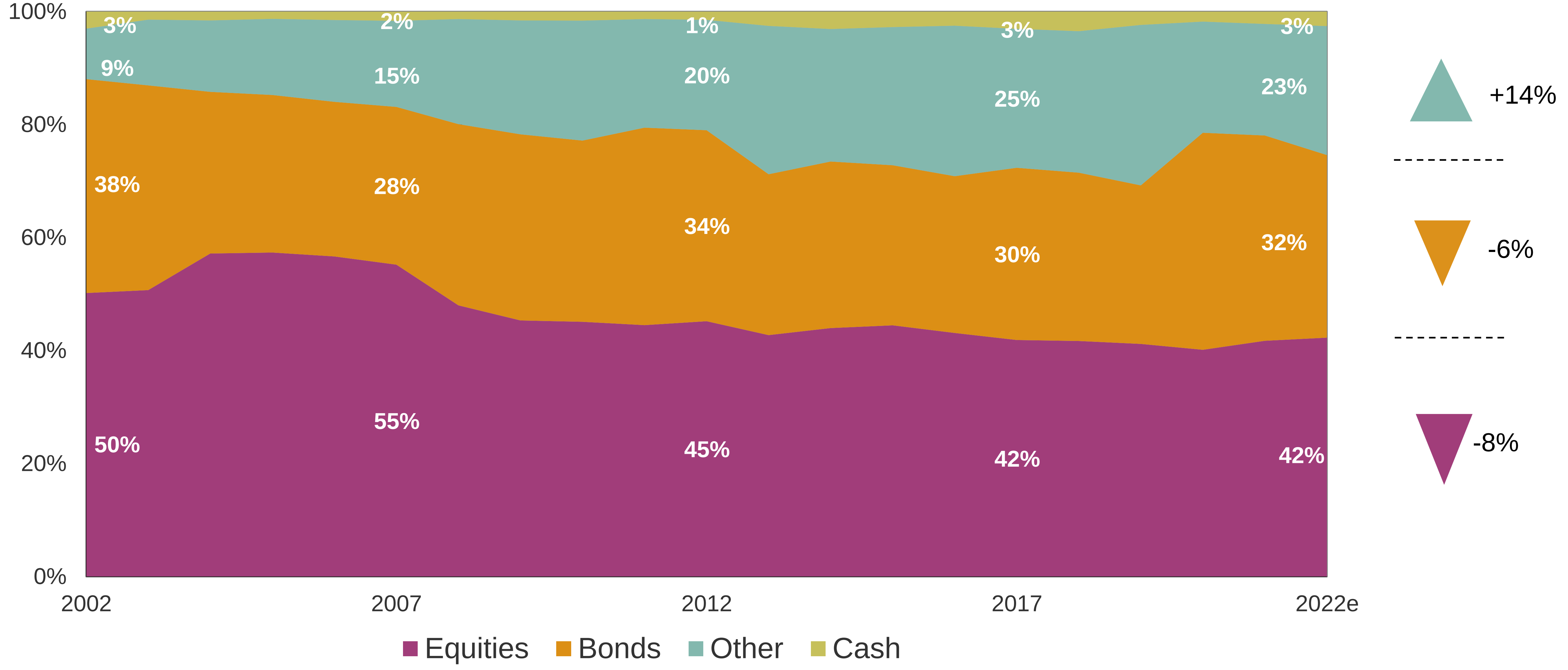
As a comparison, the Gini coefficient for GDP has increased over the last 10 years, from 55.9% in 2012 to 60.6% in 2022

Source: Thinking Ahead Institute and secondary sources

Section 2 | Asset Allocation

Aggregate P7 asset allocation from 2002 to 2022

P7



Since 2002 equity allocations have shrunk from 50% to 42% similar to the allocation to bonds that decreased from 38% to 32%. Allocation to other assets (real estate and other alternatives) has increased from 9% in 2002 to an estimated 23% at the end of 2022. Allocation to cash instruments remained stable at 3%.

Note: Numbers may not add up 100% due to rounding. Other includes private equity, hedge funds, infrastructure, insurance contracts , commodities and more.
Source: Thinking Ahead Institute and secondary sources

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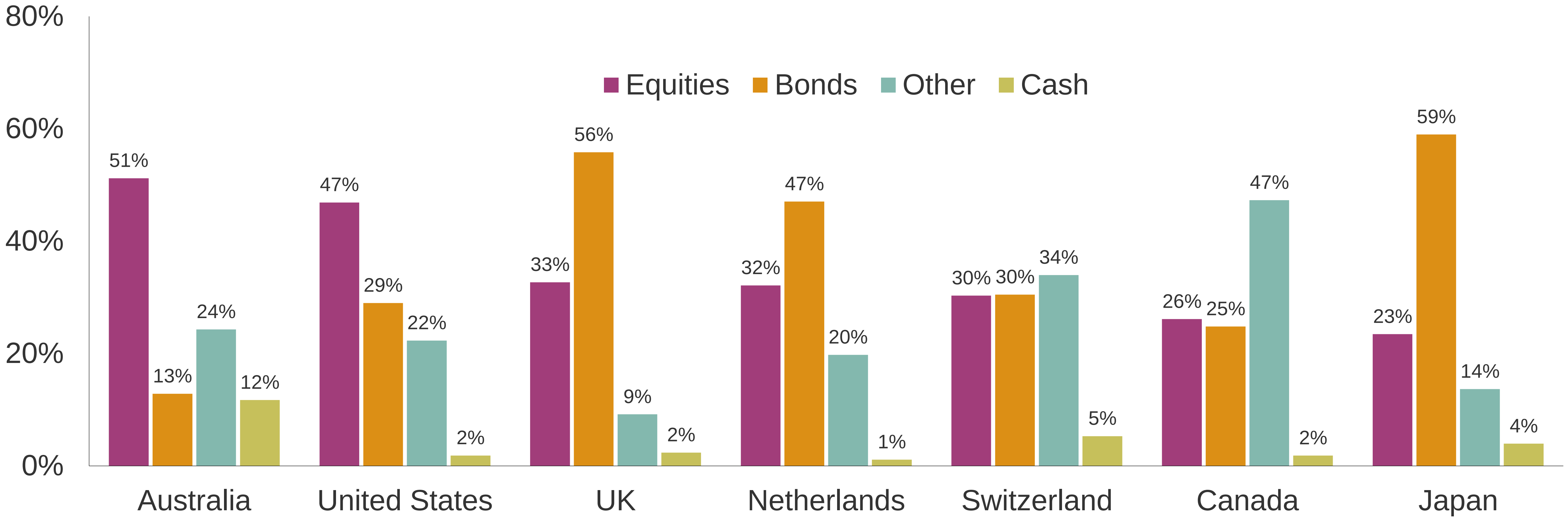
P7 asset allocation in 2022

P7



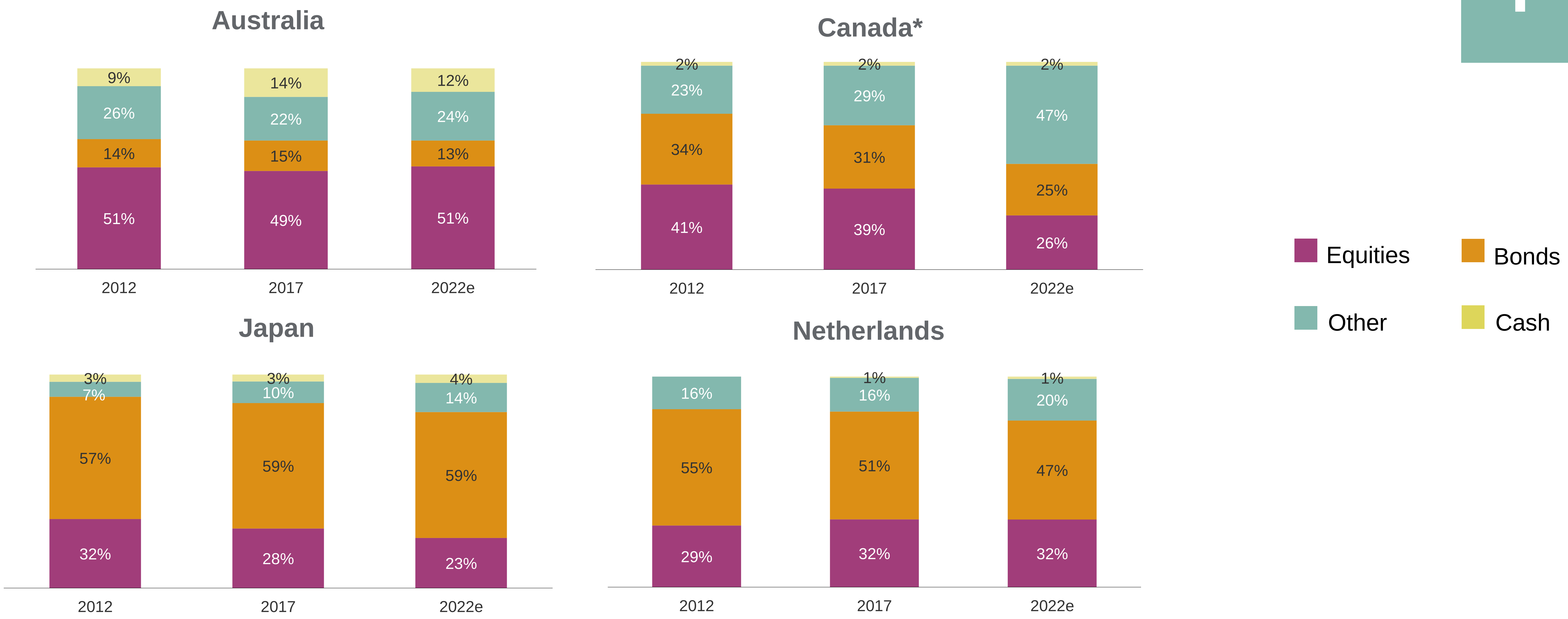
In 2022, Australia and the US continued to have above average equity allocations

The Netherlands, UK and Japan have above average exposure to bonds, while Switzerland has the most even allocations across equities, bonds and other assets

Note: Numbers may not add up 100% due to rounding
Source: Thinking Ahead Institute and secondary sources

P7 asset allocation over the last ten years (1)

P7



Note: Numbers may not add up 100% due to rounding
*The source for Canada asset allocation data was changed in the 2023 edition of the study. Historical asset allocation figures might not be comparable.
Source: Thinking Ahead Institute and secondary sources

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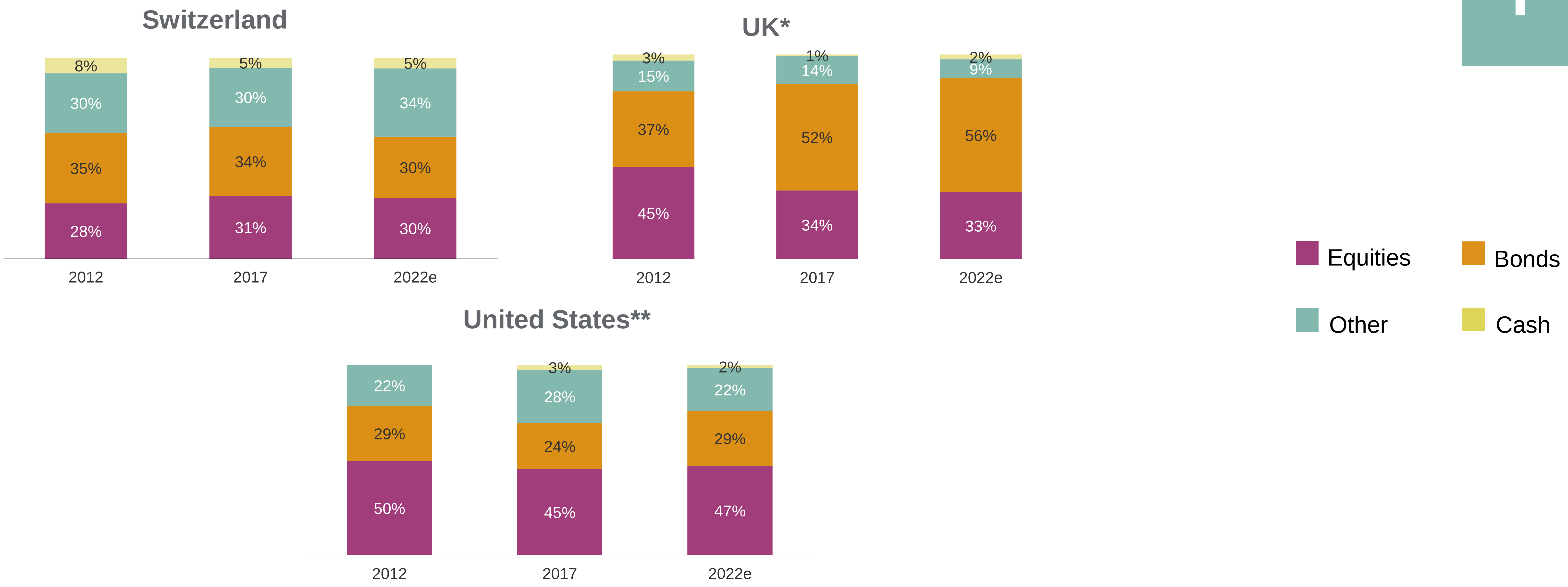
P7 asset allocation over the last ten years (2)

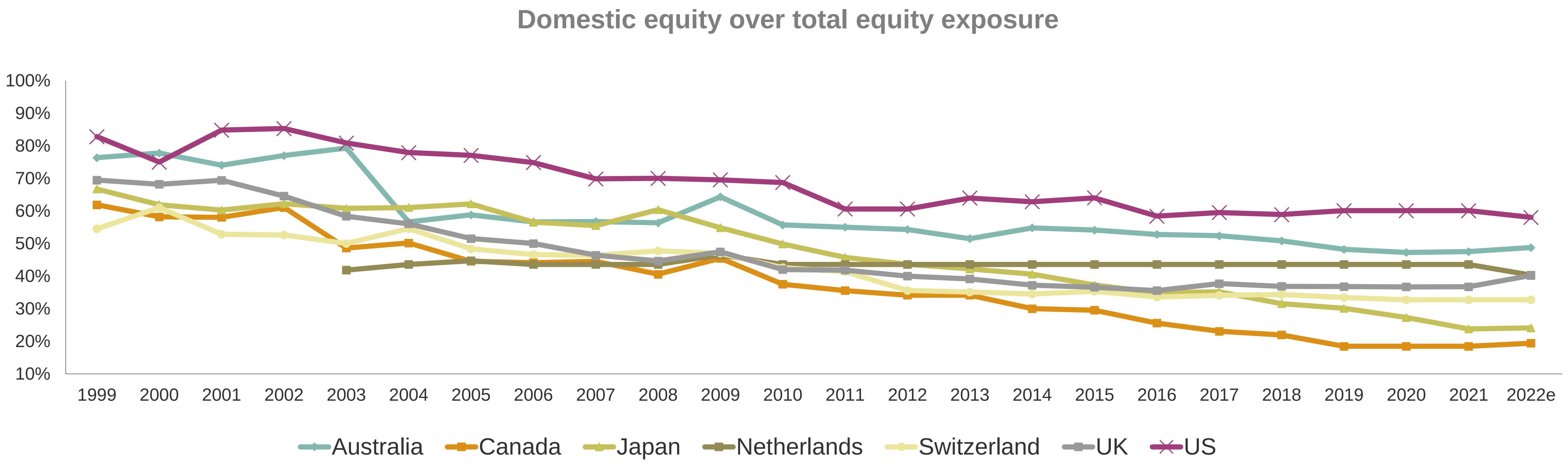
P7



Note: Numbers may not add up 100% due to rounding
*The source for UK asset allocation data was changed in the 2017 edition of the study. Historical asset allocation figures might not be comparable.
**The source for US asset allocation data was changed in the 2023 edition of the study. Historical asset allocation figures might not be comparable.
Source: Thinking Ahead Institute and secondary sources

Domestic equity exposure

P7



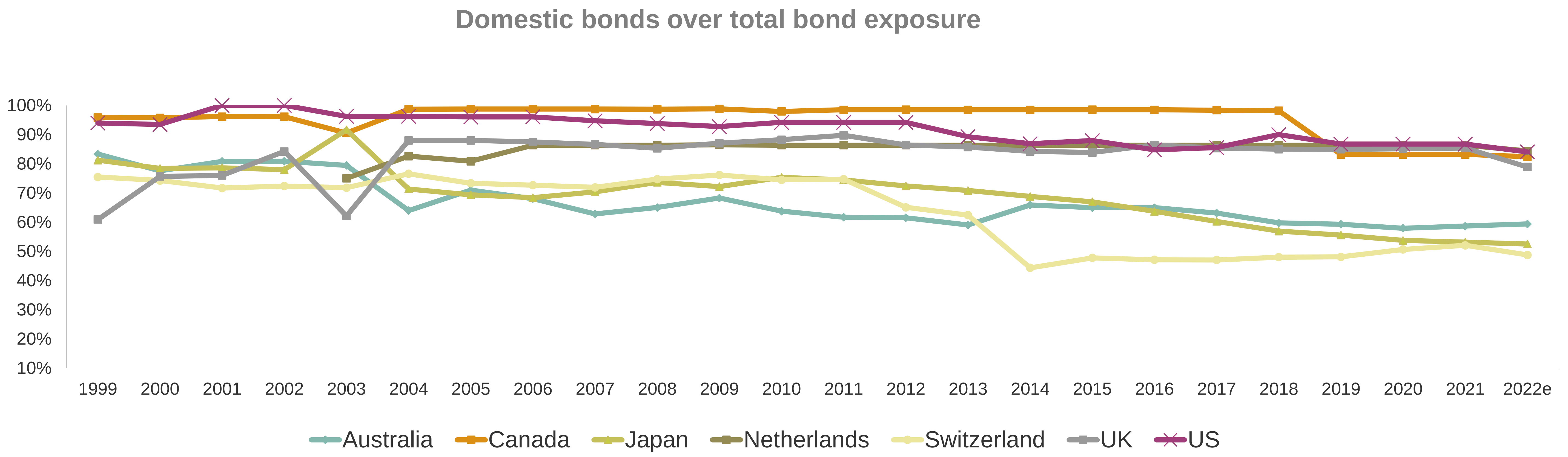
There is a clear sign of a reduced home bias in equities over the past 20-year period. The weight of domestic equities has fallen, on average, from 67.1% in 2002 to 37.7% in 2022

During the past ten years, the US has had the highest allocation to domestic equities, while Canada, Japan and Switzerland have had the lowest allocation

Source: Thinking Ahead Institute and secondary sources

Domestic bonds exposure

P7



The allocation to domestic bonds has remained high, even though it has decreased in the last 20 years. On average, the allocation to domestic bonds as a percentage of total bonds was 85.3% in 2002 and 70.1% in 2022.

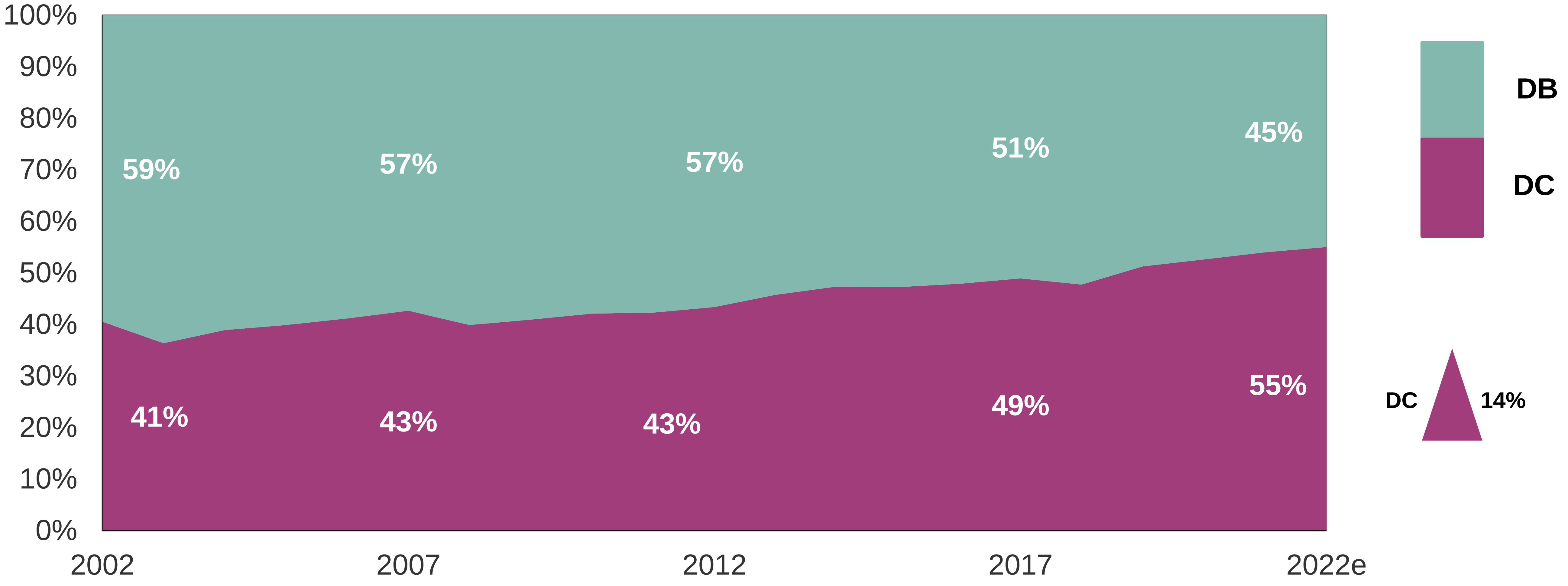
Netherlands, the UK and the US have the highest allocation to domestic bonds, while Switzerland has the highest foreign bond exposure.

Source: Thinking Ahead Institute and secondary sources

Section 3 | DB/DC Split

DC on the rise

P7



During the last ten years, DC assets have grown by 6.5% pa while DB assets have grown at a slower pace by 2.1 % pa

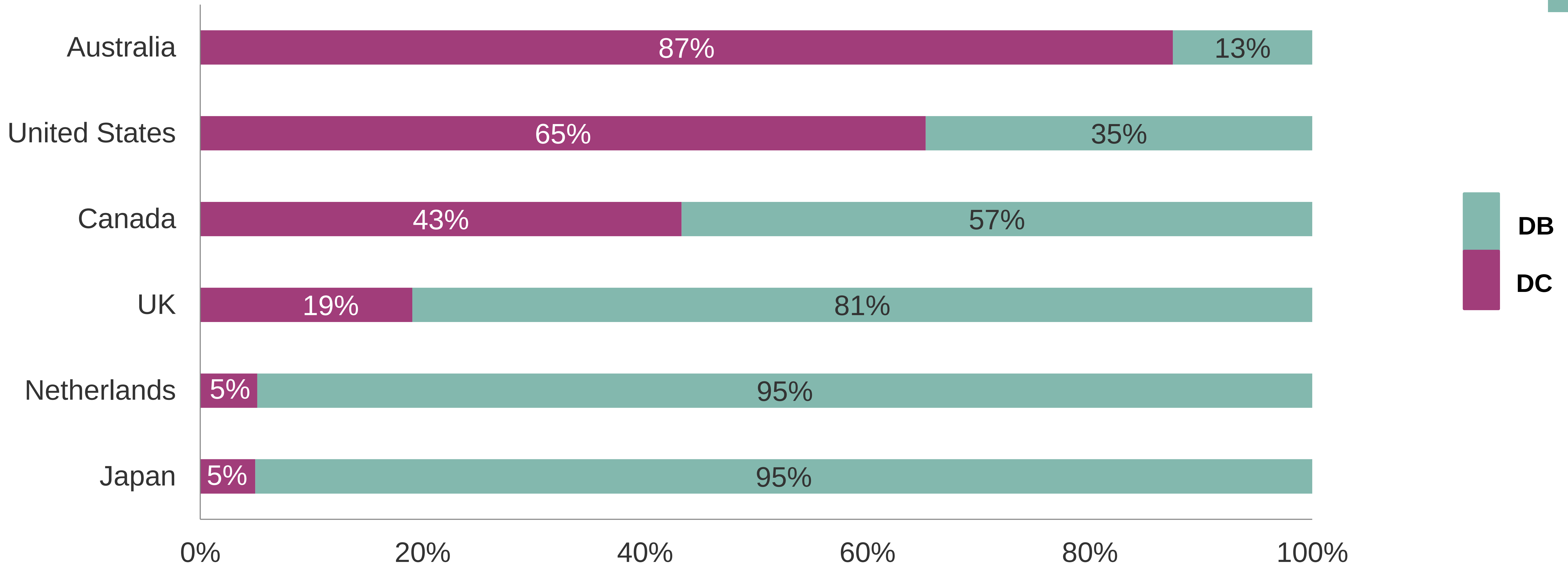
The growth rate of DC assets for the last 20 years is 7.2% pa and 4.4% pa for DB assets

Note:Numbers may not add up 100% due to rounding
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. Canadian DC assets now include individual accounts. Historical figures have been restated.

Source: Thinking Ahead Institute and secondary sources

DB/DC split in 2022

P7



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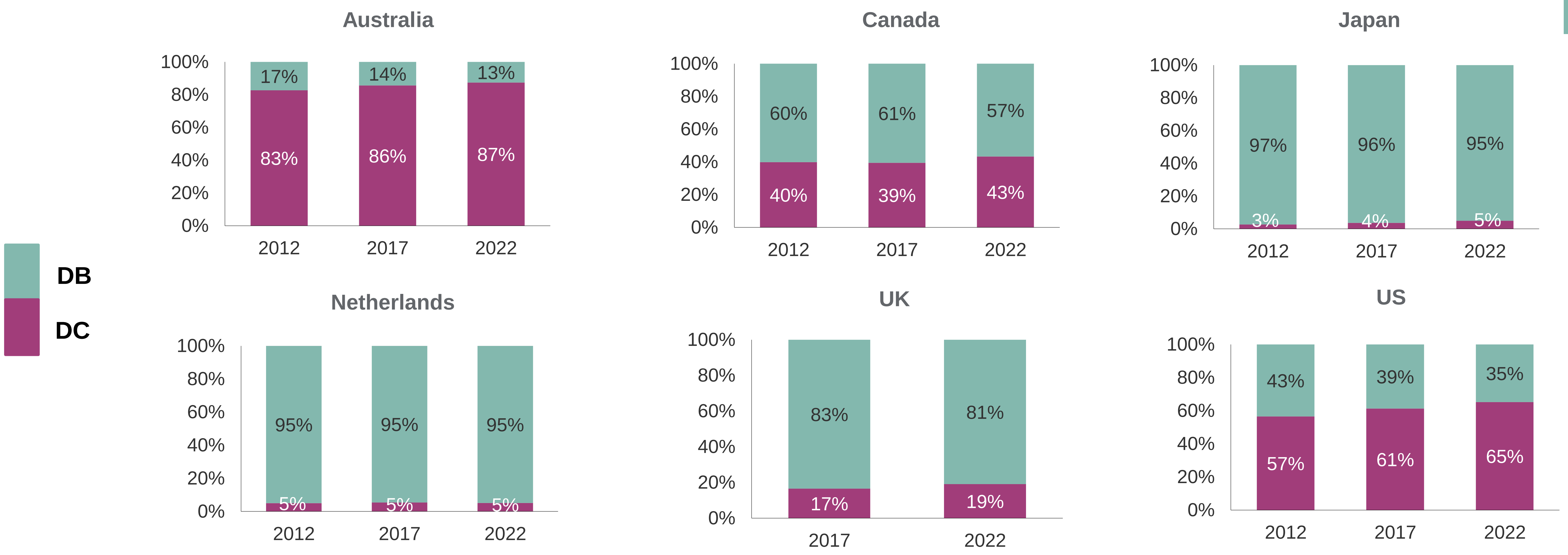
Source: Thinking Ahead Institute and secondary sources

DB/DC split over the last ten years

P7



Source: Thinking Ahead Institute and secondary sources

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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.

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Section 4 | Methodology

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 2021 (except for Australia and Brazil which is from June 2022) collected by WTW and from various secondary sources
  - Estimates as at year-end 2022 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 in the 2017 edition of the study, 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 are also not included as it is considered as a reserve fund and separate from the pension system.
- In the 2021 edition of the GPAS Canadian assets started to include individual accounts, historical figures have been restated.
- Indices included for estimations and asset returns are the following. MSCI TR gross indices for equities. Bloomberg TR indices for bonds. For cash: Euribor rates for euro countries, 3-month bank accepted bills for Australia, Taxa Selic Diaria for Brazil, Overnight money market financing rate for Canada, Chile TAB Nominal Avg Interbank Rate 90 Days for Chile, BOC HIBOR interbank offered rate for Hong Kong, Financial Benchmarks India Interbank 3 Month Rate for India, TIBOR fixing rate 3 month for Japan, MYR LIBOR 3-month Constant Maturity for Malaysia, representative interest rate for Mexico, South Africa Johannesburg Interbank Agreed Rate 3 months for South Africa, Korea Federation of Banks KORIBOR 3 Month for South Korea, LIBOR 3 month for UK and Federal Funds market rate (overnight) for US. Hedge Fund index for others. GPR 250, MSCI, FTSE, S&P and IPD property indices for property.

Comparison with GDP

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

Limitations of reliance

Limitations of reliance

Limitations of reliance – Thinking Ahead Group 2.0

This document has been written by members of the Thinking Ahead Group 2.0. Their role is to identify and develop new investment thinking and opportunities not naturally covered under mainstream research. They seek to encourage new ways of seeing the investment environment in ways that add value to our clients.

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Contact Details
Jessica Gao
jessica.gao@wtwco.com

Website: www.thinkingaheadinstitute.org/en
LinkedIn: Thinking Ahead Institute

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