Global Pension Assets Study 2013

Towers Watson

January 2013

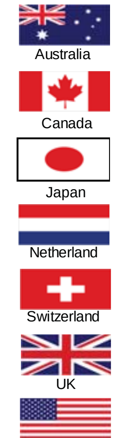
Global Pension Assets Study 2013

Survey coverage

- The study covers 13 major pension markets, which total USD 29,754 bn in pension assets and account for 78.3% of the GDP of these economies. We use the shorthand 'P13' to denote them.
- We perform a deeper analysis for seven of these markets, excluding the six smallest markets (Brazil, France, Germany, Ireland, Hong Kong and South Africa) and use the shorthand 'P7' to denote them. P7 assets are around 95% of the P13.
- The analysis is organised in four sections:
  - Asset size, including growth statistics, comparison of asset size with GDP and liabilities (P13)
  - Asset allocation (P7)
  - DB and DC share of pension assets (P7)
  - Public and Private sector share of pension assets (P7)

P13

P7



Global Pension Assets Study 2013

Key findings

P13 pension assets at the end of 2012

- At the end of 2012 pension assets for the 13 markets in the study were estimated at USD 29,754 bn, representing a 8.9% rise compared to the 2011 year-end value.
- Pension assets relative to GDP reached 78.3% in 2012, still below the 2007 level of 78.8%, but above the 2011 ratio of 72.2%.
- The largest pension markets are the US, Japan and the UK with 56.6%, 12.5% and 9.2% of total pension assets in the study, respectively.
- In USD terms, the pension assets growth rate of these three largest markets in 2012 was 10.0%, 0.5% and 9.9% respectively.
- It is important to caveat the impact of the currency exchange rates when measuring the growth of pension assets in USD, as in many cases the results vary significantly with those in local currency terms. For example, in local currency terms, the pension assets growth rate of Japan in 2012 was 11.5%.

Global Pension Asset Study 2013

Key findings

P7 (excluding Switzerland[1]) DB/DC allocation at the end of 2012

- During the last 10 years DC assets have grown at a rate of 7.8% pa while DB assets have grown at a slower pace of 6.6% pa.
- Currently DC assets represent 45.4% of total pension assets, having risen from 42.6% in the past decade.
- DC is dominant in Australia and the US. Japan and Canada, both historically only DB, are now showing signs of a shift to DC.

P7 Asset allocation at the end of 2012

- At the end of 2012 the average global asset allocation of the seven largest markets was 47.3% equities, 32.9% bonds, 1.2% cash and 18.6% other assets (including property and other alternatives).
- The asset allocation pattern has changed somewhat compared to the end of 2011. Allocations to equities increased while allocations to bonds, cash and other investments fell.
- Australia, the US and the UK have higher allocations to equities than the rest of the P7 markets. More conservative investment strategies (more bonds and less equities) occur in the Netherlands, Japan and Switzerland.

[1] DC assets in Switzerland are cash balance plans and are excluded from this analysis.

The current pension fund watch list

Commentary on current issues		Watch out in 2013 for…	Long-term trend
Pension tension	Increased awareness of intergenerational fairness and associated societal pressure	Continuing tension between state- vs self-provision; public vs corporate	Attention to longer-term sustainability issues in pension provision
DB	Attention to managing a volatile balance sheet; sponsor challenges	Ongoing attention to managing liabilities and deficits	Reduction in equities with focus on alternative assets and de-risking strategies
DC	Improvement to DC arrangements and communication with members required	Evaluating the impact of regulation changes Focus on risk management and governance of DC arrangements	Increased competition extends DC product range and reduces costs Improved technology delivering effective planning tools
Value for money	Development towards a more effective 'food chain' where expense on various activities has a better value proposition	Greater scrutiny of the value proposition; more attention given to smart beta	More effective food chain with better alignment between asset owners and their external agents
Regulation	More regulation and legal challenges for pension funds	Impact on the industry of the possibility of Solvency II and transaction taxes; sponsor-fiduciary tension	Pressure on the industry from the costs of compliance and unintended consequences of new regulation
Governance	Improved recognition of return on governance driving increased focus on risk management	Growth in fiduciary management appointments Increased attention to risk and risk management	Further change in organisational design – non-executive boards, delegated executives, fiduciary management
Sustainability in investment	Growing interest from institutional investors to consider longer-term sustainability factors	Difficulties with balancing long-term sustainable investment and short-term targets in current market conditions	Better tools and models to cope with the transformation anticipated

Global Pension Assets Study 2013

Key findings - figures

	Total Assets 2012 (USD billion)	% GDP (Local currency)
Australia	1,555	101%
Brazil[1]	340	14%
Canada	1,483	84%
France	168	7%
Germany[2]	498	15%
Hong Kong	104	40%
Ireland	113	55%
Japan	3,721	62%
Netherlands	1,199	156%
South Africa	252	64%
Switzerland[3]	732	118%
UK	2,736	112%
US	16,851	108%
Total	29,754	78%*

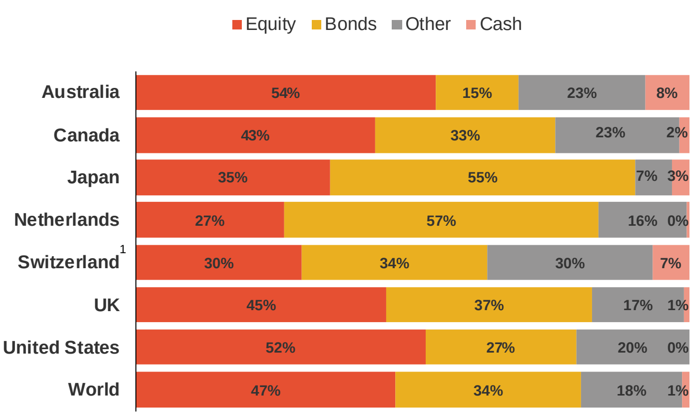
Source: Towers Watson and secondary sources
*Assets/GDP ratio for the world is calculated in USD and assets were estimated as of 31 Dec 2012

[1] Brazil Pension Assets only include those from closed entities
[2] Only collect pension assets for company pension schemes
[3] Only includes total of autonomous pension funds

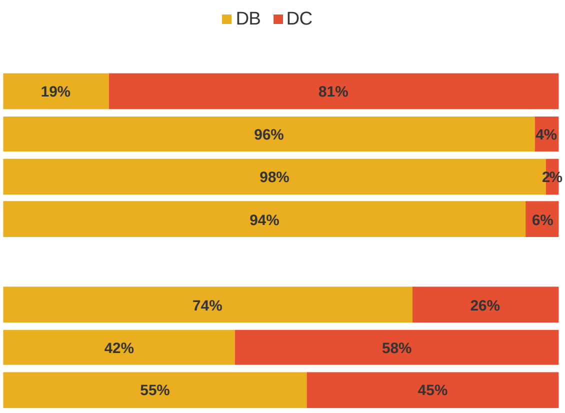
Global Pension Assets Study 2013

Key findings - figures

Asset allocation 2012



DB/DC Split 2012



Source: Towers Watson and secondary sources

[1] DC assets in Switzerland are cash balance plans and are excluded from this analysis.

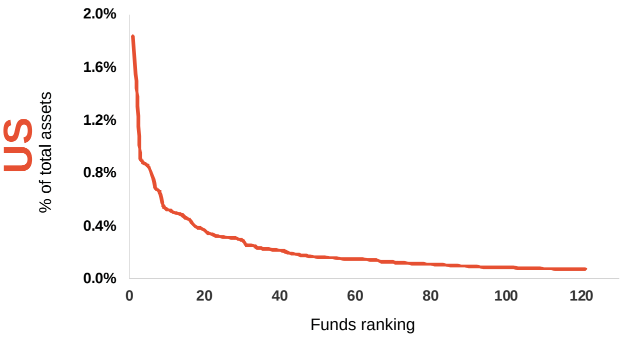
P13

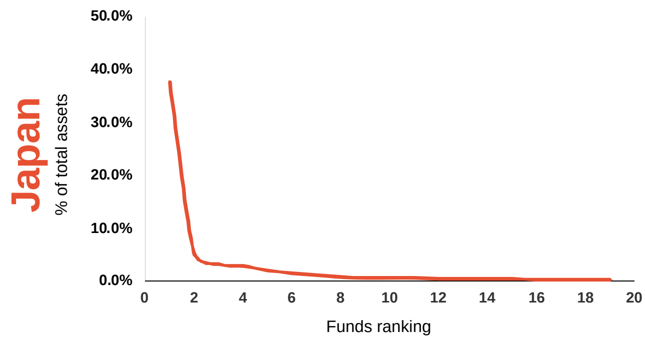
Relative proportion of top 300 pension funds

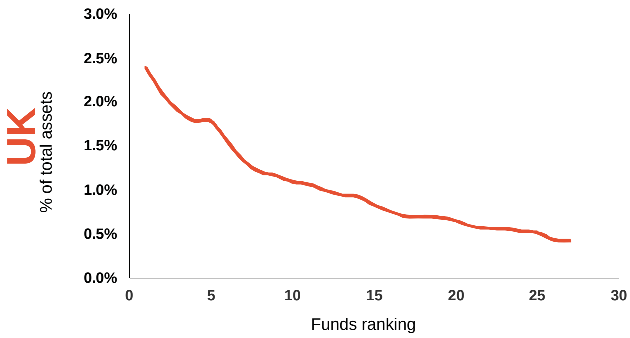
- The TW/P&I 300 ranking is carried out every year in conjunction with Pensions & Investment (P&I) and ranks the world's largest 300 pension funds in terms of assets under management.
- Assets under management of top 300 pension funds represented 46.7% of the total global pension assets in 2011.
- The top 20 pension funds accounted for 18.5% of total pension assets globally.

Source: Towers Watson and secondary sources

Relative proportion of top 300 pension funds by market







- While US top 10 pension funds represent 9.1% of the market's total assets under management, the top 10 Japanese funds account for 55.9% of Japan's pension assets. This is largely explained by the Government Pension Investment fund that represents 37.7% of Japan's pension assets.
- In the UK, the top 10 pension funds represent 16.4% of the total UK pension assets. Among them, 10.1% are private pension funds and the remaining 6.3% are state-sponsored pension funds.

Source: Towers Watson and secondary sources

Global pension assets

P13

Evolution 2002-2012 – USD billion

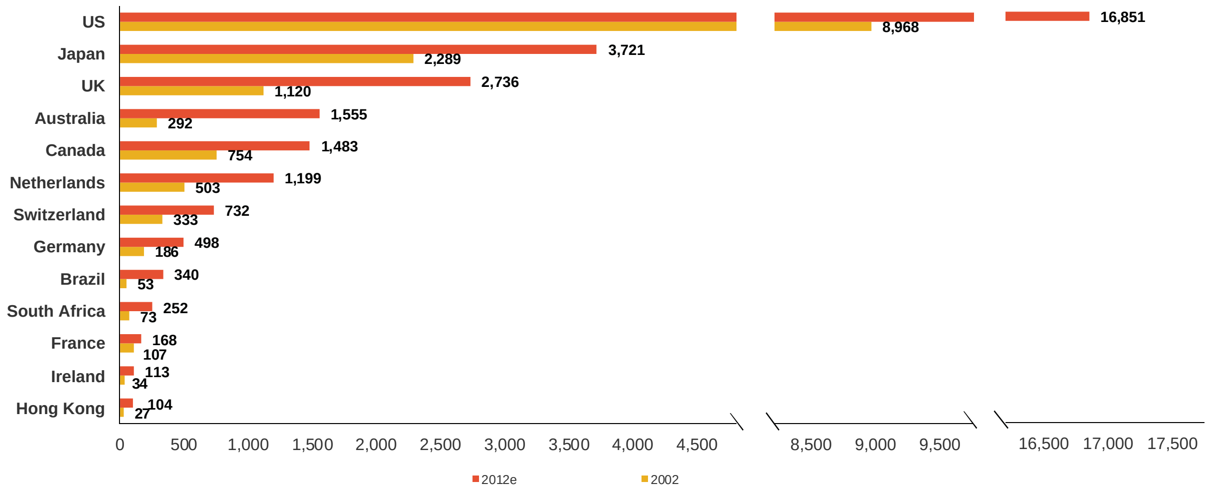
- Global pension assets in 2012 are estimated to have reached USD 29,754 bn, an increase of 8.9% since the end of 2011.
- The US continues to be the largest market in terms of pension assets, then followed, at significant distance, by Japan and the UK. Together they account for over 78.3% of total assets.
- The smallest markets are, in descending order, France, Ireland and Hong Kong.

Market	Total assets (USD billion) Year end 2002	Total assets (USD billion) Year end 2012e	Growth rate (USD) 10-year CAGR
Australia	292	1,555	18.2%
Brazil	53	340	20.4%
Canada	754	1,483	7.0%
France	107	168	4.6%
Germany	186	498	10.3%
Hong Kong	27	104	14.4%
Ireland	34	113	12.7%
Japan	2,289	3,721	5.0%
Netherlands	503	1,199	9.1%
South Africa	73	252	13.2%
Switzerland	333	732	8.2%
UK	1,120	2,736	9.3%
US	8,968	16,851	6.5%
Total	14,740	29,754	7.3%

Source: Towers Watson and secondary sources

Global pension assets

Evolution 2002-2012 – USD billion



Source: Towers Watson and secondary sources

Global pension assets

Relative weights of each market

- Over the past decade the weights of Canada, France, Japan and the US have declined relative to the other markets in the study.

Market	Relative weights of each market	
	End 2002	End 2012e
Australia	2.0%	5.2%
Brazil	0.4%	1.1%
Canada [1]	5.1%	5.0%
France[1]	0.7%	0.6%
Germany	1.3%	1.7%
Hong Kong	0.2%	0.4%
Ireland	0.2%	0.4%
Japan	15.5%	12.5%
Netherlands	3.4%	4.0%
South Africa	0.5%	0.8%
Switzerland	2.3%	2.5%
UK[1]	7.6%	9.2%
US	60.8%	56.6%
P13	100.0%	100.0%

Source: Towers Watson and secondary sources

[1] For France and Canada, there was a methodology change in 2008/2009. There was a methodology change for the UK in 2012.

Global pension assets growth rates

Compound annual growth rates – *local currency – 2012e*

- The estimated 5-year growth rates ranged from -0.5% pa in Ireland to 10.1% pa in South Africa.
- During the past 10 years, all the markets considered in this analysis experienced an increase in their pension assets. Hong Kong has seen the fastest growth rate, followed by Brazil and South Africa.

Market	Growth rates to 2012e (Local Currency)	
	5-year (31/12/07-31/12/12) CAGR	10-year (31/12/02-31/12/12) CAGR
Australia	**3.9%**	**11.2%**
Brazil	**8.8%**	**14.0%**
Canada[1]	**4.5%**	**7.0%**
France [1]	**1.7%**	**2.2%**
Germany	**7.1%**	**7.8%**
Hong Kong	**6.7%**	**14.3%**
Ireland	**-0.5%**	**10.1%**
Japan	**0.5%**	**1.6%**
Netherlands	**4.6%**	**6.6%**
South Africa	**10.1%**	**13.0%**
Switzerland	**2.0%**	**3.7%**
UK [1]	**4.7%**	**9.3%**
US	**1.9%**	**6.5%**
Average	**4.3%**	**8.3%**

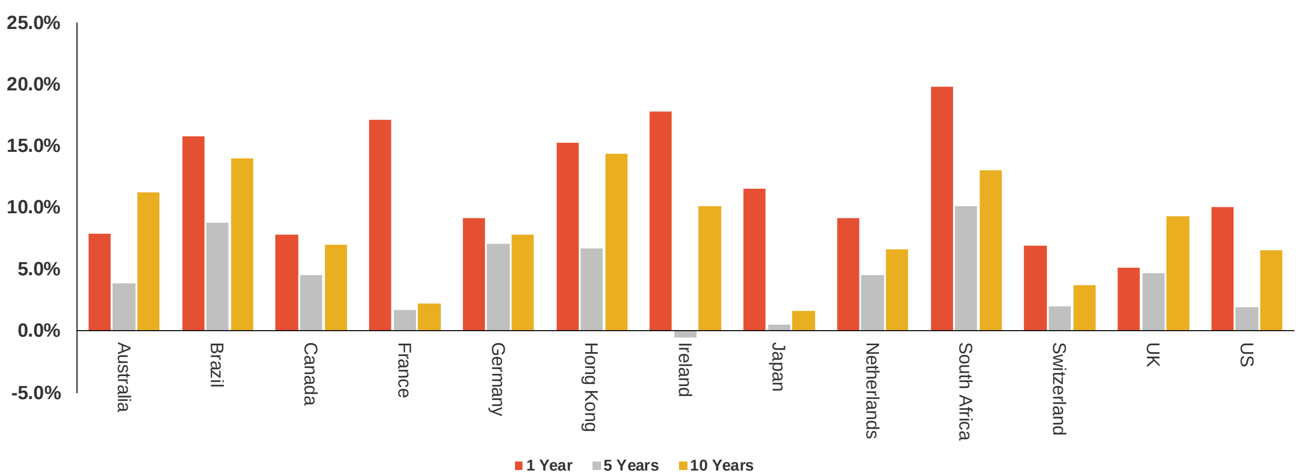
[1] For France and Canada, there was a methodology change in 2008/2009. There was a methodology change for the UK in 2012.

Source: Towers Watson and secondary sources

Global pension assets growth rates

Compound annual growth rates – *local currency*

2012e CAGR – Local Currency



Source: Tower Watson and secondary sources

Global pension assets growth rates

Compound annual growth rates – *USD*

- In 2012 global pension assets are estimated to have increased 8.9% on average, compared to a 2.9% increase seen in 2011, measured in US dollar terms.
- During the last 10 years, the most rapidly growing pension markets have been Brazil (20.4%), Australia[3] (18.2%) and Hong Kong (14.4%) when measured in US dollar terms.
- On the other hand, the US, Japan and France showed the slowest rates of growth in US dollar terms since 2002 (6.5%, 5.0% and 4.6% respectively).

Market	1-year (31/12/10-31/12/11) Actual	Growth rates to 2012e (USD)		
		1-year (31/12/11-31/12/12) CAGR[2]	5-year (31/12/07-31/12/12) CAGR	10-year (31/12/02-31/12/12) CAGR
Australia	0.5%	10.0%	7.4%	18.2%
Brazil	-4.7%	5.4%	12.8%	20.4%
Canada[1]	5.9%	10.3%	6.8%	7.0%
France[1]	6.0%	19.5%	-2.3%	4.6%
Germany	1.7%	11.4%	6.2%	10.3%
Hong Kong	1.8%	15.5%	7.7%	14.4%
Ireland	-6.4%	20.2%	-4.2%	12.7%
Japan	12.3%	0.5%	5.7%	5.0%
Netherlands	4.9%	11.4%	1.8%	9.1%
South Africa	-14.3%	14.8%	6.5%	13.2%
Switzerland	0.7%	10.0%	6.8%	8.2%
UK[1]	9.2%	9.9%	0.4%	9.3%
US	0.9%	10.0%	2.0%	6.5%
World	2.9%	8.9%	3.2%	7.3%

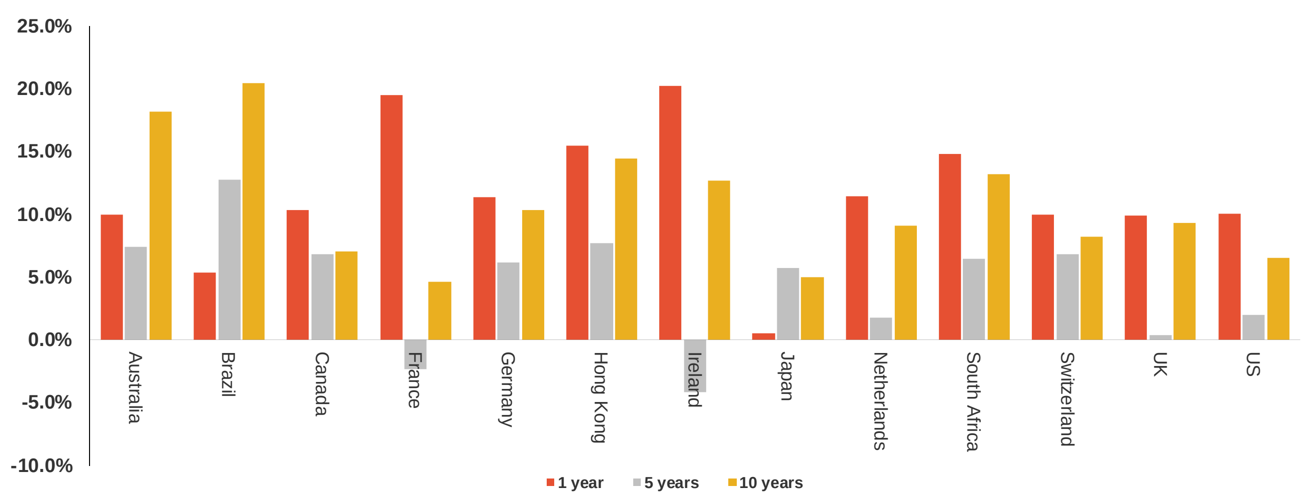
Source: Towers Watson and secondary sources

[1] For France and Canada, change in methodology in 2008/2009. There was a methodology change for the UK in 2012.
[2] 1-year growth does not capture net contributions in markets.
[3] In the case of Australia, the 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.

Global pension assets growth rates

Compound annual growth rates – *USD*

2012e CAGR - USD



Source: Towers Watson and secondary sources

Global pension assets growth rates

Currency impact

- During 2012, the British pound, Swiss franc and Canadian dollar were the currencies that appreciated the most against the US dollar, 4.6%, 2.9% and 2.3% respectively.
- In last year the currencies that depreciated against the USD were Japanese yen (-9.9%), Brazilian real (-9.0%) and South African rand (-4.2%). Therefore, growth rates in USD for these markets appeared much lower.
- During the last 10 years the Australian dollar saw the biggest appreciation (6.3% pa), followed by the Brazilian real (5.6% pa), while over the last 5 years the Japanese yen appreciated the most (5.2% pa).
- Over longer periods there has been a trend of depreciation of the USD relative to other major currencies.

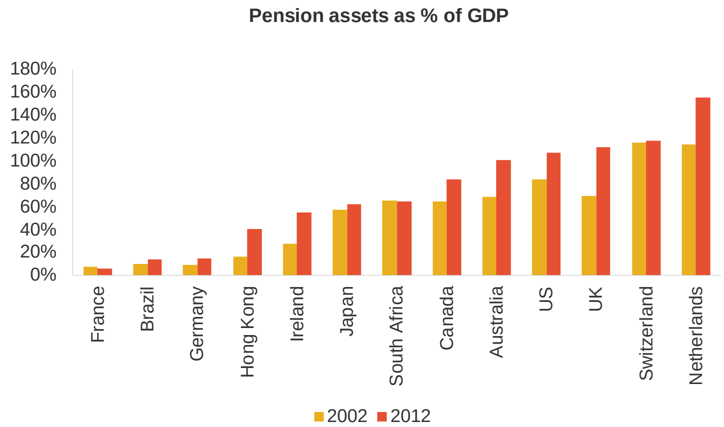
Market	Variation in FX rates against USD		
	1-year (31/12/11-30/12/12)	5-year (31/12/07-30/12/12) CAGR	10-year (31/12/02-30/12/12) CAGR
Australia[1]	1.9%	3.4%	6.3%
Brazil	-9.0%	3.7%	5.6%
Canada	2.3%	2.3%	0.0%
France	2.1%	-3.9%	2.3%
Germany	2.1%	-0.8%	2.3%
Hong Kong	0.2%	0.9%	0.1%
Ireland	2.1%	-3.7%	2.3%
Japan	-9.9%	5.2%	3.3%
Netherlands	2.1%	-2.7%	2.3%
South Africa	-4.2%	-3.3%	0.2%
Switzerland	2.9%	4.8%	4.3%
UK	4.6%	-4.1%	0.0%

Source: Towers Watson and secondary sources

1 Due to a change in methodology, Australian dollar variation reflects the change between 30/06/2012 and 30/12/2012.

Global pension assets vs. GDP in local currency

Market	Pension assets as % of GDP		
	2002	2012e	*Change* [1]
Australia	69%	101%	32%
Brazil	10%	14%	4%
Canada	65%	84%	19%
France	7%	7%	0%
Germany	9%	15%	6%
Hong Kong	17%	40%	23%
Ireland	28%	55%	27%
Japan	57%	62%	5%
Netherlands	114%	156%	42%
South Africa	66%	64%	-2%
Switzerland	116%	118%	2%
UK	70%	112%	42%
US	84%	108%	24%



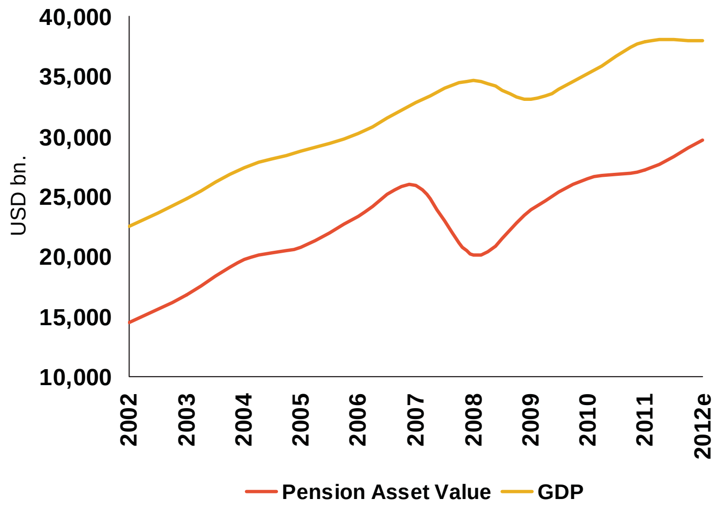
Source: Towers Watson and secondary sources / GDP values in Local Currency from IMF

[1] In percentage points

Global pension assets vs. GDP

In USD

- Global pension assets to GDP ratio (P13) increased from 72.2% at the end of 2011 to 78.3% at the end of 2012 – below the level of 78.8% reached at 2007 year-end.
- The Netherlands has the highest ratio of pension assets to GDP (156%) followed by Switzerland (118%) and the UK (112%).
- During the last 10 years, the pension assets to GDP ratio grew the most in the Netherlands and the UK (42 percentage points in both). It declined in South Africa during the same period.

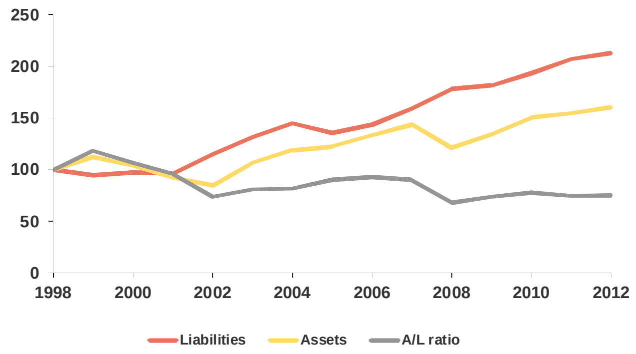


Source: Towers Watson, the IMF and secondary sources

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

DB asset/liability indicator – global basis

Index change from 31 December 1998



Year end	Liability increases relative to end 1998	Asset increases relative to end 1998	Asset liability indicator - cumulative change relative to end 1998	Asset liability indicator - change in year
2002	15.0%	-15.2%	-26.3%	-23.2%
2003	31.7%	6.7%	-19.0%	9.9%
2004	45.0%	19.0%	-18.0%	1.3%
2005	35.6%	22.5%	-9.6%	10.2%
2006	43.6%	33.7%	-6.9%	3.0%
2007	59.1%	43.7%	-9.7%	-3.0%
2008	78.2%	21.5%	-31.8%	-24.5%
2009	81.6%	34.2%	-26.1%	8.4%
2010	93.3%	50.7%	-22.0%	5.5%
2011	107.3%	54.7%	-25.4%	-4.3%
2012	113.0%	60.5%	-24.7%	2.7%

Source: Towers Watson and secondary sources

DB assets only within asset totals

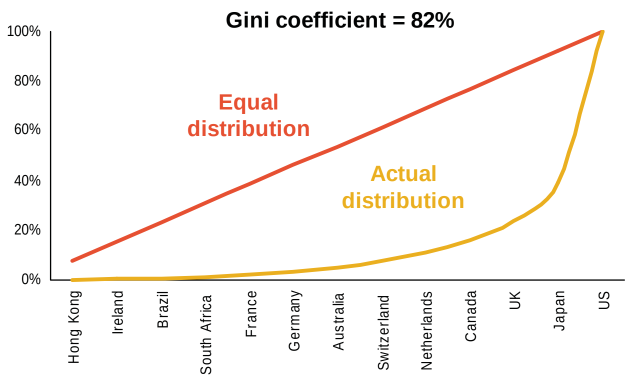
Brazil and South Africa are not considered in the analysis

Mortality changes are not incorporated in these figures

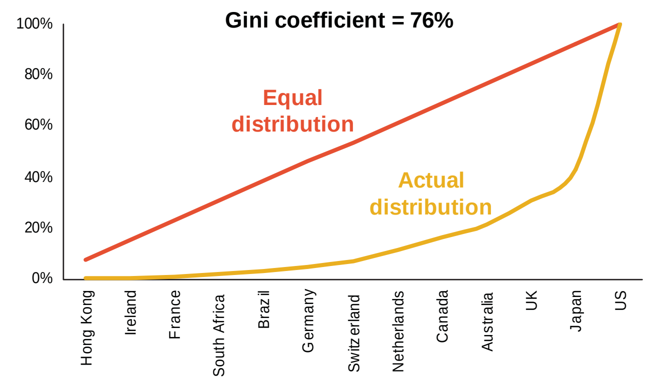
- Global pension fund balance sheets are estimated to have improved in 2012, gaining 2.7% in our asset/liability indicator due to a faster growth rate in assets.

Gini coefficient - global pension assets 2002 vs 2012

Lorenz curve for pension assets in 2002



Lorenz curve for pension assets in 2012

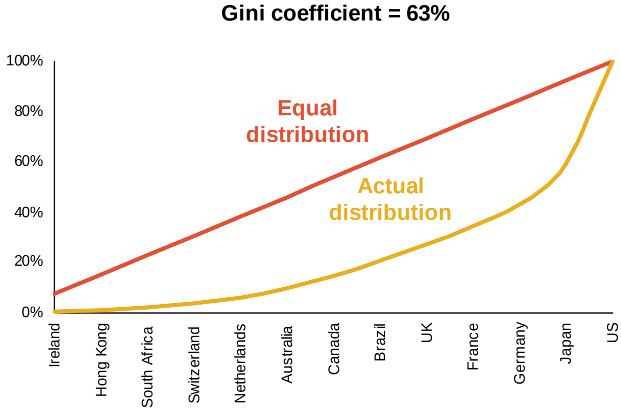


- The Gini coefficient of global pension assets in 2012 was 76% which indicates the P13 pension assets are still concentrated in relatively few markets.
- The global pension market has become less concentrated during the last 10 years, revealed by a higher Gini coefficient (82%) at 2002. This is in line with the observation that while the largest pension markets (the US, Japan and the UK) were among the slowest growing markets in the last decade, some smaller markets (e.g. South Africa and Brazil) have been growing more quickly.

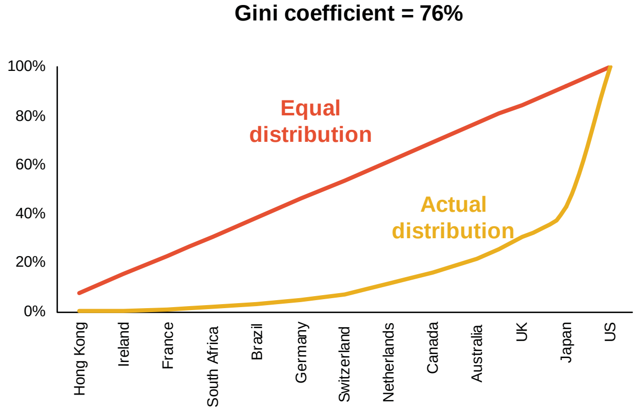
Source: Towers Watson, the IMF and secondary sources

Gini coefficient - pension assets vs GDP

Lorenz curve for GDP in 2012



Lorenz curve for pension assets in 2012



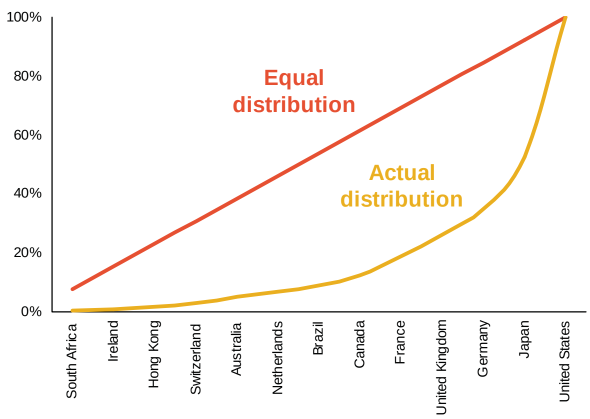
- The lower Gini coefficient for GDP (63%) relative to pension market size (76%) suggests that the global pension asset pool is more concentrated than what would be suggested by their GDP levels. This could be explained by a number of factors including but not limited to a more developed capital market and a more mature pension system within the leading markets.

Source: Towers Watson, the IMF and secondary sources

Gini coefficient - GDP 2002 vs. 2012

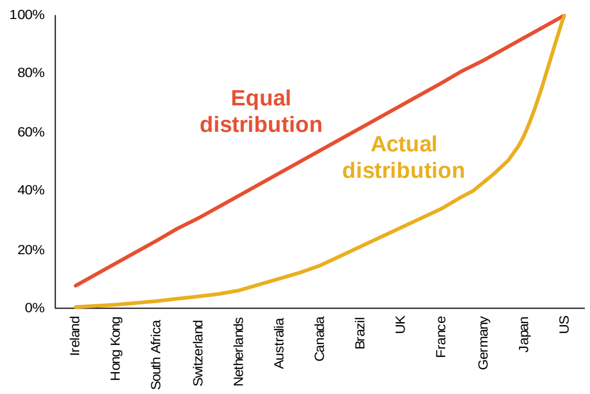
Lorenz curve for GDP in 2002

Gini coefficient = 71%



Lorenz curve for GDP in 2012

Gini coefficient = 63%



- As experienced by P13's pension assets, the Gini coefficient for GDP has dropped over the last 10 years, from 71% in 2002 to 63% in 2012, showing a less concentrated GDP for the markets included in this analysis.

Source: Towers Watson, the IMF and secondary sources

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 is comprised of:
  - Hard data typically as of year-end 2011 (except for Australia which is from June 2012 and the UK for which part of the data was available as of December 2010) collected by Towers Watson and from various secondary sources.
  - Estimates as at year-end 2012 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.
- UK's methodology changed as of 2012. The source of data has been changed to be based on information published by Office for National Statistics and other secondary sources.

Comparison with GDP

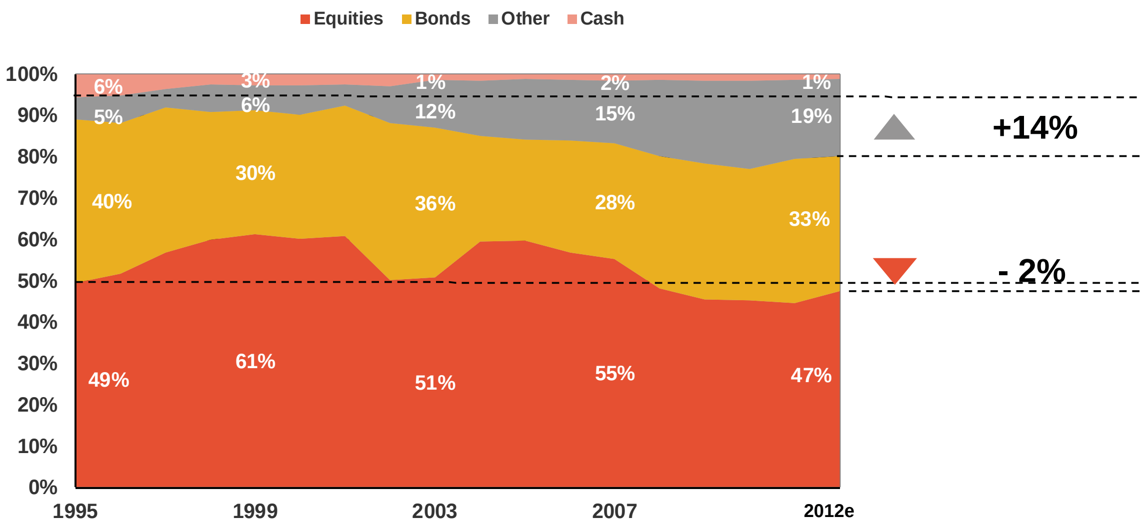
- This section compares total pension fund assets within each market to GDP sourced from the IMF.

Comparison with liabilities

- This section compares the evolution of *defined benefit* assets to the evolution of liabilities within each market.
- Defined benefit assets are updated to the latest date for which we can obtain hard data for assets (typically year-end 2011). From that date onwards, defined benefit assets are simply updated for asset movements obtained using index estimates.
- We do not use hard figures for liabilities for any period and simply account for the change in liabilities that would result from changes in the corresponding government bond yields.
- The asset/liability indicator for each market may change from year to year as our estimated values are updated when hard data becomes available.

Pension asset allocation

Aggregate P7 asset allocation from 1995 to 2012

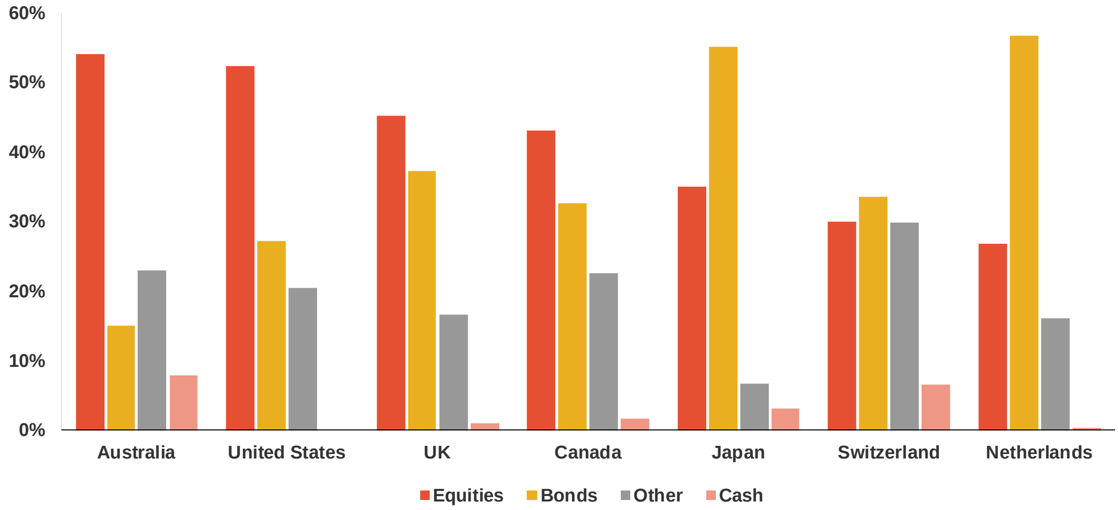


- Since 1995 equities, bonds and cash allocations have all been reduced to a varying degree while assets in alternative areas have increased from 5% to19%.

Source: Towers Watson and secondary sources

Pension asset allocation

P7 in 2012

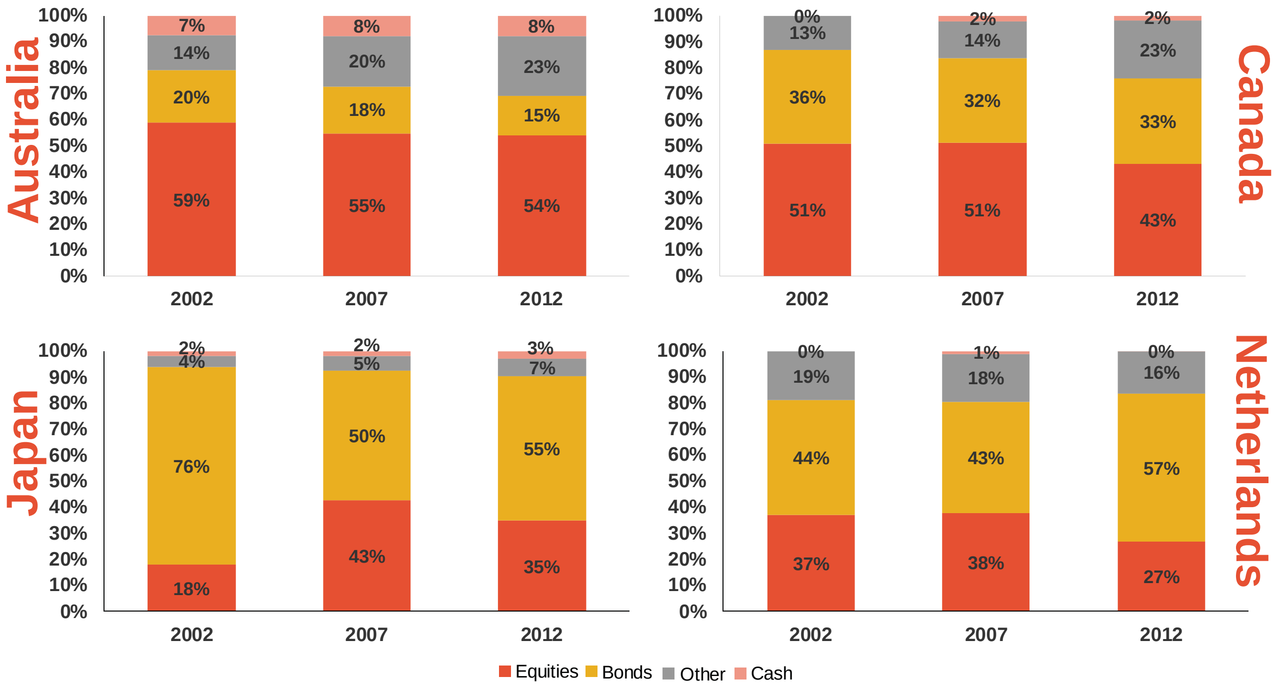


- In 2012, Australia, the US and the UK continued to have above average equity allocations, while Canada retained an equity allocation in line with the average.
- The Netherlands and Japan are the markets with higher than average exposure to bonds, while Switzerland is the most diversified, with similar investments in equities, bonds and other assets.

Source: Towers Watson and secondary sources

Pension asset allocation

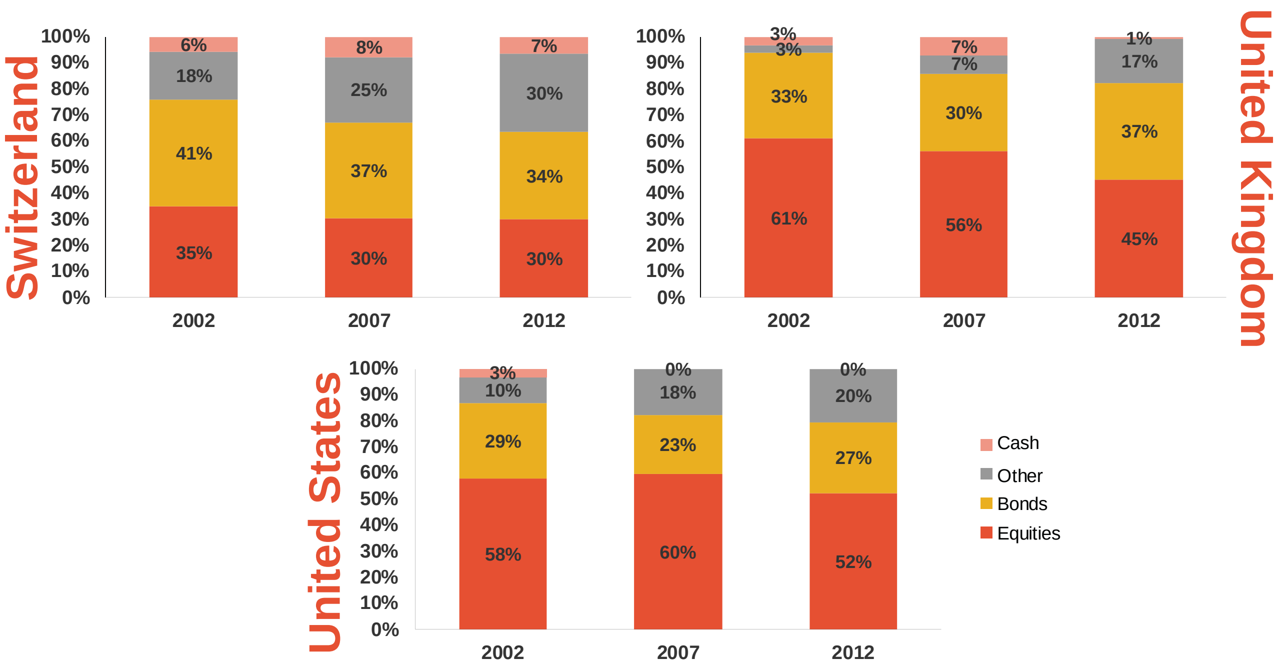
Aggregate – end 2002 versus end 2007 versus end 2012



Source: Towers Watson and secondary sources

Pension asset allocation

Aggregate – end 2002 versus end 2007 versus end 2012

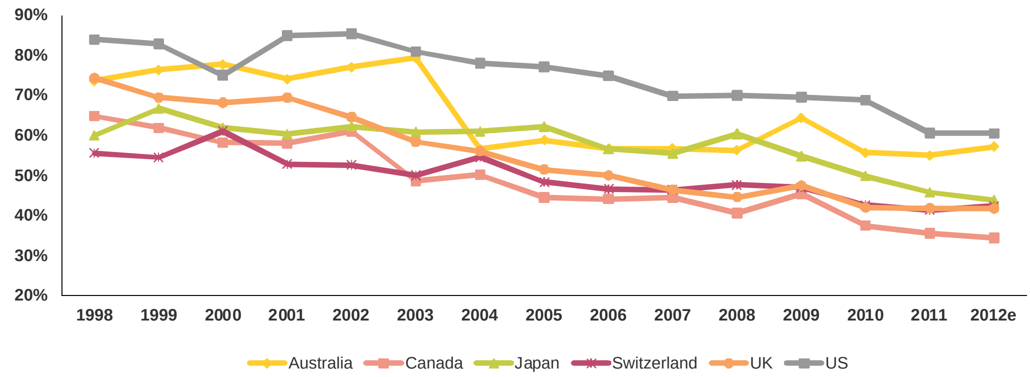


Source: Towers Watson and secondary sources

Pension asset allocation

Domestic equity exposure

Domestic equity over total equity exposure



- There is a clear sign of reduced home bias in equities, as the weight of domestic equities in pension assets portfolios has fallen, on average, from 64.7% in 1998 to 46.5% in 2012. However, both Australia and Switzerland are estimated to have increased their domestic equity exposure over the last year.
- The US pension market remains the most dependent market on domestic equities while Canada has been the least dependent market on domestic equities over the last 10 years.

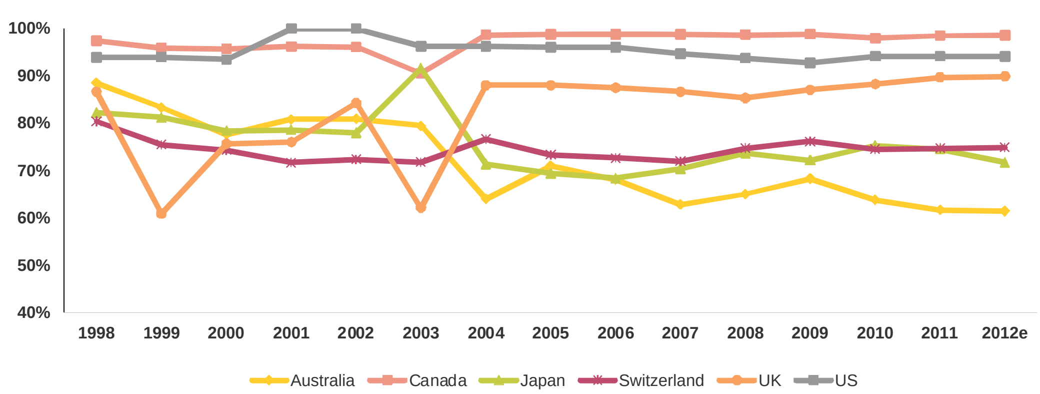
Source: Towers Watson and secondary sources

Note: The Netherlands is not considered

Pension asset allocation

Domestic bonds exposure

Domestic bonds over total bond exposure



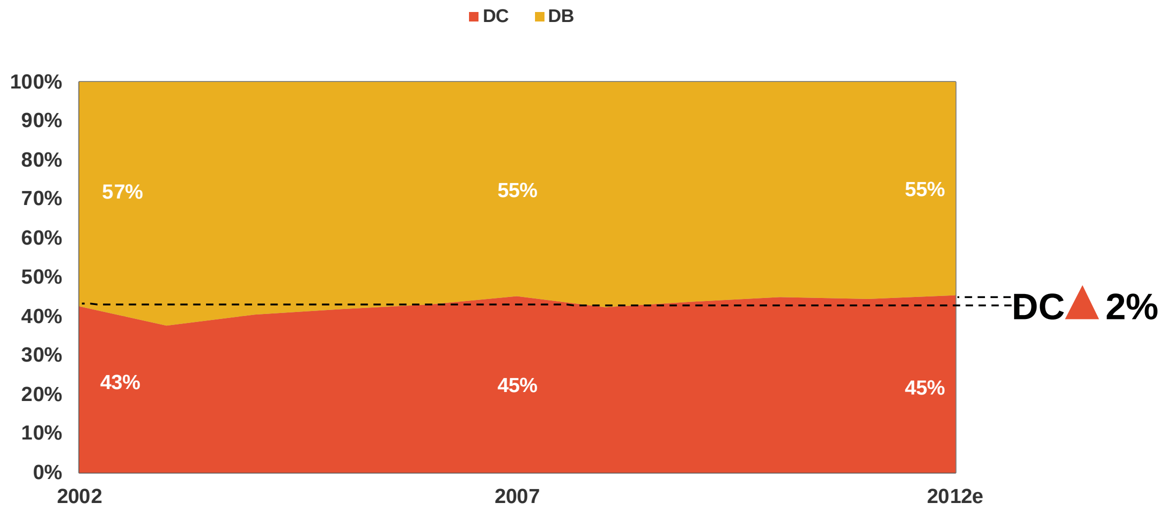
- Regarding fixed income investment, the relationship between domestic and foreign bonds has remained high. On average, the allocation to domestic bonds as a percentage of total bonds was 88.2% in 1998 and 82.5% in 2012.
- Canada and the US have most of their fixed income investments in domestic bonds, while Australia is the market with more foreign fixed income exposure than the rest of the markets in the P7.

Source: Towers Watson and secondary sources

Note: The Netherlands is not considered

DB/DC asset split

Change over the last 10 years

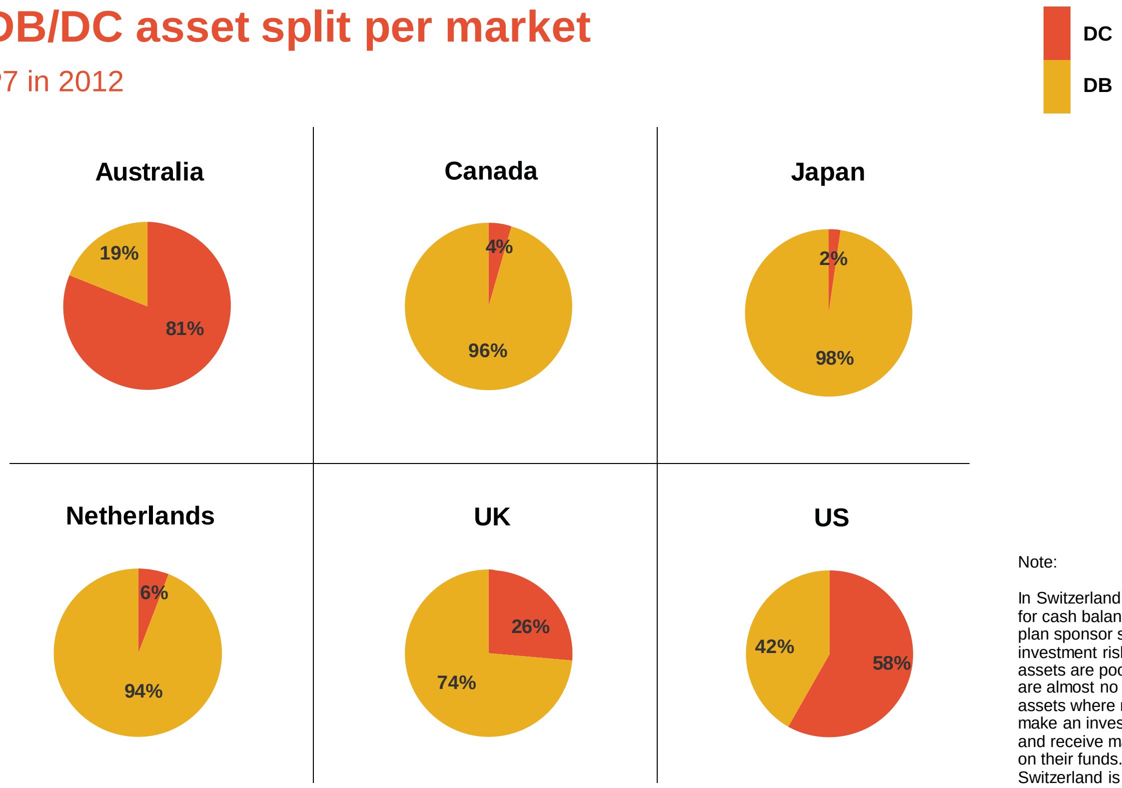


Source: Towers Watson and secondary sources

Note: DC assets in Switzerland are cash balance plans and are excluded from this analysis.

DB/DC asset split per market

P7 in 2012



Note:

In Switzerland DC stands for cash balance, where the plan sponsor shares the investment risk and all assets are pooled. There are almost no pure DC assets where members make an investment choice and receive market returns on their funds. Therefore, Switzerland is excluded from the DB/DC assets split analysis.

Source: Towers Watson and secondary sources

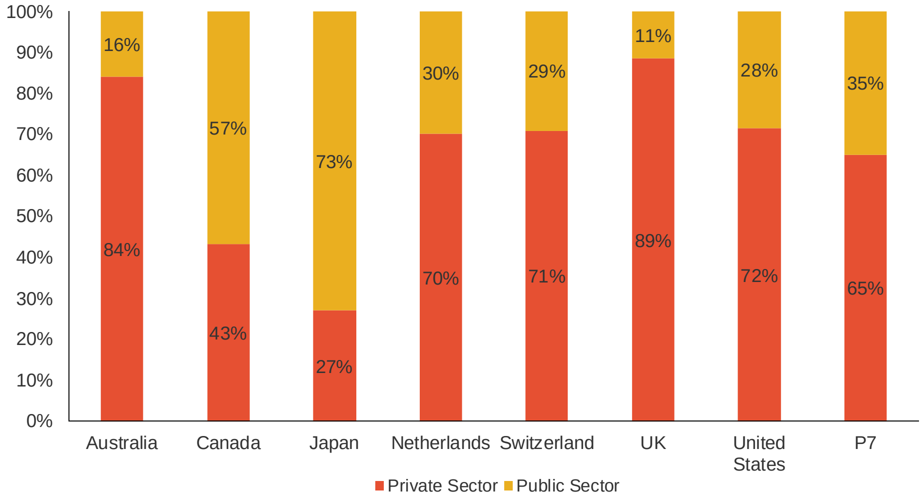
DB/DC asset split

Change over the past years

- The markets with a bigger proportion of DC assets relative to DB in 2012 are Australia with 81.0% and the US with 58.2%.
- Japan, Canada, and the Netherlands have only 2.2%, 4.3% and 5.9% respectively of DC assets in 2012.
- DC pension assets from the P7 have grown from 42.6% in 2002 to 45.4% in 2012.
- During the last 10 years DC assets have grown at a rate of 7.8% pa while DB assets have grown at a slower pace of 6.6% pa.

Public vs. private sector

By markets – estimated values at 2011



- Considering the pension assets of the P7 group, 65% of them are held by the private sector and 35% by the public sector.
- In the UK and Australia the private sector holds the biggest portion of pension assets, accounting for 89% and 84% respectively of total assets in 2011.
- Canada and Japan are the only two markets where the public sector holds more pension assets than the private sector, holding 57% and 73% of total assets respectively.

Source: Towers Watson and secondary sources

Methodology does not provide an estimate for 2012

Contact details and limitations of reliance

Jessica Gao
Towers Watson
+44 207 227 2061
jessica.gao@towerswatson.com

Liang Yin
Towers Watson
+44 1737 284762
liang.yin@towerswatson.com

Limitations of reliance – Thinking Ahead Group

This document has been written by members of the Thinking Ahead Group within Towers Watson. 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.

The contents of individual documents are therefore more likely to be the opinions of the respective authors rather than representing the formal view of the firm. No action should be taken on the basis of any Thinking Ahead documents without seeking specific advice.

Limitations of reliance – Towers Watson

Towers Watson has prepared this presentation for general information and education purposes only.

In preparing this report at times we have relied upon data supplied to us by third parties. While reasonable care has been taken to gauge the reliability of this data, this report therefore carries no guarantee of accuracy or completeness and Towers Watson cannot be held accountable for the misrepresentation of data by third parties involved.

This report is based on information available to Towers Watson at the date of the report and takes no account of subsequent developments after that date. It may not be modified or provided to any other party without Towers Watson's prior written permission. It may also not be disclosed to any other party without Towers Watson's prior written permission except as may be required by law. In the absence of our express written agreement to the contrary, Towers Watson accepts no responsibility for any consequences arising from any third party relying on this report or the opinions we have expressed. This report is not intended by Towers Watson to form a basis of any decision by a third party to do or omit to do anything.

Please note that investment returns can fall as well as rise and that past performance is not a guide to future investment returns. Towers Watson is authorised and regulated by the Financial Services Authority.