



# Pension Markets in Focus

2016

This annual report reviews trends in the financial performance of pension funds, including investment returns and asset allocation. Underlying data for the tables and graphs, plus a statistical annex, can be found in Excel format at [www.oecd.org/daf/pensions/pensionmarkets](http://www.oecd.org/daf/pensions/pensionmarkets).

The data complements information gathered at the pension fund level through the Survey of Large Pension Funds and Public Pension Reserve Funds. The survey is part of the OECD project on Institutional Investors and Long-term Investment. More information can be found at [www.oecd.org/fin/lti](http://www.oecd.org/fin/lti).

More information about pensions-related work is available at [www.oecd.org/pensions](http://www.oecd.org/pensions) and [www.iopsweb.org](http://www.iopsweb.org).

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## FOREWORD

Most countries allow or encourage individuals to save in funded private pension plans to complement their old-age pensions. Individuals can top up their future pensions through occupational retirement saving vehicles directly sponsored by their employers, or personal vehicles they have chosen directly from a pension provider. These vehicles can be pension funds, pension insurance contracts, or products offered by banks or investment companies. The number of pension funds and types of plans available vary across countries.

Development of funded private pension systems is uneven across countries. In some countries, private pensions are almost non-existent or still at a nascent stage and the number of pension funds and their administrators is limited. A low number of market players may lead to economies of scale, but can also potentially create an oligopoly with higher costs or lower returns for members.

The 2016 edition of *Pension Markets in Focus* describes the latest trends in funded pension systems in OECD and some non-OECD countries. For data availability reasons, the core analysis focuses on a single type of vehicle -- pension funds -- and compares the importance of the different types of plan these funds can manage (occupational/personal, defined benefit/defined contribution). While investments by pension funds have, in the main, been growing and their investment rates of return have, on average, been positive over the last ten years, the number of pension funds is falling in some countries as a result of mergers to reduce costs and create scale advantages, or as a consequence of competition.

A special feature examines whether there is a relationship between the number of pension funds and real investment rates of return net of investment expenses. Covering 20 countries, including some of the largest pension markets, an analysis of the period 2005-15 finds that countries with relatively few pension funds are more likely to have higher real net returns than countries with more pension funds. Results of this econometric analysis seem to indicate that a reduction in the number of pension funds could lead to higher returns.

This report includes pension statistics for OECD countries, selected International Organisation of Pension Supervisors (IOPS) countries and, for the first time, selected World Bank countries that are not members of either the OECD or IOPS.

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## HIGHLIGHTS

### >> **Private pension assets are worth more than USD 38 trillion and are mainly managed by pension funds**

Private pension assets topped USD 38 trillion worldwide in 2015. Assets invested through all pension vehicles in financial markets reached USD 36.9 trillion in the 35 OECD countries in 2015, and amounted to USD 1.3 trillion in a sample of 45 non-OECD countries. Pension funds were the main investors of these assets worldwide (USD 26 trillion, 68% of the total), followed by banks and investment companies (USD 7.7 trillion, 20.2%), insurance companies (USD 4.3 trillion, 11.3%) and employers through their book reserves (USD 0.2 trillion, 0.5%).

### >> **The importance of private pension systems across countries is uneven**

The size of investments through pension vehicles varies across countries. The largest values of invested assets in USD values are located in North America (United States, Canada), Western Europe (United Kingdom, Netherlands, Switzerland), Australia and Japan. Private pension invested assets are also high when compared to the size of the domestic economy in other countries, such as Chile, Denmark and South Africa, where they accounted for 70%, 206% and 97% of GDP in 2015, respectively. Private pension assets, however, still represented around, or less than, 20% of GDP in more than 50 countries in and outside the OECD area in 2015.

### >> **Pension fund assets have increased, real returns net of investment expenses have been positive, and at the same time the number of pension funds has declined, especially in Europe**

Pension fund investments have been increasing over recent years. Despite the fall in 2008 as a result of the financial crisis, pension fund investments in 2015 exceeded those ten years earlier and neared USD 25 trillion in the OECD area. This increase is partly due to positive real investment rates of return net of investment expenses, averaged over the last 10 years. Returns in 2015 were positive in most countries, but lower than in 2014. Despite the growth of assets and positive net real returns, the number of pension funds has declined in several European countries such as the Netherlands, Switzerland and the United Kingdom, probably as a result of the current competitive environment.

### >> **Countries with relatively few pension funds seem to have performed better than those with a greater number of pension funds over the period 2005-2015**

An analysis of the potential relationship between the number of pension funds and the real rate of return net of investment expenses was conducted on 20 countries, including some of the largest pension markets such as the United Kingdom and United States. This analysis suggests that countries with 30 to 149 pensions funds were more likely to experience higher real net rates of return than those with more than 150 pension funds, after controlling for the real growth rate of GDP, the size of the pension market, the asset allocation of pension funds and the developments in stock markets.

## PENSION MARKETS IN FOCUS

### Latest trends in funded pension systems

This section first looks at the overall funded pension systems in OECD countries and a selection of IOPS and World Bank members. Analysis focuses on the investment, rather than the liability, side of funded private pensions and shows the total size of invested assets. Different providers may offer these vehicles and be responsible for collecting and investing contributions of plan members and their employers. For data availability and completeness reasons, the rest of the section focuses on a single type of vehicle – pension funds – and presents some key features, such as the amount of their assets under management, their performance and their asset allocation. The last part of this section documents the decline in the number of pension funds that has occurred in some countries.

The OECD Global Pension Statistics data collection exercise collects data on total investment. The amount of assets can be estimated by using the amount of investments through all pension vehicles as a proxy. However some caveats apply as highlighted in Box 1.

#### Box 1. Total investment and total assets

One of the key indicators to measure the importance of funded pension systems is the amount of assets in all pension vehicles. However, the OECD Global Pension Statistics exercise currently does not compile this information directly. This statistical exercise only gathers the total investment by pension vehicles and its breakdown by asset classes.

As in previous issues of *Pension Markets in Focus*, this report uses the amount of investment as proxy for total assets in pension vehicles. This proxy may provide a low estimate of the amount of assets. Accounts payable or receivable and intangible assets may be considered as an asset of the provider but not as an investment. Private pension assets may also include claims on defined benefit (DB) plan sponsors. In the case of DB plans that are underfunded, pension funds may require employers to contribute more so that retirees receive the amount they were promised. In that case, this amount to be paid by employers is considered to be an asset of the plan, but is not an investment.

While the difference between investment and assets may generally be minor, there are some cases, such as the United States, where the difference can be more substantial as the table below shows. In the case of the United States, the difference comes mainly from claims on plan sponsors. These claims amounted to USD 4 trillion in 2015, according to the Federal Reserve Board's (FRB) *Financial Accounts of the United States*.

#### Total investment versus total assets of pension funds in a selection of countries, 2015

In millions of national currency

	Total investment	Total assets
Australia (1)	1,912,376	1,967,100
Spain	103,955	105,469
United States (2)	14,249,746	18,216,701

Notes: (1) The value of total assets is extracted from APRA Superannuation Bulletin, June 2015. (2) Source: FRB. Data for total assets only refer to financial assets. Source: OECD Global Pension Statistics, and national authorities.

### *Private pension assets are worth more than USD 38 trillion and are mainly managed by pension funds*

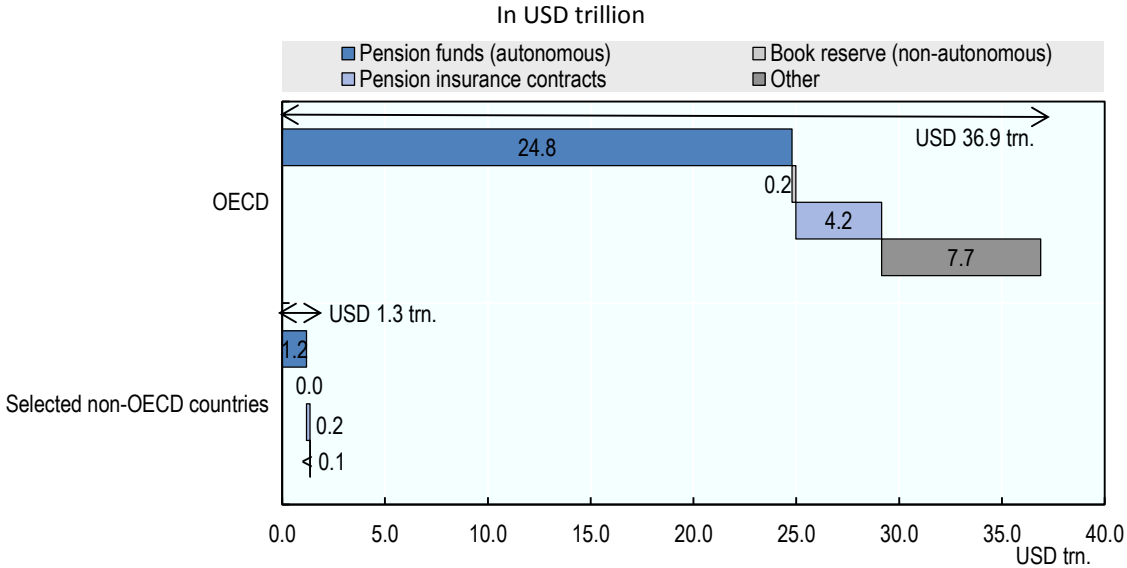
Employers, on behalf of their employees, or individuals themselves may be able to contribute to their retirement savings through different vehicles. They can save through a pension fund that may be

offered by a pension entity (e.g. a pension fund management company or another financial institution), through a pension insurance contract offered by a life or pension insurance company, or through any other retirement products offered by a bank or an investment company. These pension providers are responsible for investing the assets in financial markets. Employers can also put money aside for their employees’ retirement in their books, called book reserves (e.g. Germany).

Investments that were made through all pension vehicles in financial markets reached USD 38 trillion worldwide and USD 36.9 trillion in the 35 OECD countries in 2015 (Figure 1). The amount invested by pension providers of a sample of 45 non-OECD countries, including BRICS countries, amounted to USD 1.3 trillion.<sup>1</sup>

Figure 1 also shows that pension funds are the main vehicle for retirement savings both in the OECD area and selected jurisdictions outside the OECD. In the OECD area, pension funds or their management companies were the largest investors among pension providers with USD 24.8 trillion of investment, 67.2% of the total, followed by banks and investment companies (USD 7.7 trillion, 21.0%), insurance companies (USD 4.2 trillion, 11.3%) and employers through their book reserves (USD 0.2 trillion, 0.5%).<sup>2</sup> Outside the OECD, pension funds invested USD 1.2 trillion, and the pension-related portfolio of insurance companies amounted to USD 0.2 trillion. Book reserves and other financing vehicles are less common.

**Figure 1. Private pension investment by type of financing vehicle and geographical area, 2015**



Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

<sup>1</sup> BRICS = Brazil, the Russian Federation, India, China (People’s Republic of) and South Africa. The list of non-OECD jurisdictions in the sample is available in the Methodological notes section under notes for Figure 1.

<sup>2</sup> These numbers only refer to pension-related investments and do not include investments related to other businesses of these providers.

### *The size of the private pension sector is uneven across countries*

The size of pension providers' investments varies across countries. These investments are larger in USD terms and relative to GDP in North America, Western Europe and some other countries (Figure 2).<sup>3</sup>

The largest values in USD terms are located in North America (United States, Canada), in Western Europe (the United Kingdom, the Netherlands, Switzerland), in Australia and in Japan (Panel A). The amount of private pension assets in USD terms is lower in Latin America and Africa. Brazil and Chile have the largest amount of private pension assets in Latin America, as does South Africa among the reporting African countries.

Comparing the amount of private pension assets to the size of the economy, measured by the GDP, gives a better picture of the relative importance of the funded pension system domestically. Panel B in Figure 2 shows that private pension investments are also high relative to GDP, not only in the United States, but also in Canada, several European countries (e.g. Denmark, Iceland, Sweden), Latin America (e.g. Brazil and Chile), some African countries (e.g. Botswana, Namibia and South Africa), some Asian countries (e.g. Hong Kong (China), Japan and Korea) and in Australia.

For the OECD area, Figure 3 shows that the ratio of private pension investment to GDP ranges from 0.6% in Greece to 205.9% in Denmark, with a simple and weighted average of 49.5% and 123.6% respectively.<sup>4</sup> Five OECD countries are above this weighted average: Denmark (205.9%), the Netherlands (178.4%), Iceland (157.7%), Canada (156.9%) and the United States (132.9%).<sup>5</sup> Australia and Switzerland are slightly below the OECD weighted average, but investments through private pension vehicles exceed GDP in both countries. At the other extreme, 19 OECD countries have a ratio below 20% and of these, 13 have a ratio below 10%. In some of these 13 countries (e.g. France, Italy or Greece), the private pension sector has a limited presence in the domestic economy.

The average amount of assets invested through pension vehicles compared to the size of the economy is lower in the sample of non-OECD jurisdictions than in OECD countries. The simple and weighted averages in the non-OECD area were equal to 16.8% and 36.3% respectively. As in the OECD area, large disparities in private pension systems size are visible in the non-OECD area. The ratio of invested assets to GDP varies from 0.1% in Albania and Pakistan (although Pakistan's coverage of the system is incomplete) to 96.8% in South Africa. This ratio remains lower than 20% of the GDP in 31 out of the 45 reporting non-OECD jurisdictions.

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<sup>3</sup> Available data do not cover the whole funded pension system in some countries. The methodological notes section at the end of this document indicates the exact coverage represented in Figure 2.

<sup>4</sup> The weights are based on the values of private pension investments in USD terms in 2015.

<sup>5</sup> The actual size of the private pension systems in the Netherlands is even bigger as the reported value does not take into account occupational plans administered by life insurance companies.

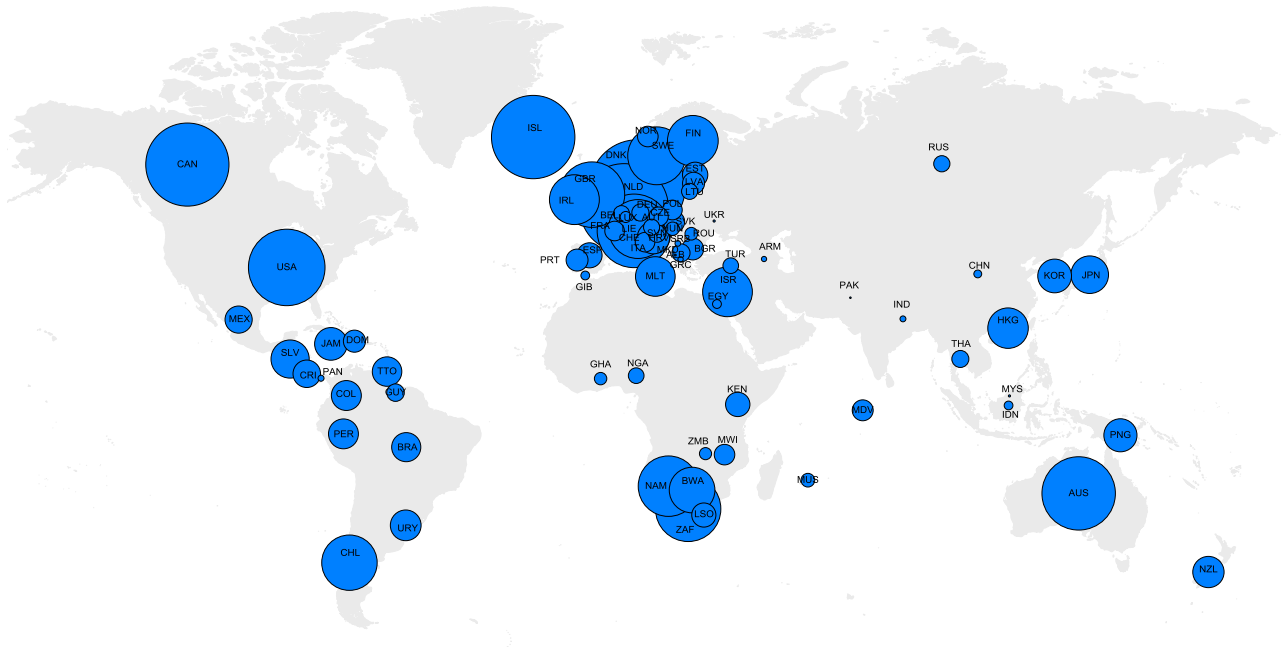


**Figure 2. Size of private pension investments worldwide, 2015**

A. In USD terms



B. As a percentage of GDP

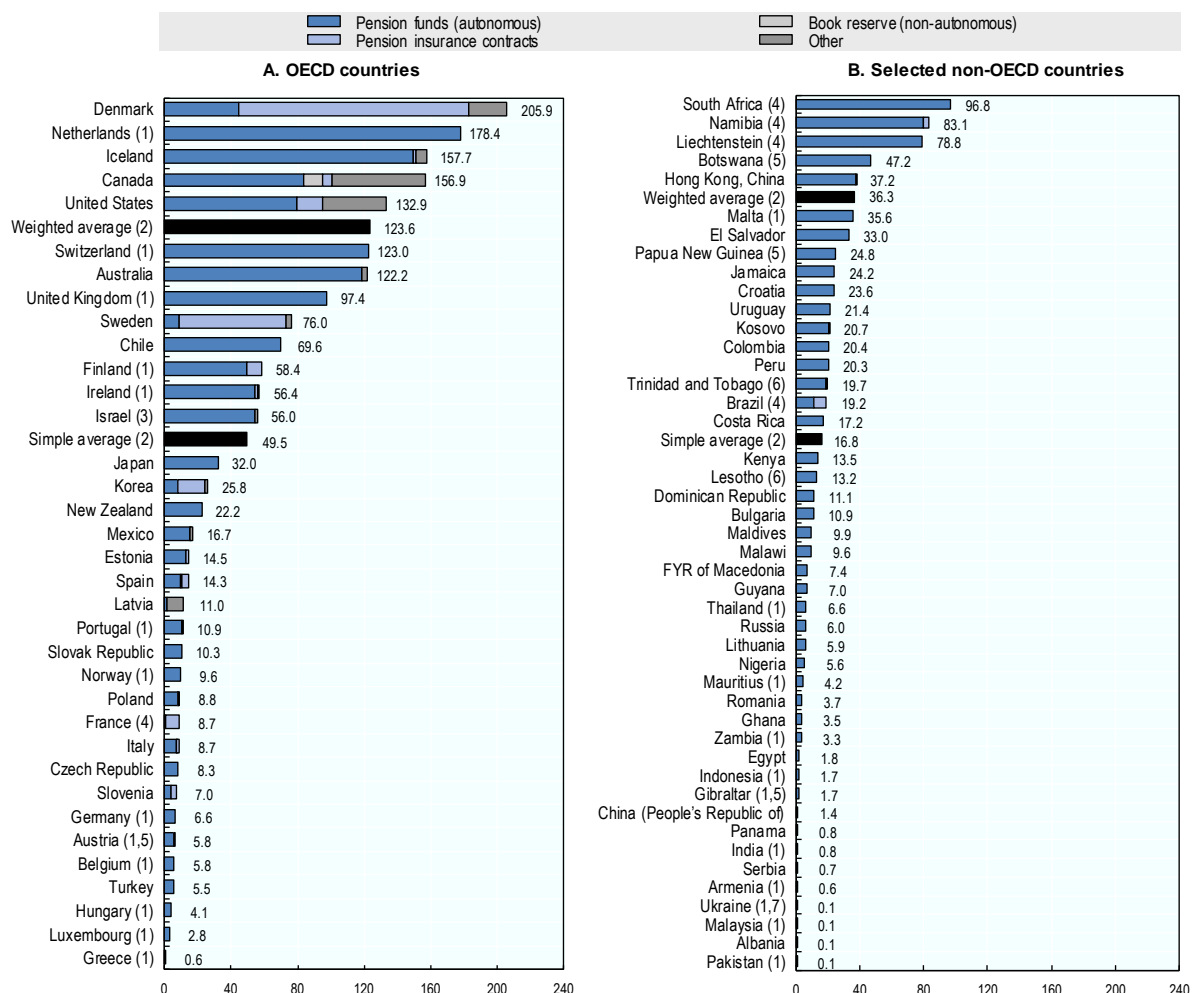


Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

**Figure 3. Importance of private pension investment compared to the size of the economy, by type of financing vehicle, in the OECD and selected non-OECD countries, 2015**

As a percentage of GDP



Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

Pension funds manage the biggest share of private pension assets in most countries. Figure 3 above shows that pension funds have more assets than all other financing vehicles combined in 30 OECD countries and in all non-OECD jurisdictions in the sample.<sup>6</sup>

Insurance companies offer pension insurance contracts in five countries with the largest ratio of pension-related assets to GDP: Canada, Denmark, Iceland, the Netherlands and the United States. In Denmark, specialised life insurance companies hold the largest amount of pension-related assets (67% of all assets of all pension vehicles in 2015).

<sup>6</sup> For some countries, the incomplete coverage of the data is generally due to a lack of information on these other vehicles. However, the general assertion that pension funds are the vehicles that manage the biggest share of assets in most countries remains accurate.

In the United States, assets invested by administrators, other than pension funds and insurance companies, are worth 38% of the American economy. Self-directed individual retirement accounts are managed by other types of administrators and not by pension funds or insurance companies.

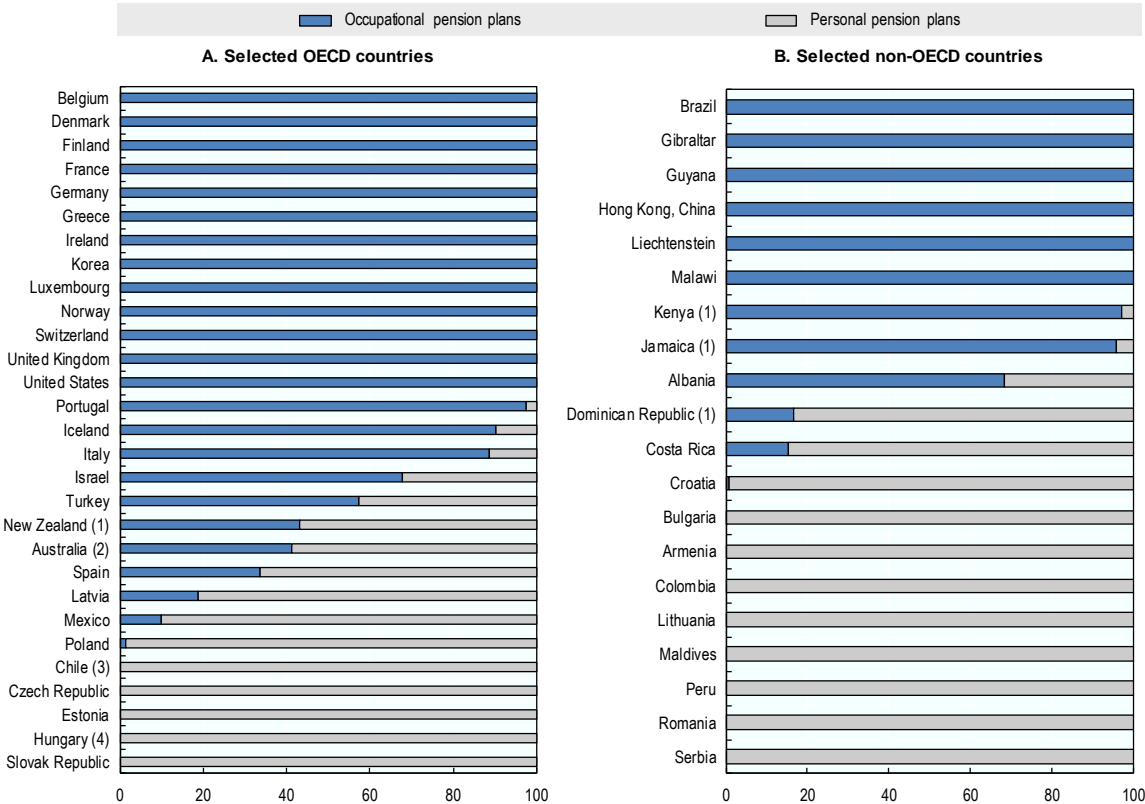
**Pension funds can manage different types of plans**

The remainder of this report focuses on pension funds as this is the vehicle for which disaggregate data are available and the most complete for the largest number of countries. Pension entities managing pension funds often manage only one type of plan (occupational or personal, sometimes only defined benefit (DB) or defined contribution (DC)).

In most countries, pension funds manage only one type of plan, either occupational or personal. OECD taxonomy defines occupational plans as plans where access is linked to an employment or professional relationship between the plan member and the entity that establishes the plan (OECD, 2005). Otherwise, the plan is considered as personal. Figure 4 shows that pension funds manage only occupational pension plans in 19 reporting jurisdictions (13 in the OECD and 6 outside the OECD area). Pension funds manage only personal plans in 12 jurisdictions (5 in the OECD, 7 outside).

**Figure 4. Split of pension fund investment between occupational and personal plans in selected OECD and non-OECD countries, 2015**

As a percentage of total investment



Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

Pension funds are primarily in charge of personal plans in Latin American (e.g. Chile, Colombia, Peru) and Central and Eastern European countries (e.g. the Czech Republic, Hungary, Romania, Serbia, the Slovak Republic). Employees are obliged to join a pension fund administrator, for example, in Chile, Colombia, Peru and Romania, but can choose the administrator and, to some extent, the funds and underlying investment strategies for their contributions.

When pension fund activities are limited to a specific segment such as occupational plans, other types of providers usually service the other segments, such as personal plans, especially in the OECD area. For instance, pension funds may manage the assets coming from occupational plans of public and private-sector workers only, while life insurance companies and banks offer individual retirement savings vehicles to the whole population (e.g. Belgium and Switzerland).

Pension funds manage both occupational and personal plans in 11 OECD countries and seven non-OECD countries. However, institutions administering pension funds may not be the same in countries where this financing vehicle is used for saving both in occupational and personal plans. In Italy, contractual pension funds and pre-existing autonomous pension funds can offer occupational plans only, while open pension funds can offer occupational and personal plans. Some funds may be established to manage occupational plans only, like closed pension funds in Latvia and Portugal, and access to these funds may be limited to a certain type of employee (e.g. public-sector funds in Iceland or state and local government employee retirement funds in the United States).

Companies that enter the private pension market may have to meet different operating requirements depending on the type of plan they offer and manage. Licensing requirements for pension funds or pension fund management companies vary according to whether they offer DB plans or DC plans. Additional licensing requirements such as a funding policy statement may be required when managing DB plans (Yermo and Tinga, 2007).

DC plans are widespread both in and outside of the OECD zone. Assets in these plans represent more than half of pension fund assets in 17 OECD countries and 21 non-OECD jurisdictions (Figure 5). The OECD taxonomy considers plans as DB if the plan sponsor (e.g. the employer) has to pay additional contributions in case of plan underfunding. Otherwise the plan is considered as a DC plan. By definition, personal pension plans are DC as employers do not sponsor these plans.

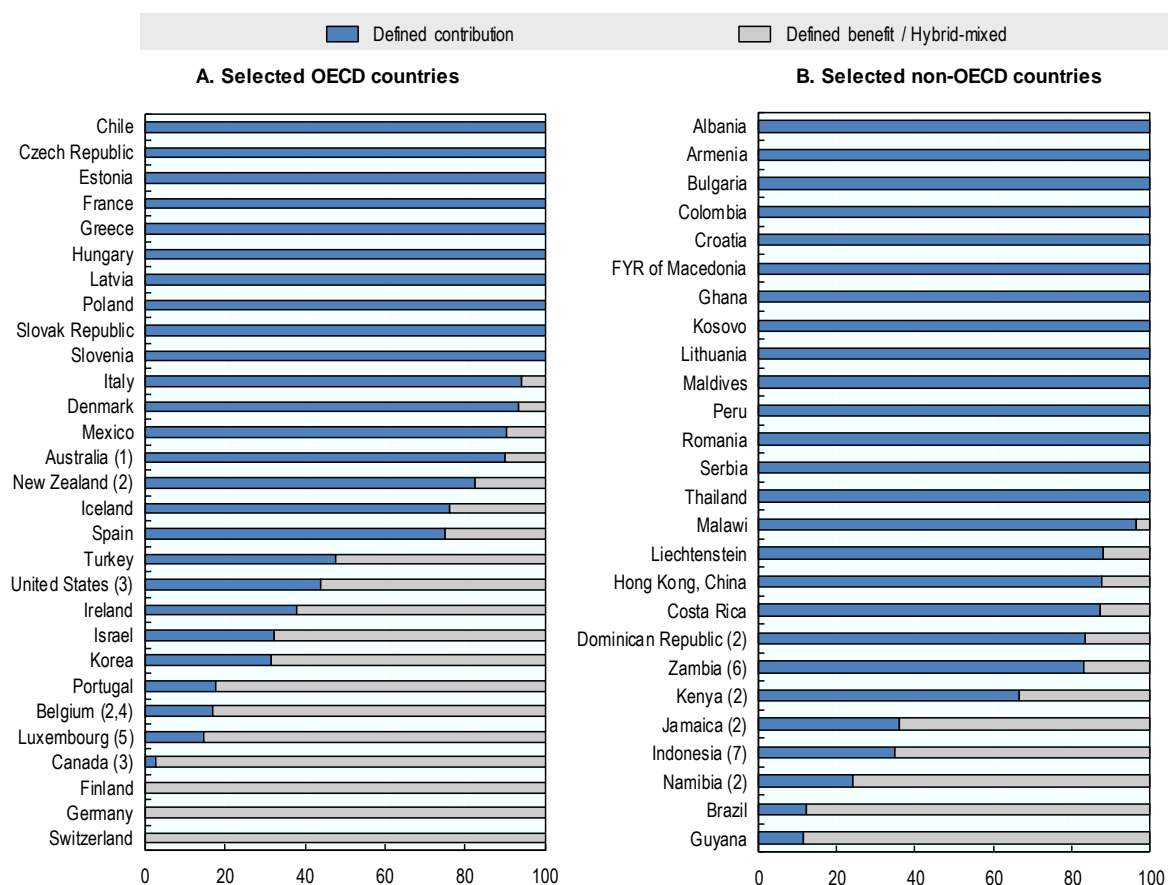
Although DC plans are present in most countries, the share of pension fund assets in DB plans is still significant in large pension markets, such as Canada, Switzerland and the United States. In Canada and the United States, respectively 97.5% and 56.0% of occupational plans that are managed by pension funds are of DB type (traditional or hybrid-mixed). Cash balance plans in the United States are considered as DB hybrid plans.<sup>7</sup>

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<sup>7</sup> Cash balance plans are not considered as traditional DB plans as benefit payments are not based on a formula depending on the wage of plan members and the length of employment. Benefits of cash balance plans depend on a fixed contribution rate and a guaranteed rate of return. In this sense, they look similar to DC plans with

**Figure 5. Split of pension fund investment between DB and DC plans in selected OECD and non-OECD countries, 2015**

As a percentage of total investment



Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

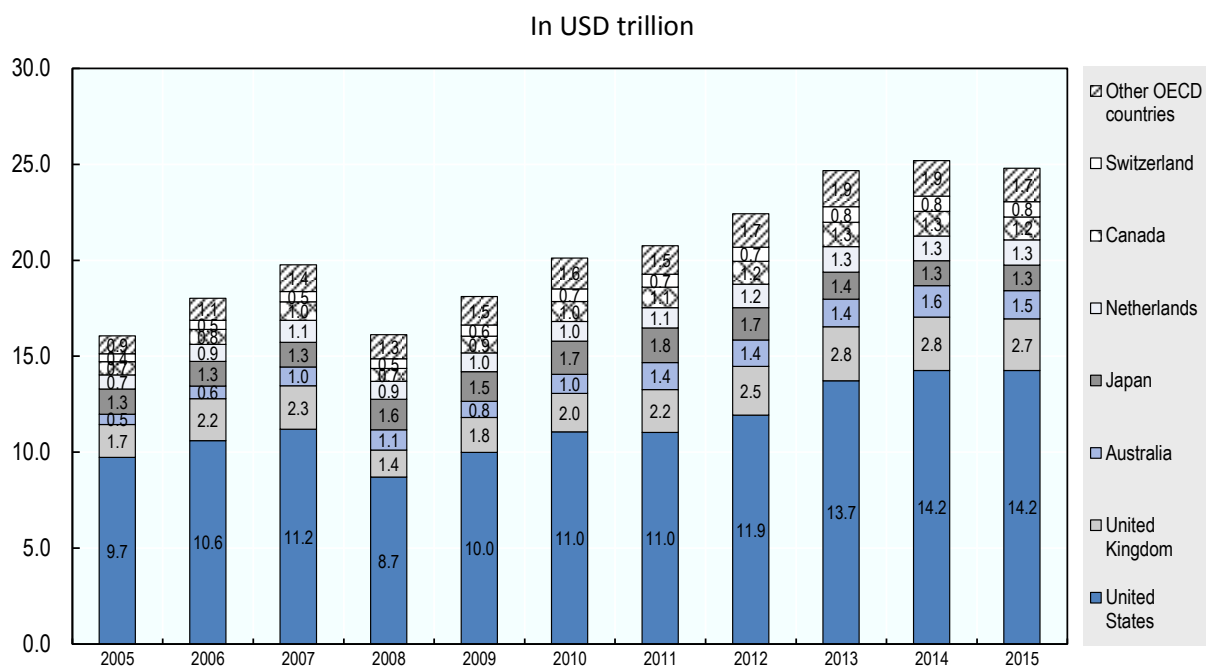
### Expanding assets of pension funds

Pension funds have experienced an increase in their investments over the last ten years in the OECD area, independently of whether they manage occupational or personal, DB or DC, mandatory or voluntary plans.

Pension fund investments amounted to USD 25 trillion in 2015 and exceeded those of 2005, despite the fall in 2008 resulting from the financial crisis (Figure 6). They grew on average by 4.3% over the 5-year period Dec 2010-Dec 2015 and 4.4% over the 10-year period Dec 2005-Dec 2015.

guarantees (or protected benefits). As the employer is responsible for providing this guarantee, the OECD taxonomy considers this type of plan as DB.

**Figure 6. Pension fund investment in the OECD area, broken down by country, 2005-2015**



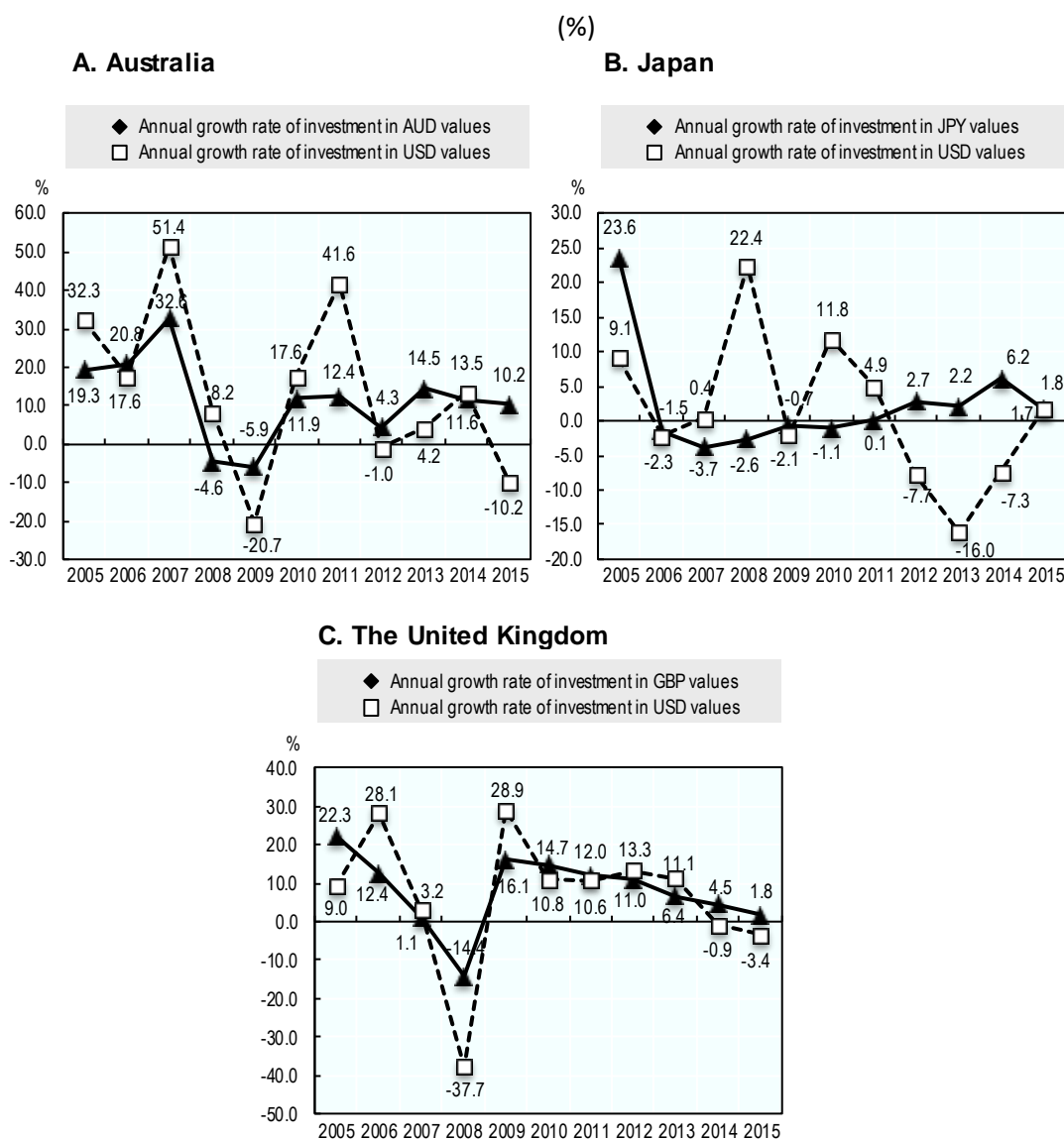
Source: OECD Global Pension Statistics.

The United States, United Kingdom, Australia, Japan and the Netherlands represented most of pension fund total investment (in USD terms) in the OECD in 2015. Altogether, these five countries accounted for 85% of OECD pension fund investments in 2015.

The slight decline of OECD pension fund investments in 2015 compared to 2014 was partly due to the stagnation of pension fund investments in the United States in 2015 which did not offset the slight fall, in USD terms, in Australia, Canada and the United Kingdom. Pension fund investments, expressed in USD, fell in Australia (from USD 1.6 trillion in 2014 to USD 1.5 trillion in 2015), Canada (from USD 1.3 trillion to USD 1.2 trillion) and the United Kingdom (from USD 2.8 trillion to USD 2.7 trillion), while they increased slightly in the Netherlands and in Japan.

Pension fund investments in national currency increased between 2014 and 2015 in all OECD countries, except Denmark, Finland, Luxembourg and Poland. Australian pension fund investments increased by 10.2% between 2014 and 2015 (from AUD 1.7 trillion to AUD 1.9 trillion). The fluctuation of exchange rates between the Australian and US dollar during 2014-2015 led to a reduction of Australian pension fund investments by 10.2% in USD terms between 2014 and 2015 (Figure 7). Likewise, pension fund investments increased in national currency while they decreased when expressed in USD terms in 2012, 2013 and 2014 in Japan, and in 2014 and 2015 in the United Kingdom. Statistical annexes A.1 to A.3 report the evolution of pension fund investments in millions of national currency, millions of USD, and as % of GDP in OECD and non-OECD countries between 2005 and 2015.

**Figure 7. Annual growth rates of pension fund total investment expressed in national currency and in USD in selected OECD countries, 2005-2015**



Source: OECD Global Pension Statistics; Bank of Japan.

***On average, real net investment rates of return are positive in most countries in 2015 and also over the last 5 and 10-year periods***

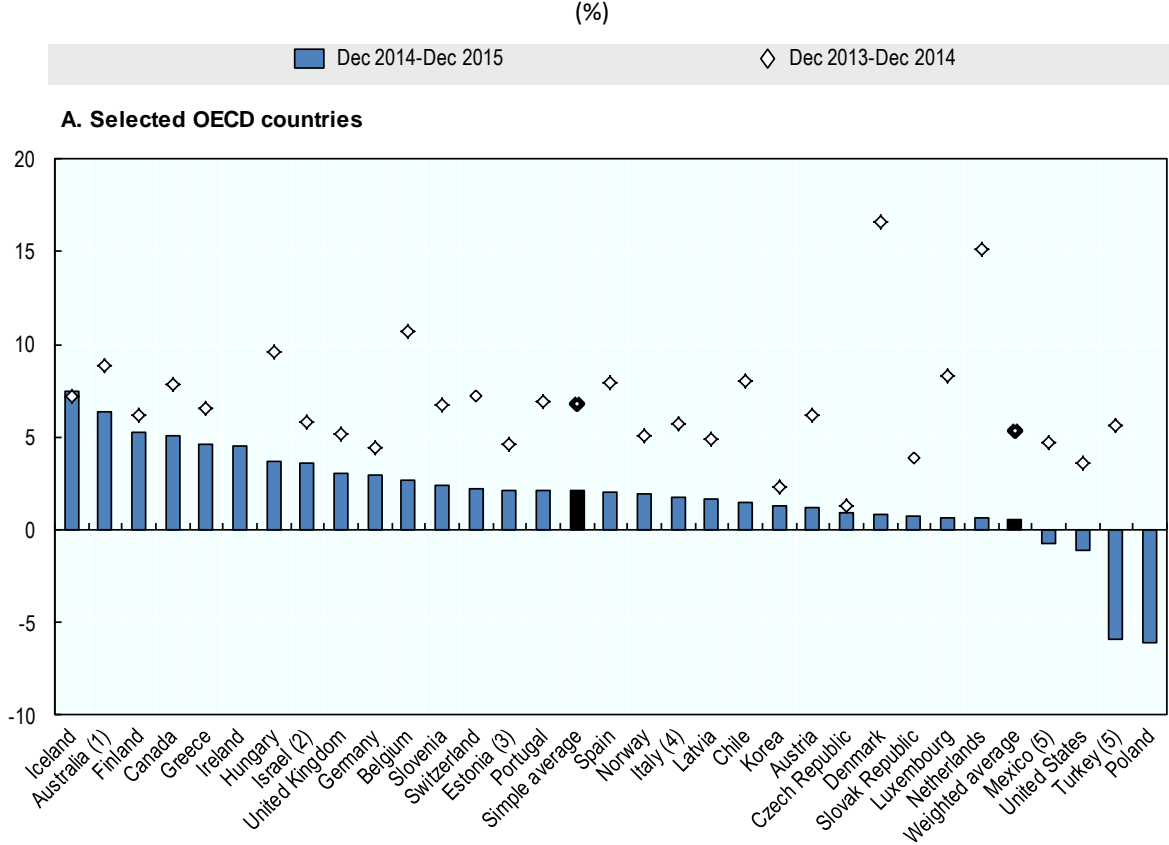
The performance of pension fund investments, measured by the real investment rate of return net of investment expenses, was positive in most reporting OECD and non-OECD countries in 2015 and over the last 5 and 10-year periods.

However, real net returns in 2015 were lower than in 2014 in all reporting OECD countries except Iceland (Figure 8). Pension funds' real investment rates of return averaged 2.1% in 2015, compared to 6.8% in 2014 among the same sample of reporting OECD countries. Real returns in 2015 ranged

from -6.1% in Poland to 7.4% in Iceland. Twenty-seven OECD countries recorded positive real net returns in 2015, with only four countries experiencing negative real net returns: Mexico (-0.8%), the United States (-1.1%), Turkey (-5.9%) and Poland (-6.1%). The negative real net return in the United States brings the OECD weighted average close to 0 because of the large weight of the United States in total pension fund investments.

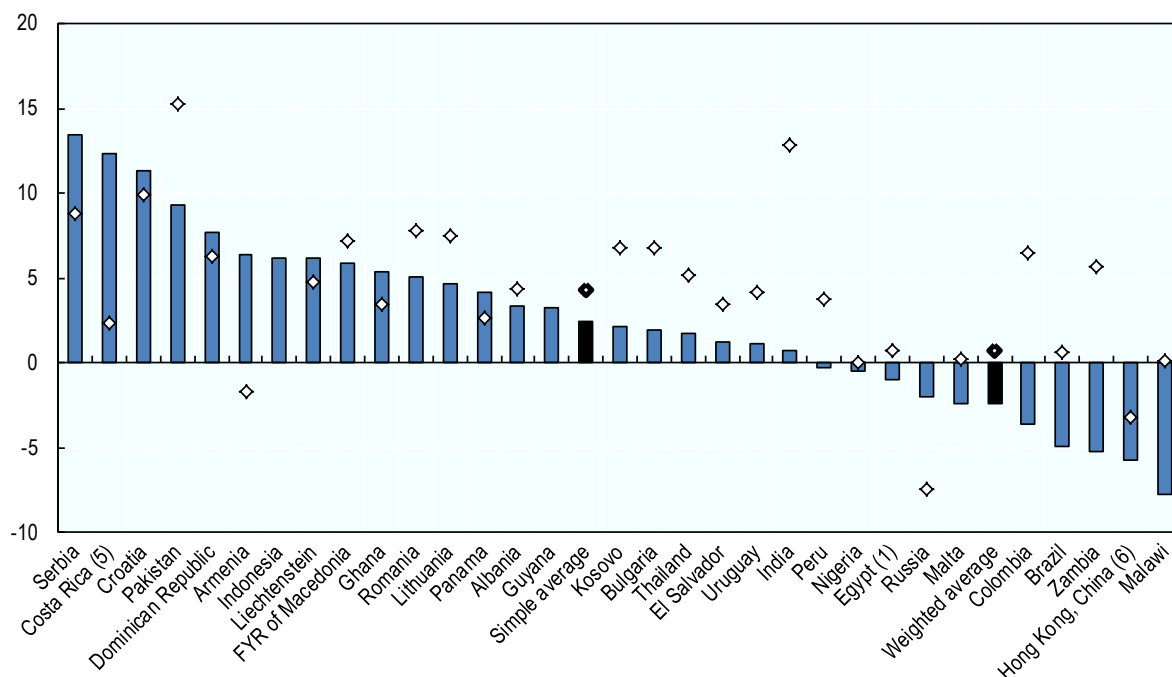
The simple and weighted average real net investment rates of return were also lower in 2015 than in 2014 outside the OECD area. The weighted average in 2015 was even negative (-2.4%). Real returns were below 0% in ten jurisdictions, including three of the largest outside the OECD in terms of assets, namely Russia (-2.0%), Brazil (-4.9%) and Hong Kong, China (-5.8%). The lowest return in 2015 was recorded in Malawi (-7.8%). By contrast, pension funds in 21 out of 31 reporting non-OECD countries achieved positive real returns in 2015, peaking at 13.5% in Serbia.

**Figure 8. Pension funds' real net rate of investment returns in selected OECD and non-OECD countries, Dec 2013 - Dec 2014 and Dec 2014 - Dec 2015**





## B. Selected non-OECD countries



Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

Over a longer time period, the average 5-year investment rates of returns were positive in all reporting countries in nominal terms and remained positive in most of them even after adjusting for inflation (Table 1). Average annual 5-year real net returns, calculated over Dec 2010-Dec 2015, were positive in all reporting OECD countries except Turkey (-2.0%). The highest average annual real net returns observed were in Canada (6.4%), Australia (6.2%) and the United Kingdom (6.1%). Five-year average real net returns were higher than 5% in six countries (Australia, Canada, Denmark, Iceland, the Netherlands and the United Kingdom) and were above 2% in 12 further countries, including Chile, Mexico and the United States. Outside the OECD, the 5-year average annual real net returns ranged from -3.1% in Hong Kong, China to 8.7% in Pakistan. Average real net returns were positive in all reporting non-OECD jurisdictions except Nigeria (-0.5%), Peru (-1.1%), Malta (-1.3%) and Hong Kong, China (-3.1%).

Among countries for which it was possible to calculate a 10-year average annual real net return over Dec 2005-Dec 2015, average net returns were positive everywhere except in Estonia, Latvia and Bulgaria. Three countries had 10-year average annual real net returns above 5%: Uruguay (5.6%),

Colombia (5.9%) and the Dominican Republic (6.2%). The 10-year average of pension fund real net investment rates of return was close to 5% in the United Kingdom.<sup>8</sup>

**Table 1. Pension fund nominal and real 5-year and 10-year geometric average annual returns in selected OECD and non-OECD countries**

(%)

A. Selected OECD countries					B. Selected non-OECD countries				
Country	5-year average		10-year average		Country	5-year average		10-year average	
	Nominal	Real	Nominal	Real		Nominal	Real	Nominal	Real
Iceland	9.1	5.7	6.9	1.2	Pakistan	16.2	8.7	..	..
Australia (1)	8.7	6.2	6.2	3.4	Uruguay	14.6	5.6	14.0	5.6
United Kingdom	8.2	6.1	7.3	4.7	Dominican Republic	11.6	7.4	11.5	6.2
Canada	8.0	6.4	5.9	4.2	Serbia	10.8	5.7	..	..
Netherlands	7.9	6.1	5.5	3.8	Costa Rica (2)	10.1	6.4	9.9	3.6
Denmark	7.1	5.8	5.8	4.0	Nigeria	9.0	-0.5	..	..
Belgium	6.2	4.6	5.1	3.2	India	8.2	0.6	..	..
Mexico (2)	6.2	2.6	6.5	2.4	Romania	7.3	5.3	..	..
Chile	6.0	2.3	6.8	3.0	Colombia	5.9	2.1	10.3	5.9
Turkey (2)	6.0	-2.0	10.7	2.3	FYR of Macedonia	5.9	4.3	..	..
Norway	5.8	4.1	5.5	3.4	Panama	5.3	2.1	..	..
Israel (3)	5.1	4.2	5.6	3.7	Albania	5.3	3.5	..	..
Spain	4.7	3.8	..	..	Lithuania	4.4	3.1	..	..
United States	4.4	2.9	2.2	0.4	Thailand	3.8	2.1	..	..
Luxembourg	4.4	2.8	3.0	1.1	Bulgaria	3.7	2.9	2.6	-0.8
Austria	3.9	1.9	2.6	0.6	El Salvador	3.3	1.7	4.2	1.7
Slovenia	3.9	2.8	..	..	Liechtenstein	2.7	2.7	..	..
Italy (4)	3.8	2.5	3.2	1.6	Peru	2.5	-1.1	7.1	3.8
Korea	3.7	1.9	3.8	1.3	Hong Kong, China (6)	0.9	-3.1	..	..
Portugal	3.5	2.4	3.2	1.8	Malta	0.1	-1.3	..	..
Greece	3.3	3.5	..	..					
Latvia	3.1	1.9	3.0	-0.7					
Estonia (5)	2.3	0.9	1.0	-2.2					
Slovak Republic	1.9	0.4	..	..					
Czech Republic	1.9	0.6	2.1	0.1					

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

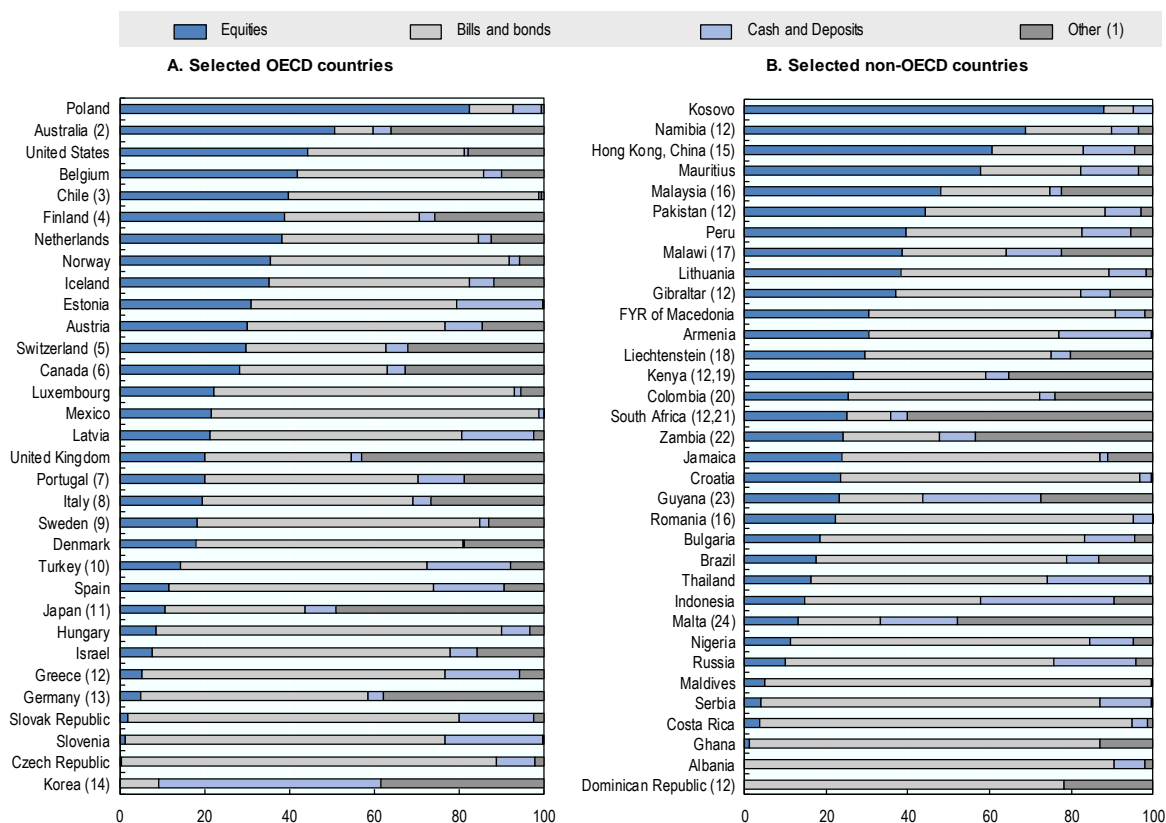
### *Returns probably driven by movements in equity and bond markets*

The investment performance of pension funds was probably driven by developments in the equity and bond markets as pension funds usually directed most of their investments towards these two asset classes. Investments in these two asset classes accounted for more than 75% of pension fund portfolios in 20 OECD countries and 24 non-OECD jurisdictions in 2015 (Figure 9).

<sup>8</sup> Annex tables A.4 and A.5 give the complete time series of pension fund nominal and real rates of return between 2005 and 2015. Annex table A.6 provides the variation of consumer price indices over the same period.

**Figure 9. Pension fund asset allocation for selected investment categories in selected OECD and non-OECD countries, 2015**

As a percentage of total investment



Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

Equities dominated pension fund portfolios in six reporting jurisdictions: Australia; Hong Kong, China; Kosovo; Mauritius; Namibia and Poland. In these six countries, pension funds invested more than 50% of their assets in equities directly or indirectly through collective investment schemes. Pension funds in Belgium, Malaysia, Pakistan and the United States invested between 40% and 50% of their portfolio in equities.

Pension funds in some Asian markets such as Hong Kong, China, experienced negative real returns in 2015, because of negative developments in Asian stock markets.

***The number of pension funds has declined in a significant number of countries***

The number of pension funds in each country varies from a few to thousands. While the numbers of pension funds are low in Central and Eastern Europe, as well as in Latin America, there are many more pension funds operating in Anglo-Saxon countries. In Ireland and the United Kingdom, the number of trust-based schemes is between 40 000 and 70 000 according to the latest data available (Table 2). In Australia, the number of pension funds (mostly self-managed superannuation funds)

exceeds 500 000. The highest number of pension funds was observed in the United States where the number of private pension plans that require completion of a Form 5500 was around 685 000 in 2014. By contrast, in some countries where the funded pension system is still quite recent (e.g. Albania, the Former Yugoslav Republic of Macedonia), the number of pension funds is below 10.<sup>9</sup>

**Table 2. Number of pension funds in 2015, compared to 2005, in selected OECD and non-OECD countries**

**A. Selected OECD countries**

Evolution of the number of funds since 2005 (or first year available)	Country	Number of funds in 2015 (or latest year available)	Change compared to 2005 (or first year available)	
			% change	Absolute difference
Increase	United States (1,2)	685,203	0.9	6,108
	Australia	559,547	82.5	252,994
	Canada (2)	8,876	100.5	4,450
	Spain	1,688	34.5	433
	Turkey (3)	223	145.1	132
	Mexico (3)	55	71.9	23
	Poland (4)	25	25.0	5
	Estonia (5)	20	33.3	5
	Luxembourg	17	6.3	1
	Latvia (6)	15	15.4	2
	Greece (2,7)	11	266.7	8
	Slovenia (8)	9	28.6	2
	Stable	Chile (9)	30	0.0
Decrease	Ireland (10)	67,840	-19.4	-16,306
	United Kingdom (11)	43,690	-52.3	-47,984
	Switzerland (2)	1,866	-32.6	-904
	Netherlands (12)	320	-60.1	-482
	Italy	283	-37.7	-171
	Portugal	217	-2.7	-6
	Belgium (4)	196	-24.0	-62
	Germany	171	-3.9	-7
	Norway	87	-26.9	-32
	Hungary	48	-46.7	-42
	Slovak Republic (4)	37	-5.1	-2
	Israel	29	-3.3	-1
	Iceland	26	-43.5	-20
	Denmark	20	-60.0	-30
	Austria	13	-35.0	-7

**B. Selected non-OECD countries**

Evolution of the number of funds since 2005 (or first year available)	Country	Number of funds in 2015 (or latest year available)	Change compared to 2005 (or first year available)	
			% change	Absolute difference
Increase	Bulgaria	28	16.7	4
	Pakistan (7,13)	13	116.7	7
	FYR of Macedonia (7)	4	100.0	2
Stable	Albania (7)	3	0.0	0
Decrease	Thailand (7)	412	-19.7	-101
	Brazil (13,14)	317	-14.6	-54
	Indonesia	255	-18.3	-57
	Hong Kong, China (15)	38	-17.4	-8
	Nigeria (7,16)	28	-9.7	-3
	Liechtenstein	23	-43.9	-18
	Romania (14)	17	-26.1	-6
	Peru	12	-20.0	-3
	Colombia (4,17)	4	-33.3	-2
	Serbia (7)	4	-42.9	-3

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

The number of pension funds has decreased in 15 OECD and 10 non-OECD countries compared to 2005. Fourteen of the fifteen countries within the OECD that saw a reduction in the number of pension funds are European, with either a high number of pension funds (such as Ireland and the United Kingdom) or with fewer pension funds (such as Austria). The biggest change, compared to 2005, occurred in the Netherlands (-60.1%), Denmark (-60.0%) and the United Kingdom (-52.3%). The largest decrease in the total number of pension funds in absolute terms occurred in the United

<sup>9</sup> The complete time series of the number of funds between 2005 and 2015 is available in Annex table A.7.

Kingdom (47 984 funds fewer in 2015 than in 2005) and Ireland (16 306 funds fewer in 2015 than in 2005).

By contrast, the number of pension funds was higher in 12 OECD and 3 non-OECD countries in 2015 than in 2005. The United States, for which data is only available until 2014, had 6 108 (0.9%) more private pension schemes in 2014 than in 2005 and counted 685 203 schemes in 2014. However, Annex table A.7 shows that the number of schemes peaked at 717 532 in 2008 and has been declining every year since then (except between 2012 and 2013, and 2013 and 2014).

The reduction in the number of pension funds may have been the result of mergers, closures or acquisitions. Mergers between pension funds may result in economies of scale and potentially help pension funds to become more competitive. Managing and running a scheme may require collecting contributions from plan members and sometimes from employers, investing and managing assets, complying with regulations, having appropriate governance structures, and paying benefits to retirees, among others. Merging pension plans or funds may generate economies of scale. The consolidation in the pension sector in the Netherlands may be attributed to the search for economies of scale and cost reductions. Spain reported merger activities among managing entities and a reduction in the total number of funds between 2014 and 2015, although the total number of funds was higher in 2015 than in 2005.

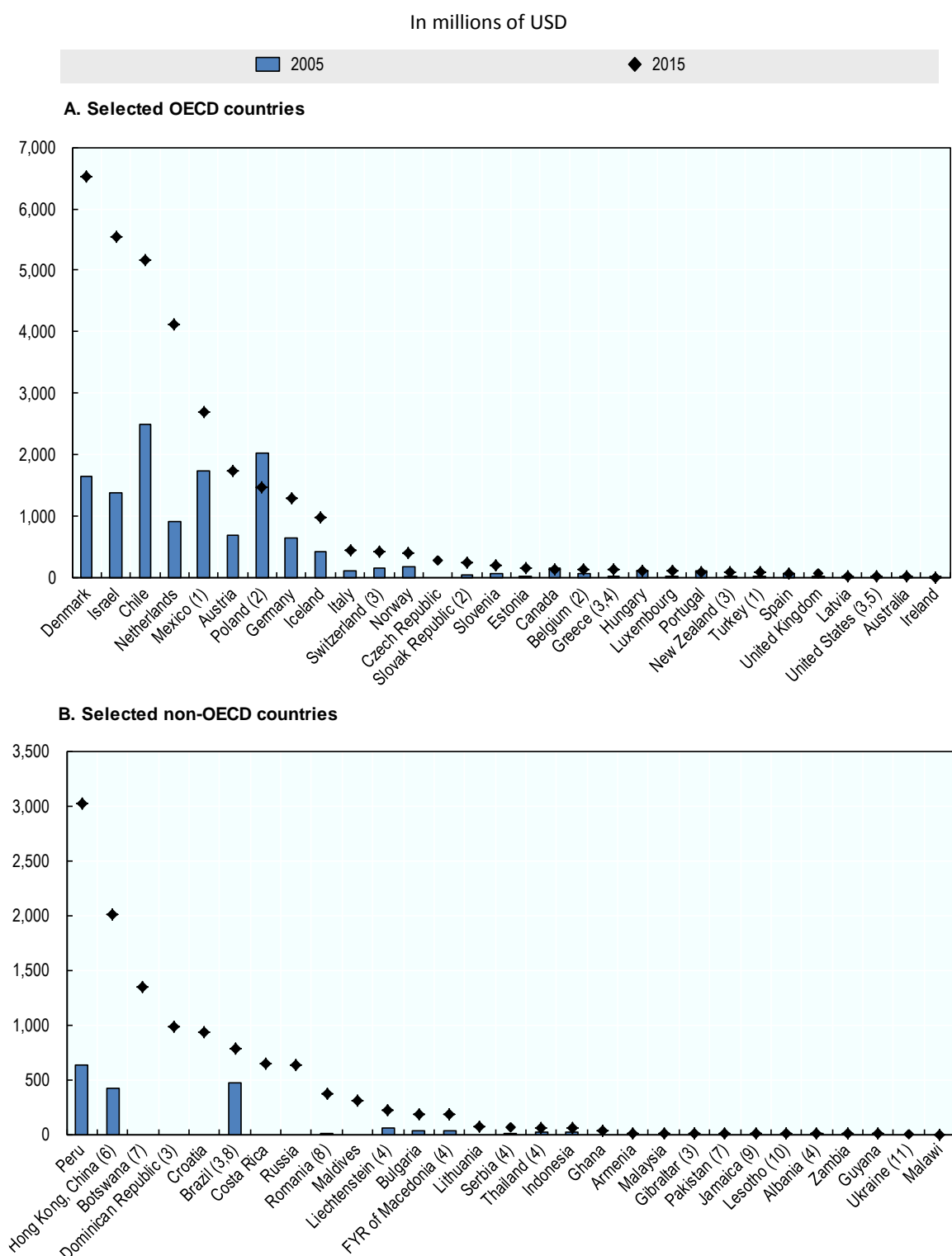
Pension scheme closures may result from difficulties in delivering the terms of contracts or meeting funding requirements in case of DB plans. The 2008 financial crisis and falling interest rates caused the funding position of DB plans to deteriorate. Difficulties in meeting funding requirements may have led underperforming funds to wind up. The Pension Authority (2015) reports that 40% of the DB schemes subject to the funding standard (and not in wind-up) in Ireland were not in compliance with the standard at the end of 2015. Forty-four schemes were in wind-up at the end of 2015 in Ireland.

Some European countries encouraged a reduction in the number of funds (especially those where this number is high). In 2015, the United Kingdom considered pooling the assets of the 89 local government pension funds into six wealth funds to limit management costs and fees.

The amount of assets invested per pension fund has increased between 2005 and 2015 in almost all countries for which data were available. The average size of a pension fund is higher in 2015 than in 2005 in 26 reporting OECD countries and all the 11 non-OECD jurisdictions reporting data for both years (Figure 10). Pension fund assets have been growing while the number of funds was shrinking (e.g. in Denmark, the Netherlands) or increasing at a slower pace (e.g. in Mexico). Only three reporting countries experienced a diminution of the average size of pension funds: Canada, Poland and Portugal. In two countries, a portion of the assets of pension funds was transferred to the pay-as-you-go system (Portugal in 2011 and Poland in 2014).

Consolidation of the pension sector may benefit individuals if, for example, fees charged become lower or real net investment rates of return become higher. The next section of this report examines whether there is a link between the number of pension funds and the real net of investment expenses rate of return across countries and over time.

**Figure 10. Average size of pension fund (ratio of investment to the number of funds) in selected OECD and non-OECD countries, 2005 and 2015**



Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

## **Special feature: Is there a link between the number of funds and overall investment performance?**

Pension systems, especially in Europe, are consolidating in an attempt to seek economies of scale, or closing because of underfunding issues or difficulties in meeting funding requirements. A lower number of pension funds may lead to higher returns as larger pension funds may achieve lower management costs. Countries with a declining number of pension funds may experience higher net returns if underperforming funds exit the market. Alternatively, a low number of pension funds may lead to a situation of oligopoly with a potentially lower level of competition than in countries with more funds. Competition between providers is supposed to lower costs and yield higher returns.

This special feature examines available data to see if there is a link between the number of pension funds and the real net of investment expenses rate of return. The analysis is conducted on a sample of 20 countries, including some of the largest pension markets (e.g. Australia, Canada, the Netherlands, Switzerland, United Kingdom, United States), beginning with 2015, and then over the period 2005-2015.

The analysis shows that there is no relationship between the number of pension funds and the real net rates of return in 2015. A panel data analysis over previous years finds that countries with relatively fewer pension funds were more likely to have experienced higher real net returns in the period between 2005 and 2015 than countries with more pension funds.

### ***Real net returns and the number of pension funds do not show a linear correlation in 2015***

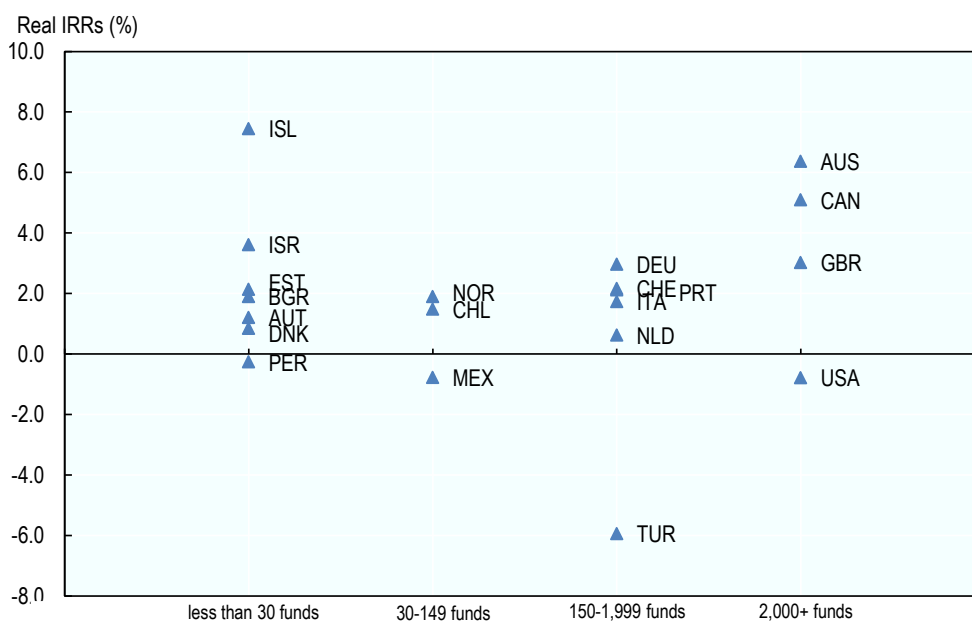
The analysis first examines the potential link between the number of pension funds and the real net returns in 2015. This analysis is conducted on 20 countries, namely: Australia, Austria, Bulgaria, Canada, Chile, Denmark, Estonia, Germany, Iceland, Israel, Italy, Mexico, Netherlands, Norway, Peru, Portugal, Switzerland, Turkey, United Kingdom and United States.<sup>10</sup> Assets that are invested by pension funds in these 20 countries represent more than 65% of total pension assets worldwide.

The correlation coefficient between real net returns and the number of pension funds is almost zero (0.08) in 2015. Figure 11 shows that the highest return was observed in Iceland which has less than 30 funds. Turkey, with 223 pension mutual funds, experienced the lowest return. Australia and Canada, which are among the countries with the biggest number of funds, had the highest returns in 2015 after Iceland.

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<sup>10</sup> The analysis only considers pension funds managing personal pension plans in Mexico and Turkey, and private pension funds in the United States.

**Figure 11. Pension fund real rate of return and number of funds in selected countries, 2015**



Source: OECD Global Pension Statistics.

*A panel data analysis of the link between real net returns and the number of pension funds suggests that over the period 2005-2015 sample countries with 30 to 149 pension funds were likely to experience higher net returns than countries with more pension funds*

Performing an initial panel estimation of the relationship between the real net rate of return and the number of pension funds over the period 2005-2015 for 20 countries, with country fixed effects and time fixed effects, suggests again that there is not a linear link between these two variables. The coefficient associated with the number of pension funds is close to 0 and the p-value is much higher than 0.05 (0.826), which indicates the coefficient's value is statistically insignificant.

The analysis above did not find any linear relationship between real net returns and the number of pension funds. However, one cannot rule out other types of relationship, e.g. the non-linear ones. To assess whether there is a non-linear link between these two variables one could categorise the explanatory variable of interest and run a panel data analysis again with the new categorical variable. Furthermore, introducing additional explanatory variables may disentangle the link between real net returns and the number of pension funds.

The analysis breaks down the number of funds into four categories. These categories broadly follow the quartiles of the distribution of the number of funds (Table 3). They are the following: i) countries with less than 30 funds; ii) countries with 30 to 149 funds; iii) countries with 150 to 1 999 funds; iv) and countries with 2 000 or more funds. Each category has approximately the same number of countries each year (Table 4).



**Table 3. Distribution of the number of pension funds in the sample**

	all years
Min	12
1st quartile	30
Mean	59,765
Median	109
3rd quartile	1,294
Max	717,532

Source: OECD Global Pension Statistics.

**Table 4. Number of funds in the sample broken down by categories, 2005-2015**

Number of countries with:	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Less than 30 funds	4	4	4	4	4	4	4	5	6	6	7	52
30-149 funds	7	7	7	7	7	7	6	5	4	4	3	64
150-1,999 funds	4	4	4	4	4	4	5	5	6	6	6	52
2,000+ funds	5	5	5	5	5	5	5	5	4	4	4	52
Total	20	20	20	20	20	20	20	20	20	20	20	220

Source: OECD Global Pension Statistics.

The additional explanatory variables following the empirical literature (Boon et al., 2013; Musalem and Pasquini, 2012), used in the panel data analysis to assess the relationship between the real net rate of return and the new categorical variable of the number of pension funds (“NBFUND\_CAT”) are:<sup>11</sup>

- the real growth rate of GDP (“RGROWTH\_GDP”) to control for macroeconomic factors,
- the amount of pension fund investment relative to GDP (“INV\_GDP”) to control for the size of pension market,
- the share of pension fund portfolio allocated to bills and bonds (“SHARE\_BOND”) or to equities (“SHARE\_EQ”) to control for different pension fund investment strategies,<sup>12</sup>
- the growth rate of the country-specific MSCI Index (“DEV\_EQMARKET”) to control for developments in stock markets.<sup>13</sup>

The analysis assessed the correlations between explanatory variables to check for possible multicollinearity. The results of these correlations (Table 5) indicate that the highest correlation between explanatory variables observed is between the share of pension fund portfolio in equities and the share in bills and bonds (-0.69). As this correlation is above the absolute 0.68 threshold defined by Taylor (1990), the variables related to the share of pension fund allocation to equities and to the share to bills and bonds should not be introduced together as explanatory variables. Investigating each of them separately suggested that the share of bills and bonds in the portfolio has

<sup>11</sup> Given the size of the sample, the number of controlling variables that are considered for this analysis is limited to avoid increasing variance of estimated coefficients.

<sup>12</sup> Shares of pension fund portfolios allocated to equities and to bills and bonds between 2005 and 2015 are shown in Annex table A.8 and Annex table A.9 respectively.

<sup>13</sup> For Iceland the analysis uses the growth rate of the Share Price Index Iceland (ICEX-15).

a stronger explanatory statistical significance than the share of equities. Therefore, the results presented and discussed below have the share of bills and bonds as an explanatory variable.

**Table 5. Correlations between selected explanatory quantitative variables between 2005 and 2015**

	RGROWTH_GDP	INV_GDP	SHARE_BOND	SHARE_EQ	DEV_EQMARKET
RGROWTH_GDP	1.0000				
INV_GDP	-0.0427	1.0000			
SHARE_BOND	0.0815	-0.4419	1.0000		
SHARE_EQ	0.1643	0.3708	-0.6891	1.0000	
DEV_EQMARKET	0.0581	0.0208	0.0502	0.1111	1.0000

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics and Thomson Reuters Datastream.

Table 6 reports results for two models. The first model has the number of pension funds broken down into categories as the only explanatory variable (as well as country and time fixed effects).<sup>14</sup> The second model adds the additional explanatory variables discussed above to the first model.

**Table 6. Outcomes of the econometric models to assess the effect of the number of funds on investment returns**

	Model 1	Model 2
NBFUND_CAT_1	1.330 (1.99)	-1.490 (1.82)
NBFUND_CAT_3	-12.021*** (3.56)	-11.294*** (3.29)
NBFUND_CAT_4	-12.963** (5.24)	-9.435** (4.76)
RGROWTH_GDP	-	0.152 (0.13)
INV_GDP	-	0.172*** (0.06)
SHARE_BOND	-	-0.202** (0.09)
DEV_EQMARKET	-	0.121*** (0.02)
Constant	14.574*** (2.29)	13.727** (5.65)

Notes: This table shows the results of estimating two models with country and time fixed effects. These models assess the effect of the number of funds (with four categories) on performance, with and without controlling variables. NBFUND\_CAT\_1 refers to the first category (less than 30 funds), NBFUND\_CAT\_3 to the third category (between 150 and 1,999 funds) and NBFUND\_CAT\_4 to the last category (more than 2,000 funds). The reference category of the variable about the number of funds is the second category (between 30 and 149 funds). Values in brackets represent the standard error of the estimate. \* Indicate statistical significance at the 10% level. \*\* Indicate statistical significance at the 5% level. \*\*\* Indicate statistical significance at the 1% level.

Source: OECD.

<sup>14</sup> An F-test reveals the presence of time fixed effects with a 90% confidence level (p-value < 0.1). Adding country fixed effects allows controlling for unobserved missing variables in the model that vary across countries but do not vary over time. The inclusion of time fixed effects in the model controls for special events that can affect the outcome variable.

The second category (i.e. number of pension funds between 30 and 149) is taken as a reference in the two models presented in Table 6. Therefore, the results enable examination of how pension funds in countries with less than 30 pension funds or more than 150 pension funds performed over time relative to countries with 30 to 149 pension funds .

Results show that sample countries with 30 to 149 pension funds experienced higher real net returns than countries with more pension funds over the period 2005-2015 (Table 6). Real net returns in countries with 150 to 1 999 funds and countries with 2 000 or more funds would be lower than those in countries with 30 to 149 funds over the period 2005-2015 with a 95% (and sometimes even a 99%) confidence level. Outcomes of the models do not suggest any significant difference (with a 95% confidence level) between the real net returns of pension funds in countries with 30 to 149 funds and countries with less than 30 funds. Real net returns were also positively linked with the size of the pension markets and the developments in stock markets, and negatively linked with the allocation in bills and bonds.







**Table A.4. Pension funds' nominal net rate of investment returns in selected OECD and non-OECD countries (%), 2005-2015**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Selected OECD countries</b>											
Australia (1)	12.8	13.3	15.3	-7.5	-8.9	8.9	9.0	1.9	12.9	12.2	8.0
Austria	10.5	5.3	1.8	-13.3	8.4	6.1	-3.0	8.4	4.9	7.3	2.2
Belgium	13.5	12.2	11.0	-20.2	13.7	7.7	-1.3	11.7	6.8	10.3	4.2
Canada	13.0	12.6	3.4	-15.9	11.8	10.1	4.2	8.8	11.1	9.4	6.8
Chile	8.8	17.3	12.6	-18.7	20.3	11.5	-1.8	6.6	6.7	13.1	5.9
Czech Republic	5.0	3.1	3.3	2.1	0.4	3.0	3.0	2.6	1.6	1.3	1.0
Denmark	17.3	3.2	-1.0	7.6	2.7	10.2	15.0	7.5	-3.8	17.1	1.3
Estonia (2)	11.0	7.4	3.7	-27.7	12.9	8.0	-4.6	8.9	2.3	4.1	1.2
Finland (3)	..	..	..	..	..	..	..	7.7	7.7	6.7	5.0
Germany	4.9	4.6	4.2	1.6	4.8	4.9	3.0	4.8	4.3	4.6	3.3
Greece	..	..	..	4.4	2.9	-3.1	-3.3	5.9	5.8	3.8	4.5
Hungary (4)	11.2	7.8	3.2	-19.0	19.1	9.0	..	13.2	7.4	8.6	4.6
Iceland	16.6	16.7	6.3	-9.3	8.4	3.7	7.5	11.4	9.1	8.0	9.6
Ireland	..	..	-3.0	-35.0	..	..	..	..	..	..	4.6
Israel (5)	9.7	5.6	7.0	-13.1	24.8	9.8	-2.2	9.6	10.4	5.6	2.6
Italy (6)	6.9	4.0	2.9	-3.2	6.4	3.1	0.4	6.4	4.5	5.7	1.8
Korea	3.2	8.2	4.2	1.3	0.5	5.2	4.2	4.8	3.8	3.2	2.6
Latvia	8.7	4.8	3.9	-11.0	10.9	8.0	-2.8	8.7	2.8	5.1	2.0
Luxembourg	..	7.3	0.8	-10.4	8.4	3.5	0.9	8.5	3.3	7.7	1.7
Mexico (7)	8.3	9.8	3.6	-1.8	11.4	11.2	5.0	13.6	2.5	8.9	1.3
Netherlands	13.2	7.8	2.4	-15.7	12.8	11.0	6.8	12.7	3.3	15.9	1.3
New Zealand (8)	7.2	12.4	7.7	-2.3	-6.8	12.8	7.7	3.2	10.5	8.9	..
Norway	11.2	9.8	6.0	-8.7	12.0	8.4	0.0	7.5	10.1	7.2	4.3
Poland (9)	13.9	14.9	5.4	-14.7	13.0	10.5	-4.9	4.0	3.4	..	-6.7
Portugal	9.8	9.8	8.3	-12.5	11.5	-0.5	-3.9	7.8	5.1	6.6	2.5
Slovak Republic	..	..	3.3	-5.0	1.5	1.3	0.5	3.7	1.5	3.7	0.3
Slovenia	..	..	4.6	-3.4	6.1	3.7	0.2	7.3	3.2	6.9	1.9
Spain	..	..	..	-8.6	7.7	0.7	0.1	6.6	8.2	6.8	2.0
Sweden	..	..	..	..	..	..	1.3	7.8	6.8	..	..
Switzerland	10.3	6.0	2.2	-13.2	10.2	3.3	-0.1	7.1	6.0	6.9	0.8
Turkey (7)	31.5	11.2	22.7	11.1	25.3	8.4	-1.0	16.4	-0.8	14.2	2.3
United Kingdom	22.1	13.6	3.0	-13.3	16.7	15.3	12.9	11.8	7.5	5.7	3.2
United States	5.1	8.4	2.8	-25.2	12.2	7.4	-1.0	7.0	12.9	4.4	-0.4
<b>Selected non-OECD countries</b>											
Albania	..	..	..	7.0	8.4	9.5	4.6	5.7	5.6	5.0	5.3
Armenia	..	..	..	..	..	..	..	..	..	2.8	6.2
Bolivia	8.6	7.9	8.5	9.7	10.0	8.1	..	..	..	..	..
Brazil	..	..	..	..	..	..	..	..	3.3	7.0	5.3
Bulgaria	8.5	8.3	15.1	-23.9	8.5	5.0	-0.3	7.3	4.6	5.8	1.5
Colombia	19.8	9.1	9.8	5.0	26.8	25.4	-0.1	17.9	-0.3	10.4	2.9
Costa Rica (7)	18.8	20.8	10.0	2.4	9.1	7.0	9.1	10.5	11.8	7.5	11.4
Croatia	..	..	..	..	..	..	..	..	..	9.4	10.6
Dominican Republic	17.1	11.5	8.5	12.1	14.0	10.8	12.5	14.3	13.2	7.9	10.2
Egypt	..	..	..	..	..	..	..	..	..	9.0	10.3
El Salvador	5.8	6.1	6.3	3.1	5.4	4.6	2.8	5.2	2.3	3.9	2.3
FYR of Macedonia	..	..	..	-10.6	14.2	7.0	1.8	7.9	7.9	6.6	5.5
Ghana	..	..	..	..	..	..	..	..	..	21.0	24.0
Gibraltar	..	..	..	..	..	..	..	2.1	2.5	0.9	..
Guyana	..	..	..	..	..	..	..	..	..	..	1.4
Hong Kong, China (10)	..	..	..	..	26.6	7.8	-11.3	12.4	7.4	1.5	-3.6
India	..	..	..	..	..	..	3.7	11.2	2.8	17.7	6.4
Indonesia	..	..	..	..	..	..	5.4	..	..	..	9.8
Kenya	..	..	..	..	6.4	17.5	-9.9	..	17.6	13.1	..
Kosovo	..	..	..	..	..	..	..	..	8.1	6.4	2.0
Liechtenstein	..	..	..	-7.8	9.8	3.3	-2.0	-2.0	6.8	4.7	6.2
Lithuania	..	..	..	..	..	..	-3.5	10.2	3.9	7.3	4.5
Malawi	..	..	..	..	..	..	..	..	36.0	24.2	15.2
Maldives	..	..	..	..	..	..	..	..	14.4	..	..
Malta	..	..	..	..	..	..	-0.2	0.6	0.8	0.4	-1.3
Mauritius	..	..	..	..	..	..	..	..	0.1	..	..
Namibia	..	..	..	..	..	..	13.1	14.8	16.2	9.8	..
Nigeria	..	..	..	..	..	10.8	3.4	11.9	12.8	8.0	9.1
Pakistan	..	..	..	-9.3	10.9	11.5	8.5	18.5	21.4	20.2	12.8
Panama	..	..	..	..	..	..	6.7	6.0	5.8	3.7	4.5
Peru	12.3	26.9	21.2	-25.2	27.1	19.8	-10.0	12.0	0.5	7.1	4.2
Romania	..	..	..	19.5	16.4	15.1	2.9	10.4	10.6	8.7	4.1
Russia	..	..	..	..	..	..	..	..	6.2	3.1	10.6
Serbia	..	..	5.8	-6.3	13.9	7.4	5.6	11.6	11.0	10.7	15.2
South Africa (11)	4.8	21.9	16.5	3.8	3.6	12.4	9.0	11.1	15.6	14.7	..
Thailand	..	..	..	..	6.4	2.1	2.8	7.9	1.9	5.8	0.9
Trinidad and Tobago	..	..	8.2	..	7.2	..	7.9	10.8	..	..	..
Ukraine	..	..	..	..	..	17.2	10.4	..	..	..	..
Uruguay	9.7	16.5	9.0	-14.3	37.7	25.2	17.4	20.3	11.9	12.7	10.7
Zambia	..	..	..	..	..	..	..	..	..	14.0	14.7

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

**Table A.5. Pension funds' real net rate of investment returns in selected OECD and non-OECD countries (%), 2005-2015**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Selected OECD countries</b>											
Australia (1)	10.1	8.9	12.9	-11.4	-10.2	5.6	5.3	0.6	10.3	8.9	6.4
Austria	9.0	3.8	-1.8	-14.4	7.3	3.7	-6.0	5.5	2.9	6.2	1.2
Belgium	10.3	10.3	7.7	-22.3	13.4	4.4	-4.6	9.2	5.8	10.7	2.6
Canada	10.7	10.8	1.0	-16.9	10.3	7.6	1.8	7.9	9.8	7.8	5.1
Chile	5.0	14.4	4.4	-24.1	22.0	8.3	-6.0	5.1	3.5	8.1	1.5
Czech Republic	2.7	1.3	-2.0	-1.5	-0.6	0.7	0.5	0.2	0.2	1.2	0.9
Denmark	14.7	1.4	-3.3	5.1	1.2	7.1	12.2	5.3	-4.5	16.6	0.8
Estonia (2)	7.2	2.2	-5.4	-32.4	14.8	2.1	-8.0	5.2	0.9	4.7	2.1
Finland (3)	..	..	..	..	..	..	..	5.2	6.0	6.2	5.3
Germany	3.4	3.2	1.0	0.5	3.9	3.6	1.0	2.7	2.8	4.4	3.0
Greece	..	..	..	2.3	0.3	-7.8	-5.6	5.0	7.7	6.5	4.6
Hungary (4)	7.6	1.2	-3.9	-21.7	12.8	4.2	..	7.8	7.0	9.6	3.7
Iceland	12.0	9.0	0.5	-23.2	0.8	1.2	2.1	6.9	4.8	7.1	7.4
Ireland	..	..	-7.4	-35.7	..	..	..	..	..	..	4.5
Israel (5)	7.2	5.7	3.5	-16.3	20.2	6.9	-4.3	7.9	8.3	5.8	3.6
Italy (6)	4.8	2.1	0.3	-5.3	5.3	1.2	-2.8	4.0	3.9	5.7	1.7
Korea	0.6	6.0	0.6	-2.7	-2.2	2.1	0.0	3.3	2.6	2.3	1.3
Latvia	1.7	-1.9	-8.9	-19.5	12.2	5.3	-6.5	7.0	3.2	4.9	1.6
Luxembourg	..	4.9	-2.5	-11.4	6.5	0.7	-2.3	6.0	1.7	8.3	0.6
Mexico (7)	4.8	5.6	-0.1	-7.8	7.5	6.6	1.2	9.7	-1.5	4.7	-0.8
Netherlands	10.9	6.8	0.6	-17.3	11.5	8.9	4.3	9.5	1.6	15.1	0.6
New Zealand (8)	4.3	8.8	5.0	-5.5	-9.5	10.5	3.1	1.6	9.5	7.2	..
Norway	9.2	7.4	3.1	-10.6	9.8	5.5	-0.1	6.1	7.9	5.1	1.9
Poland (9)	12.9	13.4	1.5	-17.3	8.9	7.2	-9.1	1.6	2.7	..	-6.1
Portugal	7.1	7.1	5.5	-13.2	11.6	-3.0	-7.3	5.8	4.9	6.9	2.1
Slovak Republic	..	..	-0.1	-8.9	1.0	0.0	-3.8	0.4	1.1	3.9	0.8
Slovenia	..	..	-1.0	-5.4	4.2	1.8	-1.8	4.5	2.5	6.7	2.4
Spain	..	..	..	-9.9	6.9	-2.2	-2.3	3.7	7.9	8.0	2.0
Sweden	..	..	..	..	..	..	-1.0	7.9	6.7	..	..
Switzerland	9.2	5.3	0.2	-13.8	9.9	2.8	0.6	7.5	5.9	7.2	2.2
Turkey (7)	22.1	1.4	13.2	0.9	17.6	1.9	-10.4	9.6	-7.6	5.6	-5.9
United Kingdom	19.8	10.3	0.9	-15.9	13.4	11.2	8.3	9.0	5.4	5.2	3.0
United States	1.6	5.7	-1.2	-25.3	9.3	5.8	-3.9	5.2	11.2	3.6	-1.1
<b>Selected non-OECD countries</b>											
Albania	..	..	..	4.7	4.5	5.9	2.8	3.2	3.7	4.3	3.3
Armenia	..	..	..	..	..	..	..	..	..	-1.7	6.4
Bolivia	3.5	2.8	-2.9	-1.9	9.7	0.8	..	..	..	..	..
Brazil	..	..	..	..	..	..	..	..	-2.5	0.6	-4.9
Bulgaria	1.9	1.7	2.4	-29.4	7.9	0.5	-3.0	2.9	6.3	6.8	1.9
Colombia	14.2	4.4	3.9	-2.5	24.3	21.5	-3.7	15.1	-2.2	6.5	-3.7
Costa Rica (7)	4.1	10.3	-0.7	-10.1	4.9	1.1	4.1	5.7	7.8	2.3	12.3
Croatia	..	..	..	..	..	..	..	..	..	9.9	11.3
Dominican Republic	9.0	6.2	-0.4	7.2	7.8	4.3	4.4	10.0	9.0	6.3	7.7
Egypt	..	..	..	..	..	..	..	..	..	0.7	-1.0
El Salvador	1.5	1.2	1.4	-2.2	5.6	2.4	-2.1	4.4	1.5	3.4	1.3
FYR of Macedonia	..	..	..	-15.0	16.1	3.9	-1.0	3.0	6.5	7.2	5.8
Ghana	..	..	..	..	..	..	..	..	..	3.4	5.4
Gibraltar	..	..	..	..	..	..	..	-0.6	0.4	-0.9	..
Guyana	..	..	..	..	..	..	..	..	..	..	3.3
Hong Kong, China (10)	..	..	..	..	24.6	4.8	-16.1	8.4	3.0	-3.3	-5.8
India	..	..	..	..	..	..	-2.6	0.0	-6.8	12.8	0.7
Indonesia	..	..	..	..	..	..	1.5	..	..	..	6.2
Kenya	..	..	..	..	1.0	12.4	-24.2	..	9.8	6.6	..
Kosovo	..	..	..	..	..	..	..	..	7.6	6.8	2.2
Liechtenstein	..	..	..	-7.8	9.8	3.3	-2.0	-2.0	6.8	4.7	6.2
Lithuania	..	..	..	..	..	..	-6.6	7.2	3.5	7.5	4.6
Malawi	..	..	..	..	..	..	..	..	13.3	0.1	-7.8
Maldives	..	..	..	..	..	..	..	..	10.8	..	..
Malta	..	..	..	..	..	..	-2.3	-2.1	-0.2	0.3	-2.4
Mauritius	..	..	..	..	..	..	..	..	-3.8	..	..
Namibia	..	..	..	..	..	..	5.3	7.9	10.8	4.9	..
Nigeria	..	..	..	..	..	-0.8	-6.3	0.0	4.5	0.0	-0.5
Pakistan	..	..	..	-26.4	0.3	-3.2	-1.2	9.8	11.2	15.3	9.3
Panama	..	..	..	..	..	..	0.3	1.3	2.0	2.7	4.2
Peru	10.7	25.5	16.6	-29.8	26.8	17.3	-14.1	9.1	-2.3	3.7	-0.3
Romania	..	..	..	12.4	11.1	6.6	-0.3	5.2	8.9	7.8	5.0
Russia	..	..	..	..	..	..	..	..	-0.3	-7.4	-2.0
Serbia	..	..	-4.9	-13.7	6.8	-2.6	-1.3	-0.5	8.6	8.8	13.5
South Africa (11)	1.2	15.2	6.9	-5.7	-2.6	8.6	2.8	5.1	9.7	9.0	..
Thailand	..	..	..	..	2.8	-0.9	-0.7	4.2	0.2	5.2	1.7
Trinidad and Tobago	..	..	0.6	..	5.8	..	2.5	3.4	..	..	..
Ukraine	..	..	..	..	..	7.4	5.6	..	..	..	..
Uruguay	4.6	9.5	0.5	-21.4	29.8	17.0	8.1	11.9	3.1	4.1	1.2
Zambia	..	..	..	..	..	..	..	..	..	5.7	-5.3

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.





**Table A.7. Number of pension funds in selected OECD and non-OECD countries, 2005-2015**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Selected OECD countries</b>											
Australia	306,553	324,789	363,687	389,813	406,781	417,272	446,983	479,443	506,696	528,990	559,547
Austria	20	21	20	19	19	17	17	17	16	14	13
Belgium	..	258	258	251	232	172	224	217	201	..	196
Canada (1)	4,426	5,036	6,114	7,192	7,531	7,870	8,373	8,875	8,876	8,876	8,876
Chile (2)	30	30	30	25	25	30	30	30	30	30	30
Czech Republic (3)	..	..	..	..	..	..	..	..	68	60	55
Denmark	50	47	39	40	39	33	32	29	25	21	20
Estonia (4)	15	15	15	19	22	23	23	23	23	20	20
Germany	178	175	178	180	182	183	179	177	178	172	171
Greece (5)	..	..	3	3	3	8	6	6	11	11	..
Hungary	90	88	87	86	82	78	70	63	57	51	48
Iceland	46	41	38	37	37	33	33	32	27	27	26
Ireland (6)	84,146	93,307	99,927	91,775	84,151	76,196	66,763	61,125	62,013	62,087	67,840
Israel	30	32	32	34	33	32	33	33	32	32	29
Italy	454	433	418	396	371	353	343	332	310	299	283
Korea	138	..	..	..	..	..	..	..	..	..	..
Latvia (7)	13	15	16	19	19	21	21	19	19	18	15
Luxembourg (8)	16	18	17	18	19	19	19	18	18	19	17
Mexico (9)	32	42	42	95	80	75	70	52	48	44	55
Netherlands (10)	802	769	714	531	484	455	393	385	379	365	320
Norway	119	122	109	108	105	100	95	85	84	85	87
Poland	..	20	20	19	..	19	19	28	28	26	25
Portugal	223	227	224	230	236	237	229	228	224	224	217
Slovak Republic (11)	24	39	33	33	33	34	32	39	37	35	37
Slovenia (12)	7	7	7	7	7	7	7	7	7	10	9
Spain	1,255	1,340	1,353	1,374	1,420	1,504	1,570	1,681	1,761	1,777	1,688
Switzerland	2,770	2,667	2,543	2,435	2,351	2,265	2,191	2,073	1,957	1,866	..
Turkey (13)	91	96	102	120	128	133	153	173	206	215	223
United Kingdom (14)	91,674	84,389	78,932	63,523	62,304	55,591	52,250	47,680	46,620	45,330	43,690
United States (15)	679,095	694,550	707,787	717,532	706,667	701,012	683,647	676,622	681,154	685,203	..
<b>Selected non-OECD countries</b>											
Albania	..	..	3	3	3	3	3	3	3	3	3
Armenia (16)	..	..	..	..	..	..	..	..	..	6	6
Botswana	..	..	..	..	..	..	..	..	5	..	..
Brazil	..	..	..	371	369	368	..	..	321	317	..
Bulgaria	24	24	27	31	31	28	28	28	28	28	28
Colombia (17)	..	6	6	6	6	6	6	5	4	4	4
Costa Rica	..	..	..	..	..	..	..	..	..	..	14
Croatia	..	..	..	..	..	..	..	..	..	12	12
Dominican Republic	..	..	..	..	..	..	..	..	..	7	..
Egypt	..	..	..	593	..	..	..	..	..	..	..
FYR of Macedonia	..	..	2	2	4	4	4	4	4	4	4
Ghana	..	..	..	..	..	..	..	..	..	..	42
Gibraltar	..	..	..	..	..	..	2	2	2	2	..
Guyana (18)	..	..	..	..	..	..	..	..	..	..	96
Hong Kong, China (19)	46	40	38	38	38	41	41	41	41	38	38
Indonesia	312	297	288	..	..	..	271	..	..	..	255
Jamaica	..	530	..	..	..	720	..	..	..	..	..
Kenya	..	..	..	1,330	..	..	..	..	..	..	..
Lesotho	..	..	..	..	..	..	102	102	..	..	..
Liechtenstein	41	40	36	34	33	33	29	29	24	24	23
Lithuania	..	..	..	..	..	38	39	39	38	38	33
Malawi	..	..	..	..	..	..	..	..	..	..	2,020
Malaysia (20)	..	..	..	..	..	..	..	..	..	..	50
Maldives (21)	..	..	..	..	..	..	1	1	1	..	1
Namibia (22)	..	..	..	..	..	..	..	..	..	..	245
Nigeria (23)	..	..	31	33	33	31	31	27	27	28	28
Pakistan	..	..	6	7	7	9	11	11	13	..	..
Peru	15	12	12	12	12	12	12	12	12	12	12
Romania	..	..	..	23	25	22	20	20	18	18	17
Russia	..	..	..	..	..	..	..	..	..	..	103
Serbia	..	..	7	..	10	8	9	8	6	6	4
South Africa	13,390	..	..	..	..	..	..	..	..	..	..
Suriname	30	30	..	..	..	..	..	..	..	..	..
Thailand	..	..	513	511	503	469	453	441	426	418	412
Ukraine	..	..	..	110	..	101	96	..	..	..	..
Zambia	..	..	..	..	..	..	..	..	..	238	239

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.





**Table A.10. Share of pension fund portfolio in cash and deposits in selected OECD and non-OECD countries, 2005-2015**

As a percentage of total investment

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Selected OECD countries</b>											
Australia (1)	9.8	10.0	12.2	12.7	15.8	14.3	15.4	3.8	4.0	3.9	4.3
Austria	3.5	4.2	10.5	15.1	9.5	8.3	11.7	9.2	12.8	8.3	9.0
Belgium	9.7	10.9	4.7	8.5	6.2	6.5	5.2	4.9	3.9	3.9	4.4
Canada	4.6	3.3	3.8	3.8	3.9	3.3	3.4	3.5	3.5	3.8	4.1
Chile (2)	0.4	0.3	0.4	0.9	0.6	0.3	0.3	0.5	0.3	0.3	0.6
Czech Republic	8.3	6.6	10.0	8.3	10.5	7.0	8.1	9.9	10.6	8.4	9.2
Denmark	0.8	0.5	0.4	0.7	0.5	0.5	0.4	0.5	0.5	0.3	0.3
Estonia	6.0	6.0	12.7	14.1	15.3	9.4	16.4	16.4	17.4	17.0	20.2
Finland	..	..	..	..	..	..	7.1	5.5	4.0	3.6	3.7
Germany	3.8	3.8	3.8	4.7	2.9	2.5	3.6	3.0	3.7	3.5	3.8
Greece	..	..	51.9	27.5	28.8	40.9	40.4	53.0	35.6	17.4	..
Hungary	1.5	2.9	1.4	3.9	3.4	2.4	5.5	4.9	8.0	7.5	6.6
Iceland	3.0	1.3	3.4	10.7	9.1	8.2	7.6	7.4	6.6	5.1	5.6
Israel	1.4	4.6	4.1	3.7	6.9	7.2	4.8	5.6	5.0	5.3	6.3
Italy (3)	4.7	6.7	7.4	7.5	5.7	5.1	4.4	4.2	3.6	3.2	4.1
Japan (4)	5.1	5.7	6.9	7.2	6.2	5.4	6.4	6.2	6.4	6.4	7.2
Korea	..	..	..	..	..	..	59.0	61.4	56.5	53.8	52.6
Latvia	..	..	..	..	..	..	..	..	..	13.6	17.1
Luxembourg	..	..	..	..	..	9.4	4.8	4.7	5.0	3.6	1.7
Mexico	0.0	0.0	0.0	0.0	1.0	0.5	0.3	0.6	0.9	0.8	1.0
Netherlands	2.3	4.3	3.9	4.0	2.2	2.4	2.0	3.0	2.7	2.7	2.8
Norway	4.9	4.6	3.2	4.4	3.9	2.5	2.7	2.7	2.3	2.7	2.4
Poland (5)	4.1	2.9	3.4	2.5	2.3	3.5	5.7	8.3	6.0	7.2	6.9
Portugal	12.5	6.1	6.6	13.4	5.8	10.8	9.6	13.6	12.0	16.8	11.0
Slovak Republic	..	43.1	35.0	25.0	29.4	27.5	28.8	24.6	23.1	19.2	17.4
Slovenia	14.1	17.7	17.6	24.0	21.5	26.8	31.6	26.5	17.2	32.3	23.1
Spain	5.0	6.0	6.1	24.2	17.5	19.3	16.0	16.2	15.0	14.8	16.7
Sweden (6)	1.4	2.0	2.0	3.6	2.6	3.4	3.2	3.2	3.6	4.5	2.2
Switzerland	11.5	11.0	12.0	8.7	8.1	7.0	7.4	7.7	8.1	7.3	5.3
Turkey (7)	0.0	0.0	5.3	6.3	5.4	13.0	..	8.9	16.5	18.3	19.6
United Kingdom	2.6	3.0	3.7	3.3	4.3	3.7	3.4	3.3	3.5	3.1	2.4
United States	1.3	0.9	1.0	1.1	1.0	1.0	1.1	0.9	0.9	0.9	1.0
<b>Selected non-OECD countries</b>											
Albania	..	..	..	..	..	..	2.9	2.4	1.9	6.3	7.4
Armenia	..	..	..	..	..	..	..	..	..	52.3	22.8
Botswana	..	..	..	..	..	..	..	..	13.2	..	..
Brazil	..	0.1	0.2	0.0	0.0	0.0	0.1	..	0.1	0.1	7.9
Bulgaria	19.3	25.6	19.4	25.3	31.6	27.5	24.9	21.1	21.3	12.1	12.1
Colombia	..	..	1.8	1.3	2.0	3.2	1.8	2.3	2.8	3.1	3.9
Costa Rica	..	..	0.0	11.5	3.2	4.3	0.0	0.0	0.0	0.0	3.8
Croatia	..	..	..	..	..	..	..	..	..	4.4	2.8
Dominican Republic	..	..	..	..	..	..	..	..	..	0.0	..
Egypt	..	..	..	26.8	..	..	..	..	..	..	..
FYR of Macedonia	..	..	18.5	42.4	35.9	31.9	19.1	14.1	12.6	11.3	7.4
Ghana	..	..	..	..	..	..	..	..	..	0.0	0.0
Gibraltar	..	..	..	..	..	..	5.3	29.0	6.2	7.3	..
Guyana	..	..	..	..	..	..	..	..	..	..	28.7
Hong Kong, China (8)	..	..	12.4	14.7	14.3	11.0	13.3	13.3	12.9	13.1	12.6
India	..	..	..	..	..	..	5.7	3.1	..	..	..
Indonesia	..	..	..	..	..	..	25.5	..	..	..	32.7
Jamaica	..	..	0.3	2.4	2.2	0.9	0.8	1.4	2.0	1.6	1.6
Kenya	..	..	..	6.9	7.8	4.2	5.3	7.3	6.2	5.5	..
Kosovo	..	..	..	..	..	..	..	..	..	1.1	4.6
Liechtenstein	..	..	4.2	6.4	9.2	8.6	7.0	7.0	7.6	6.3	4.7
Lithuania	..	..	..	..	..	4.7	6.5	3.9	3.2	6.4	9.3
Malawi	..	..	..	..	..	..	..	..	..	11.7	13.6
Malaysia	..	..	..	..	..	..	..	..	..	..	2.8
Maldives	..	..	..	..	..	..	20.9	14.2	9.9	..	0.4
Malta	..	..	..	..	..	..	..	..	23.2	19.3	19.0
Mauritius	..	..	..	..	..	..	..	..	..	..	13.9
Namibia	..	..	..	..	..	6.8	7.4	12.0	5.4	6.7	..
Nigeria	..	..	22.9	32.1	34.1	24.7	12.9	15.7	11.7	11.7	10.7
Pakistan	..	..	40.8	47.1	27.0	17.6	10.6	14.1	19.2	8.7	..
Papua New Guinea	..	..	..	..	..	..	..	..	11.2	..	..
Peru	6.7	5.0	2.5	8.4	3.3	6.9	5.0	4.1	13.1	6.9	11.7
Romania	..	..	..	13.2	7.8	7.3	12.0	4.9	8.6	4.0	4.8
Russia	..	..	..	..	..	..	..	..	25.1	22.2	20.1
Serbia	..	..	..	..	19.9	21.5	18.2	20.2	11.7	8.8	12.8
South Africa (9)	5.8	5.4	7.1	8.4	7.0	7.3	6.5	5.8	4.4	4.2	..
Suriname	15.0	18.0	..	..	..	..	..	..	..	..	..
Thailand	..	..	9.7	13.0	10.6	10.6	12.6	21.3	27.8	30.3	25.3
Trinidad and Tobago	..	8.8	11.2	..	8.6	..	6.2	6.6	..	..	..
Ukraine	..	..	..	56.3	..	34.7	32.2	..	..	..	..
Zambia	..	..	..	..	..	..	..	..	..	11.7	8.7

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

**Table A.11. Share of pension fund portfolio in the “other” category in selected OECD and non-OECD countries, 2005-2015**

As a percentage of total investment

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Selected OECD countries</b>											
Australia (1)	32.2	30.6	28.2	28.4	28.4	27.8	26.7	40.9	38.4	37.1	36.1
Austria	6.3	8.9	10.0	14.8	11.1	11.2	10.4	8.9	4.7	11.3	14.4
Belgium	28.8	18.7	14.7	16.4	18.4	13.0	14.1	11.9	15.1	8.8	9.9
Canada	22.4	24.8	25.6	26.9	27.0	27.3	26.9	28.1	30.1	30.4	32.8
Chile (2)	6.3	4.8	4.4	3.8	10.4	2.8	1.5	1.3	0.9	0.7	0.5
Czech Republic	4.1	4.5	5.0	7.1	4.7	4.4	4.9	4.4	2.6	2.3	2.0
Denmark	13.5	8.2	7.4	29.1	11.1	14.0	20.1	18.6	17.8	23.7	18.7
Estonia	2.0	1.1	0.6	1.3	0.8	4.1	0.8	0.3	0.1	0.1	0.3
Finland	..	..	..	..	..	..	29.4	28.8	26.7	26.6	25.6
Germany	38.5	33.8	41.4	42.6	43.2	46.5	44.6	42.0	40.4	38.5	37.8
Greece	..	..	5.4	4.2	3.5	2.4	1.9	1.8	5.9	5.8	..
Hungary	6.9	6.3	2.5	0.7	3.6	4.7	0.0	3.5	2.6	2.3	3.3
Iceland	17.1	16.6	18.1	22.4	19.2	18.4	18.6	17.3	15.1	14.1	11.8
Israel	5.2	4.9	7.2	7.8	7.5	9.0	9.8	10.1	15.0	16.2	15.7
Italy (3)	38.9	36.8	37.4	36.5	34.4	33.5	32.8	30.8	29.3	28.4	26.7
Japan (4)	41.9	43.7	45.3	41.3	42.8	43.6	43.4	45.3	46.0	49.0	49.1
Korea	..	..	..	..	..	..	35.6	36.9	34.6	36.8	38.3
Latvia	..	..	..	..	..	..	..	..	..	2.0	2.2
Luxembourg	..	..	..	..	..	9.7	12.4	8.7	4.8	7.5	5.3
Mexico	1.6	1.8	4.4	5.8	0.0	0.9	0.6	0.4	0.3	0.1	0.1
Netherlands	10.7	9.0	20.8	20.6	22.6	20.2	19.0	19.4	16.9	15.9	12.5
Norway	10.9	9.2	9.1	7.6	6.4	6.5	6.0	6.1	4.9	4.6	5.7
Poland (5)	0.4	0.6	0.5	0.7	0.9	0.9	1.2	1.1	0.9	1.4	0.5
Portugal	10.2	11.7	12.0	17.0	16.1	18.2	27.1	25.0	23.7	20.1	18.8
Slovak Republic	..	4.0	5.7	4.3	1.5	0.3	0.2	0.9	0.8	0.9	2.4
Slovenia	0.1	7.6	1.1	4.2	5.6	4.0	5.6	3.7	3.5	0.1	0.1
Spain	10.0	0.7	9.7	10.9	10.6	11.0	12.0	12.2	11.3	10.5	9.4
Sweden (6)	6.5	4.2	8.3	10.5	6.5	6.8	9.5	4.6	5.8	8.7	12.8
Switzerland	26.7	26.9	28.5	28.9	27.5	28.8	29.3	29.3	29.1	29.1	32.0
Turkey (7)	7.8	18.3	18.0	15.6	15.0	16.4	..	17.1	0.5	4.9	7.9
United Kingdom	27.0	28.8	32.2	35.4	33.2	37.0	42.5	41.9	42.7	43.2	43.0
United States	12.7	17.7	18.2	20.0	20.1	19.2	19.8	19.0	17.7	17.6	17.9
<b>Selected non-OECD countries</b>											
Albania	..	..	..	..	..	..	0.3	0.5	1.4	1.7	2.0
Armenia	..	..	..	..	..	..	..	..	..	1.1	0.3
Botswana	..	..	..	..	..	..	..	..	1.4	..	..
Brazil	..	10.6	11.4	14.5	13.5	14.6	16.5	..	18.8	19.4	13.1
Bulgaria	3.4	3.1	6.4	5.7	5.1	5.8	6.4	4.4	4.0	4.3	4.5
Colombia	..	..	10.1	8.8	2.6	3.4	13.8	10.3	13.0	20.8	23.9
Costa Rica	..	..	13.4	2.2	2.7	0.0	0.0	0.0	0.0	0.0	1.3
Croatia	..	..	..	..	..	..	..	..	..	0.4	0.4
Dominican Republic	..	..	..	..	..	..	..	..	..	21.8	..
Egypt	..	..	..	3.0	..	..	..	..	..	..	..
FYR of Macedonia	..	..	0.0	0.5	0.4	0.0	0.1	1.0	0.2	1.1	1.8
Ghana	..	..	..	..	..	..	..	..	..	2.7	12.9
Gibraltar	..	..	..	..	..	..	14.7	15.7	22.1	10.5	..
Guyana	..	..	..	..	..	..	..	..	..	..	27.5
Hong Kong, China (8)	..	..	7.7	10.9	7.7	7.3	6.0	4.5	4.0	4.1	4.4
India	..	..	..	..	..	..	57.3	55.0	..	..	..
Indonesia	..	..	..	..	..	..	7.4	..	..	..	9.4
Jamaica	..	..	23.9	12.5	28.8	11.4	14.1	12.4	12.3	11.5	11.2
Kenya	..	..	..	24.8	44.1	48.4	35.9	28.8	29.7	35.3	..
Kosovo	..	..	..	..	..	..	..	..	..	0.0	0.0
Liechtenstein	..	..	34.2	37.8	34.8	23.2	22.9	22.9	22.4	21.4	20.0
Lithuania	..	..	..	..	..	2.8	1.6	2.0	2.1	1.5	1.6
Malawi	..	..	..	..	..	..	..	..	..	14.8	22.4
Malaysia	..	..	..	..	..	..	..	..	..	..	22.4
Maldives	..	..	..	..	..	..	0.0	0.0	0.0	..	0.0
Malta	..	..	..	..	..	..	..	..	31.6	40.5	47.8
Mauritius	..	..	..	..	..	..	..	..	..	..	3.6
Namibia	..	..	..	..	..	5.9	8.4	9.4	2.6	3.6	..
Nigeria	..	..	12.5	13.9	11.0	9.2	9.0	7.4	5.9	5.4	4.8
Pakistan	..	..	4.7	3.2	2.0	2.0	1.9	0.8	3.9	3.0	..
Papua New Guinea	..	..	..	..	..	..	..	..	16.5	..	..
Peru	0.3	1.1	1.0	2.8	3.6	3.5	4.1	4.2	4.8	4.6	5.5
Romania	..	..	..	0.0	0.0	0.0	0.1	0.3	0.1	0.0	0.0
Russia	..	..	..	..	..	..	..	..	4.2	5.1	4.3
Serbia	..	..	..	..	1.1	1.2	0.7	6.1	0.4	0.4	0.3
South Africa (9)	62.1	59.9	58.0	65.0	61.2	58.6	60.5	61.7	61.1	60.0	..
Suriname	40.0	32.0	..	..	..	..	..	..	..	..	..
Thailand	..	..	0.6	0.1	0.3	0.8	0.6	0.6	0.7	0.9	0.6
Trinidad and Tobago	..	19.4	23.3	..	15.7	..	16.4	13.2	..	..	..
Ukraine	..	..	..	7.4	..	16.6	9.4	..	..	..	..
Zambia	..	..	..	..	..	..	..	..	..	24.0	43.6

Note: Please see the section on methodological notes at the end of the report.

Source: OECD Global Pension Statistics.

## Methodological notes

The primary source material for this report is provided by national pension authorities as part of the OECD Global Pension Statistics' framework (GPS). Within this project, the data are sourced from official national administrative sources and revised on an on-going basis so as to better reflect the most recent figures for every past year. Given possible divergences in national reporting standards and different methods for compiling certain data for the Global Pension Statistics exercise, caution should be exercised when interpreting some statistics. For this reason, countries are regularly requested to provide methodological information relevant for developing a thorough understanding of their submission under the GPS framework. The general and specific methodological notes below provide some explanations in this respect.

### General notes

- Conventional signs: "n.d.", "..": not available; "n.a.": not applicable.
- The GPS exercise covers all pension plans (occupational and personal, mandatory and voluntary) irrespective of the pension provider and manager, as long as these plans are funded. Plans can cover public and private sector workers. The definitions of pension plans by the OECD's Working Party on Private Pensions are available in the publication *Private Pensions: OECD Classification and Glossary*, available at [www.oecd.org/daf/pensions](http://www.oecd.org/daf/pensions).
- This report uses three main additional reference series: exchange rates to convert values in US dollars, GDP and the variation of the consumer price index (CPI). Exchange rates used are end-of-period exchange rates for all variables valued at the end of the year, and period-average for variables representing a flow during the year. They come from the IMF International Financial Statistics database. GDP values for OECD countries are extracted from the OECD Annual National Accounts. Consumer price indices for OECD countries are from the OECD Main Economic Indicators database. Reference series for non-OECD countries are from the IMF International Financial Statistics database or the IMF *World Economic Outlook* published in April 2016, except the GDP and CPI variation of Gibraltar (which are from *Abstract of Statistics 2014* by the Statistics Office of Gibraltar), the CPI variation of Guyana in 2015 (from the Bank of Guyana) and the GDP of Liechtenstein (from the National Accounts Main Aggregates Database of the United Nations).
- Data for Australia and Egypt refer to the end of June of each year.
- Data for Austria refer to Pensionskassen in the case of pension funds, and occupational pension plans provided by insurance companies (BVK) in the case of pension insurance contracts.
- Data about pension funds in Estonia refer to the mandatory funded pension system only. All voluntary pension plans are classified under pension insurance contracts, and include voluntary pension insurance and voluntary pension funds.
- The amount of pension fund investment in 2015 for France comes from the French Asset Management Association.
- Data for Germany only refer to Pensionsfonds and Pensionskassen supervised by BaFin. Data for 2015 are preliminary.
- Pension fund investments for Ireland come from the IAPF Pension Investment Survey.
- The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of International law. Data for Israel refer to old, new and general pension funds.
- Data for Japan are from the Bank of Japan. Data in Figures 2, 3, 6, 7 and in Tables A.1, A.2 and A.3 refer to total assets of pension funds.
- Data for pension funds in Latvia only refer to voluntary pension plans in open and closed pension funds.
- Data for the Netherlands are preliminary.
- Pension fund investments in the case of New Zealand represent an aggregate of assets in KiwiSaver plans (at the end of March of each year) and in employer superannuation schemes (at the end of March of each year for most of them). Data for 2015 are from the Bank Reserve of New Zealand.
- Data for pension funds in Slovenia only refer to the Slovenian mutual pension funds. All the companies that administer pension schemes under the supervision of the Slovenian Insurance Supervision Agency are classified under pension insurance contracts.
- Data for Switzerland refer to the first trend calculations for the year 2015.

- The figure of pension fund investment in the United Kingdom at the end of 2015 is an early estimate based on the 2014 level of assets and the flow of transactions in 2015. It does not take into account value changes. A 2015 final estimate will be available in January 2017.
- Data for Armenia only refer to mandatory pension funds.
- Data from Argentina, Bolivia, the Dominican Republic (up to 2013), El Salvador, Panama and Uruguay are from the International Association of Pension Funds Supervision (AIOS).
- Data for China are from the Ministry of Human Resources and Social Security (MOHRSS) and refer to enterprise annuity schemes for employees.
- Data before 2014 for Croatia are from the Croatian Financial Services Supervisory Agency (HANFA) Website.
- Data for Guyana refer to occupational pension plans.
- Data for Hong Kong, China refer to Mandatory Provident Fund (MPF) schemes and occupational retirement schemes registered under the Occupational Retirement Schemes Ordinance (ORSO registered schemes), unless specified otherwise in specific notes.
- Data for India only refer to the National Pension System (NPS) Schemes covering government employees and private sector employees.
- Data for Indonesia only refer to the voluntary funded pension system.
- Data for Malaysia only refer to the Private Retirement Scheme.
- Data for Malta in 2015 include both occupational and personal retirement schemes. Figures attributed to previous years do not include occupational schemes as these schemes have been authorised to operate since 1<sup>st</sup> January 2015.
- Data for Mauritius only refer to voluntary pension plans.
- Data for Pakistan only refer to voluntary pension funds, authorised under the Voluntary Pension System Rules.
- Data for Thailand only refer to Thai provident funds and do not include the Government Pension Fund.
- Data for Zambia only include private occupational pension schemes.

#### *Specific notes*

##### **Figure 1:**

The sample of non-OECD countries includes the following jurisdictions: Albania, Armenia, Botswana, Brazil, Bulgaria, China (People's Republic of), Colombia, Costa Rica, Croatia, Dominican Republic, Egypt, El Salvador, Former Yugoslav Republic of Macedonia, Ghana, Gibraltar, Guyana, Hong Kong (China), India, Indonesia, Jamaica, Kenya, Kosovo, Lesotho, Liechtenstein, Lithuania, Malawi, Malaysia, Maldives, Malta, Mauritius, Namibia, Nigeria, Pakistan, Panama, Papua New Guinea, Peru, Romania, Russia, Serbia, South Africa, Thailand, Trinidad and Tobago, Ukraine, Uruguay and Zambia.

##### **Figure 2:**

The maps show the size of private pension investment in 2015 in USD terms and as a percentage of GDP by country. The larger the circle, the larger the amount of private pension investment. Countries are labelled with their ISO code. ISO codes are available on the United Nation Statistics Division internet page, 'Countries and areas, codes and abbreviations' at the following address: <http://unstats.un.org/unsd/methods/m49/m49alpha.htm>.

##### **Figure 3:**

(1) Data do not cover the whole private pension system. (2) Data refer to the weighted (by total investments) and simple average of the ratio of private pension investments to GDP in the respective area. (3) Data refer to old, new and general pension funds. (4) Data refer to 2014. (5) Data refer to 2013. (6) Data refer to 2012. (7) Data refer to 2011.

##### **Figure 4:**

This Figure only shows the breakdown of occupational and personal plans provided by pension funds. It does not take into account other plans provided by other entities such as insurance companies.

(1) Data refer to 2014. (2) Data refer to 2013. (3) Data about Collective Voluntary Pension Savings that are managed by the AFPs are classified together with personal plans, although these plans are occupational. (4) There is one institution for occupational retirement provision operating in Hungary. Its market share is negligible compared to voluntary privately managed pension funds and voluntary private pension funds. The last two types of funds manage personal pension plans.



**Figure 5:**

This Figure only shows the breakdown of DB and DC plans provided by pension funds. It does not take into account other plans provided by other entities such as insurance companies.

(1) Data refer to 2013. (2) Data refer to 2014. (3) Data refer to occupational pension plans only. (4) Source: Financial Services and Markets Authority. (5) Data refer to pension funds under the supervision of Luxembourg Financial Supervisory Authority (CSSF) only. (6) Data only refer to private occupational pension schemes, and do not include individual pension plans or public occupational pension schemes. (7) Data only refer to the voluntary funded pension system, and do not include funds managing mandatory plans.

**Figure 8:**

Data have been calculated using a common formula for the average nominal net investment return (ratio between the net investment income at the end of the year and the average level of assets during the year) for all the economies, except for Finland (Dec 2014-Dec 2015); Ireland; Israel; Korea; Sweden; Turkey (Dec 2013-Dec 2014) and the United States in the OECD area; Brazil; Egypt; Ghana (Dec 2013-Dec 2014); Guyana; Hong Kong, China; India (Dec 2013-Dec 2014) and Zambia (Dec 2013-Dec 2014) outside the OECD area, for which values have been provided by the economies or from national official publications. Data for El Salvador, Panama and Uruguay are from AIOS.

The average real net investment returns are calculated using the nominal rate of return (as described above) and the variation of the consumer price index over the relevant period. Returns for Liechtenstein are nominal.

Simple and weighted averages are calculated on the sample of countries for which values are available for Dec 2013-Dec 2014 (i.e. 2014) and Dec 2014-Dec 2015 (i.e. 2015). Pension fund investments of the given year in USD million are taken as weights.

(1) Returns for year N are calculated over the period end of June of year N-1 and end of June of year N. (2) Data refer to new pension funds only. (3) Data for Estonia result from OECD calculations and may differ from Estonian authorities calculations using an index called EPI. This index is based on the net asset values of all pension funds, after deduction of all costs paid by the funds. Values of this index are available at: <http://www.pensionikeskus.ee/en/statistics/ii-pillar/epi-charts/>. (4) Investment returns are net of taxes. (5) Data refer to personal pension plans only. (6) Data refer to MPF schemes only.

**Table 1:**

(1) The 5-year average and the 10-year average returns have been calculated over the period June 2010 - June 2015 and June 2005 - June 2015 respectively. (2) Data refer to personal pension plans only. (3) Data refer to new pension funds only. (4) Investment returns are net of taxes. (5) Data for Estonia result from OECD calculations and may differ from the Estonian authorities calculations using an index called EPI. This index is based on the net asset values of all pension funds, after deduction of all costs paid by the funds. Values of this index are available at: <http://www.pensionikeskus.ee/en/statistics/ii-pillar/epi-charts/>. (6) Data refer to MPF schemes only.

**Figure 9:**

The GPS database provides information about investments in Collective Investment Schemes and the look-through Collective Investment Schemes in cash and deposits, bills and bonds, equities and other. When the look-through was not provided by the countries, estimates were made assuming that mutual funds' investment allocation in cash and deposits, bills and bonds, equities and other was the same as pension funds' direct investments in these categories. Therefore, asset allocation data in this Figure include both direct investment in cash and deposits, bills and bonds, equities and indirect investment through Collective Investment Schemes.

(1) The "Other" category includes loans, land and buildings, unallocated insurance contracts, hedge funds, private equity funds, structured products, other mutual funds (i.e. not invested in cash, bills and bonds, or equities) and other investments. (2) Source: Australian Bureau of Statistics (ABS). The high value for the "Other" category is driven mainly by net equity of pension funds in life office reserves (13% of total investment). (3) Market of fair values of derivatives held are negative in 2015 and are excluded from the asset allocation. (4) The high value for the "Other" category is driven mainly by land and buildings (12% of total investment). (5) The high value for the "Other" category is driven mainly by land and buildings (direct and indirect investments in this category account for 18% of total investment). (6) The high value for the "Other" category is driven mainly by other investments of collective investment schemes (18% of total investment). (7) The asset class "Other investments", which was reported as negative in the survey, is excluded from the calculations of the asset allocation. The value for the "Other" category in this Figure is driven mainly by land and buildings (direct and indirect investments in this category account for 14% of total investment). (8) The high value for the "Other" category is driven mainly by unallocated insurance contracts (22% of total investment) and by real estate (3% of total investment). (9) Pension funds are not the only retirement vehicle in Sweden. The asset mix of other retirement vehicles may be different from the one of pension funds. (10) Data refer to personal pension plans only. (11) Claims of pension funds on pension managers have been excluded from the calculation of pension fund asset allocation. The high value for the "Other" category is driven

mainly by outward investments in securities (25% of the total portfolio). (12) Data refer to 2014. (13) The high value for the "Other" category is driven mainly by loans (12% of total investment) and other investments of collective investment schemes (17% of total investment). (14) The high value for the "Other" category is driven mainly by unallocated insurance contracts (36% of total investment). (15) Data include MPF schemes and MPF exempted ORSO registered schemes. (16) The high value for the "Other" category is driven mainly by other investments of collective investment schemes (10% of total investment). (17) The high value for the "Other" category is driven mainly by private equity (8% of total investment) and land and buildings (7% of total investment). (18) The high value for the "Other" category is driven mainly by land and buildings (11% of total investment). (19) The high value for the "Other" category is driven mainly by land and buildings (19% of total investment) and unallocated insurance contracts (14% of total investment). (20) The asset class "Other investments", which was reported as negative in the survey, is excluded from the calculations of the asset allocation. The high value for the "Other" category is driven mainly by other investments of collective investment schemes (16% of total investment). (21) Data refer to funds supervised under the Pension Funds Act only. The high value for the "Other" category is driven mainly by unallocated insurance contracts (49% of total investment). (22) The high value for the "Other" category is driven mainly by land and buildings (direct and indirect investments in this category account for 22% of total investment). (23) The high value for the "Other" category is driven mainly by unallocated insurance contracts (20% of total investment). (24) The high value for the "Other" category is driven mainly by unallocated insurance contracts (31% of total investment).

**Table 2:**

The detailed numbers of pension funds between 2005 and 2015 are given in the statistical annexes.

(1) Source: Department of Labor. Data refer to private pension plans only. (2) The latest data available related to the number of funds refers to 2014 instead of 2015. (3) Data refer to funds managing personal plans. (4) The number of funds in 2006 has been used to examine the evolution of the number of the funds. (5) Data refer to mandatory pension funds only. In 2015, 4 management companies manage 20 mandatory pension funds. (6) Source: Financial and Capital Market Commission. The 15 funds (in Latvia called 3rd pillar pension plans) in 2015 are administered by open and closed pension funds. (7) The number of funds in 2007 has been used to examine the evolution of the number of the funds. (8) Data refer to the number of mutual pension funds. (9) In 2005 and in 2015, there were 6 pension fund administrators managing 5 funds each. (10) Source: OECD Reviews of Pension Systems - Ireland and the Irish Pensions Authority's Annual Reports. Data refer to the number of DC schemes and DB schemes subject to the Funding Requirement. (11) Source: The Pensions Regulator. Data refer to the number of occupational schemes. (12) Data for 2015 come from the website of the Dutch Central Bank. (13) The latest data available related to the number of funds refers to 2013 instead of 2015. (14) The number of funds in 2008 has been used to examine the evolution of the number of the funds. (15) Data refer to the number of MPF schemes. (16) Data refer to the number of administrators of closed pension funds and administrators of open pension funds. (17) Data refer to the number of pension fund managers. Each fund manager manages several funds.

**Figure 10:**

(1) Data refer to the average size of pension funds managing personal plans only. (2) Data refer to 2006 instead of 2005. (3) Data refer to 2014 instead of 2015. (4) Data refer to 2007 instead of 2005. (5) Data refer to private pension plans only. (6) Data refer to MPF schemes only. (7) Data refer to 2013 instead of 2015. (8) Data refer to 2008 instead of 2005. (9) Data refer to 2010 instead of 2015. (10) Data refer to 2012 instead of 2015. (11) Data refer to 2011 instead of 2015.

**Table 5:**

"RGROWTH\_GDP" is the real growth rate of GDP; "INV\_GDP" is the size of pension fund investment compared to GDP; "SHARE\_BOND" is the share of pension fund portfolio allocated to bills and bonds; "SHARE\_EQ" is the share of pension fund portfolio allocated to equities; and "DEV\_EQMARKET" is the growth rate of local stock market indices.

**Tables A.1 – A.3:**

Slovenia adopted the euro in 2007, the Slovak Republic in 2009, Estonia in 2011, Latvia in 2014 and Lithuania in 2015. The whole time series of pension fund total investment (in millions of national currency) are expressed in millions of euro for these countries (even before their adoption of the euro).

(1) The break in series in 2011 is due to the exclusion of public buffer funds which were included before 2011. (2) There is a break in series in 2013, as four new occupational funds are included. These funds were converted in March 2013, from a public redistributing system (PAYG) into a private law capital-accumulating system. (3) The drop in pension fund investments in 2011 comes from a pension reform which suspended payments to the mandatory funded individual schemes and redirected all the contributions to pay-as-you-go public pension schemes, unless workers chose to keep these individual schemes by the end of January 2011. (4) The break in series in 2005 is due to the inclusion of the pension funds supervised by the CSSF, not included in the previous years. (5) Occupational pension plans that are registered by the National Commission for the Retirement Savings System (CONSAR) are included from 2005 onwards. (6) The drop in pension fund investments in 2014 comes from the reversal of the mandatory funded pension system that led to a transfer

of domestic sovereign bonds held by open pension funds into the social security system. (7) In 2011, the investments of the pension funds under the ISP supervision decreased by about 33%, reflecting the transfer of bank pension funds (i.e. pension funds sponsored by banks, which have as beneficiaries the employees of their banks) to the Public Retirement System. (8) The break in series in 2006 is due to the inclusion of voluntary pension plans, not included in the previous years. (9) The main part of the Swedish funded pension market is secured via insurance contracts and what is labelled pension funds only constitutes a small part of the total market for Sweden. Investments through all vehicles including insurance contracts amounted to SEK 3,158,088 million at the end of 2015. (10) The drop in investment in 2011 is due to three factors: change in legislation, withdrawals and the unavailability of data from one of the three funds, which was operating under the old framework. (11) The drop in 2008 is due to a pension reform transferring pension funds' assets to the National Social Security Administration. (12) The break in series in 2015 is due to the inclusion of all occupational plans (DB and DC), not included in the previous years. (13) Data for one DB pension scheme in 2014 are missing, which hampers the comparability of 2014 data with data for the previous years. (14) The marked increase in the value of pension fund investments in 2012 is due to an increase in the number of schemes and a substantial increase in the number of members of the schemes. (15) Excluding Saudi Arabia. (16) This includes the list of countries that are members of the Euro Area at the end of 2015. (17) This includes: Israel, Japan and Korea among OECD countries, and China, Hong Kong (China), India, Indonesia, Malaysia, Maldives, Pakistan and Thailand among selected non-OECD countries.

#### **Tables A.4 – A.5:**

Data have been calculated using a common formula for the average nominal net investment return (ratio between the net investment income at the end of the year and the average level of assets during the year) for all the economies, except for Austria (2011-2012); Finland (2015); Ireland; Israel; Korea (2010-2015); Sweden (2011-2013); Turkey (2011,2013-2014); the United States; Armenia (2014); Brazil; Egypt; Ghana (2014); Guyana; Hong Kong, China; India (2011,2013-2014); Kenya (2011); Malawi (2013); Malta (2011); Romania (2010); Russia (2013); Ukraine (2010) and Zambia (2014) for which values have been provided by the economies or are from national official publications. Data for Bolivia, Costa Rica (2005-2007), Dominican Republic (2005-2013), El Salvador, Panama and Uruguay are from AIOS.

The average real net investment returns are calculated using the nominal rate of return (as described above) and the variation of the consumer price index over the relevant period. Returns for Liechtenstein are nominal.

(1) Returns for year N are calculated over the period end of June of year N-1 and end of June of year N. (2) Data for Estonia result from OECD calculations and may differ from the ones of the Estonian authorities using an index called EPI. This index is based on the net asset values of all pension funds, after deduction of all costs paid by the funds. Values of this index are available at: <http://www.pensionikeskus.ee/en/statistics/ii-pillar/epi-charts/>. (3) There is a break in series in 2011 which is due to the exclusion of public buffer funds which were included before. (4) The break in series in 2011 corresponds to the pension reform leading to a decrease in the assets of mandatory pension funds in 2011. (5) Data refer to new pension funds only. (6) Investment returns are net of taxes. (7) Data refer to personal pension plans only. (8) Returns for year N are calculated over the period end of March of year N-1 and end of March of year N. (9) There is a break in series in 2014 due to the reversal of the mandatory funded pension system that led to a transfer of domestic sovereign bonds held by open pension funds into the social security system. (10) Data refer to MPF schemes only. (11) Data refer to funds supervised under the Pension Funds Act only.

#### **Table A.7:**

(1) Data are biannual and come from the Census of Trusteed Pension Funds that is conducted every two years. The number of funds in odd years is an OECD estimate and is calculated as the average of the numbers of funds in the previous even year and the following one. Data for 2015 refer to 2014. (2) There were 6 pension fund administrators (AFPs) between 2002 and 2007, 5 in 2008 and 2009, and 6 between 2010 and 2015. Each AFP manages 5 pension funds each. (3) Source: Ministry of Finance of the Czech Republic. Data refer to the sum of retirement funds, transformed funds and participating funds. These funds were managed by 10 pension management companies in 2013, 9 in 2014 and 8 in 2015. (4) In 2015, 4 management companies were managing the 20 mandatory pension funds. (5) In 2011, there were 9 occupational funds which have the license to operate: six were fully operational under DC system, two were licensed but not yet operational and the last one only provided medical care. From 2013 onwards, four new occupational funds that were converted from a public redistributing system into a private law capital-accumulating system are included. (6) Source: *OECD Reviews of Pension Systems - Ireland* and the Irish Pensions Authority's Annual Reports. Data refer to the number of DC schemes and DB schemes subject to the Funding Requirement. (7) Source: Financial and Capital Market Commission. Data refer to the number of funds (in Latvia called 3rd pillar pension plans). These are administered by open and closed pension funds. There were 6 open and closed pension funds from 2005 to 2009, 7 from 2010 to 2013, and 6 in 2014 and 2015. (8) The break in series in 2005 is due to the inclusion of pension funds supervised by the CSSF, not included in the previous years. (9) Data refer to funds managing personal plans only. (10) Data for 2014 and 2015 come from the website of the Dutch Central Bank. (11) The break in series in 2006 is due to the inclusion of voluntary pension plans, not included in the previous years. (12) Data refer to the number of mutual pension funds. (13) Data refer to pension mutual funds only. Pension companies,

which offer personal private pension products, invest through these pension mutual funds. Source: the Undersecretariat of Turkish Treasury's *Individual Pension System Progress Reports*. (14) Source: The Pensions Regulator. Data refer to the number of occupational schemes. (15) Source: Department of Labor. Data refer to private pension plans that are required to file a Form 5500 only. (16) Data refer to the number of mandatory pension funds. (17) Data refer to the number of pension fund managers. Each fund manager manages several funds. (18) Data refer to the total number of private pension schemes. These schemes are managed by various pension fund managers. There are seven pension fund managers in Guyana. (19) Data refer to the number of MPF schemes. (20) Data refer to retirement funds under the Private Retirement Scheme (PRS) industry. (21) Data refer to the Maldives Retirement Pension Scheme (which has two portfolios). (22) Source: NAMFISA. Data refer to the sum of registered active and inactive pension funds (with no contributing members). (23) Data refer to the number of administrators of closed pension funds and administrators of open pension funds.

#### **Tables A.8 – A.11:**

The GPS database provides information about investments in Collective Investment Schemes and the look-through Collective Investment Schemes in cash and deposits, bills and bonds, equities and other. When the look-through was not provided by the countries, estimates were made assuming that mutual funds' investment allocation in cash and deposits, bills and bonds, equities and other was the same as pension funds' direct investments in these categories. Therefore, asset allocation data in these Tables include both direct investment in cash and deposits, bills and bonds, equities and indirect investment through Collective Investment Schemes.

When "other investments" were negative, they were excluded from the calculations of the asset allocation.

(1) Source: Australian Bureau of Statistics. (2) The breakdown of investments by collective investment schemes into cash and deposits, bills and bonds, equities and others for all the years before 2008 is supposed to be the same as in 2008 (OECD estimations). (3) The breakdown of investments by collective investment schemes into cash and deposits, bills and bonds, equities and others for all the years before 2011 is supposed to be the same as in 2011 (OECD estimations). (4) Claims of pension funds on pension managers have been excluded from the calculation of pension fund asset allocation. The "other" category includes outward investments in securities. (5) The break in series in 2014 comes from the reversal of the mandatory funded pension system that led to a transfer of domestic sovereign bonds held by open pension funds into the social security system. Since 2014, open pension funds have to invest at least 75% of their portfolios in equity, and cannot invest in treasury bonds and state-backed bonds any longer. (6) Pension funds are not the only retirement vehicle in Sweden. The asset mix of other retirement vehicles may be different from the one of pension funds. (7) Data refer to personal pension plans only. (8) Data include MPF schemes and MPF exempted ORSO registered schemes. (9) Data refer to funds supervised under the Pension Funds Act only. The high value for the "Other" category is driven mainly by unallocated insurance contracts.

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