PENSION SAVINGS
The Real Return
2017 Edition

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The European Federation of Investors and Financial Services Users
Fédération Européenne des Épargnants et Usagers des Services Financiers

Pension Savings: The Real Return

2017 Edition

A Research Report by BETTER FINANCE

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Table of Contents

Acronyms

AMC	Annual Management Charges
AuM	Assets under Management
BE	Belgium
BG	Bulgaria
Bln	Billion
BPETR	'Barclay's Pan-European High Yield Total Return' Index
CAC 40	'Cotation Assistée en Continu 40' Index
CMU	Capital Markets Union
DAX 30	'Deutsche Aktieindex 30' Index
DC	Defined Contribution plan
DE	Germany
DG	Directorate General of the Commission of the European Union
DK	Denmark
DWP	United Kingdom's Governmental Agency Department for Work and Pensions
EBA	European Banking Authority
EE	Estonia
EEE	Exempt-Exempt-Exempt Regime
EET	Exempt-Exempt-Tax Regime
EIOPA	European Insurance and Occupational Pensions Authority
ES	Spain
ESA(s)	European Supervisory Authority(es)
ESMA	European Securities and Markets Authority
EU	European Union
EURIBOR	Euro InterBank Offered Rate
EX	Executive Summary
FR	France
FSMA	Financial Services and Market Authority (Belgium)
FSUG	Financial Services Users Group - European Commission's Expert Group
FTSE 100	The Financial Times Stock Exchange 100 Index
FW	Foreword
GDP	Gross Domestic Product

HICP	Harmonised Indices of Consumer Prices
IBEX 35	Índice Bursátil Español 35 Index
IKZE	'Indywidualne konto zabezpieczenia emerytalnego' – Polish specific Individual pension savings account
IRA	United States specific Individual Retirement Account
IT	Italy
JPM	J&P Morgan Indices
KIID	Key Investor Information Document
LV	Latvia
Mln	Million
MSCI	Morgan Stanley Capital International Indices
NL	Netherlands
OECD	The Organisation for Economic Co-Operation and Development
OFT	United Kingdom's Office for Fair Trading
PAYG	Pay-As-You-Go Principle
PIP	Italian specific 'Individual Investment Plan'
PL	Poland
PRIIP(s)	Packaged Retail and Insurance-Based Investment Products
RO	Romania
S&P	Standard & Poor Indexes
SE	Sweden
SK	Slovakia
SME	Small and Medium-sized Enterprise
SPIVA Scorecard	Standard & Poor Dow Jones' Indices Research Report on Active Management performances
TEE	Tax-Exempt-Exempt Regime
UCITS	Undertakings for the Collective Investment of Transferable Securities
UK	United Kingdom

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Pension Savings: The Real Return

2017 Edition

Foreword

One can supervise only what one can measure:
Why is this long term savings performance report (unfortunately) unique?

One of the worst European retail services market

Investment and private pension products are persistently among the worst performing retail services markets of all throughout the European Union according to the European Commission's consumer markets scorecards[1].

The Commission also points out that "*other reasons for not saving long-term are the often poor performance of financial intermediaries to deliver reasonable return and costs of intermediation*"[2].

Pension savings also appear to be one of the few retail services where neither the customers nor the public supervisors are properly informed about the real net performance of the services rendered to them.

These features of the pension savings markets may well be connected of course.

The actual performance of this market is unknown to clients and to public supervisors

Indeed, apart from the OECD (the Organisation for Economic Co-operation and Development) publications on the real return of certain "pension

[1] Consumer Markets Scoreboard 2016 – Making markets work for consumers, European Commission, 2016.
[2] European Commission - Staff Working Document on long-term financing of the EU economy (2013)

funds"[3], the contributors to this research report could not find any other more complete or more recent published comprehensive series of net real pension savings returns for EU countries. Even the recent report produced for the European Commission on "the position of savers in private pension products"[4] relies only on the above-mentioned OECD report as far as returns and performance are concerned.

Moreover, as analysed in the previous editions of BETTER FINANCE's research on the real return of pension savings, the extremely useful data reported by the OECD[5] are unfortunately quite incomplete:

- The most recent OECD publications on pension returns, "Pension Markets in Focus 2016" and "Pension Funds in Figures – May 2017", provide ten-year returns maximum, which is quite a short time frame for such long-term products.
- Only eight of the Fifteen EU countries covered by BETTER FINANCE are reported by OECD for its 10 year data; seven are missing: Bulgaria, France, Poland, Romania, Slovakia, Spain and Sweden.
- A part of occupational pension products, and most individual pension products are missing as well, as OECD performance data include only "pension funds" stricto sensu, and exclude all "*pension insurance contracts and funds managed as part of financial institutions (often banks or investment companies), such as the Individual Retirement Accounts (IRAs) in the United States*";
- It is questionable that the OECD was able to capture all expenses borne by pension savers - entry fees for example - because the OECD relies mostly on reporting by national authorities and, typically, this is not something covered by them;
- Finally, OECD figures are all before taxes, except for Italy.

[3] http://www.oecd.org/finance/private-pensions/oecdpensionsoutlook2012.htm, http://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2016.pdf and https://www.oecd.org/pensions/private-pensions/Pension-Funds-in-Figures-2017.pdf

[4] Study on the position of savers in private pension products – prepared for the DG Internal Market of the European Commission and the Financial Services User Group (published in August 2013)

[5] Namely the OECD "Pension Markets in Focus 2016" (1, 5 and 10 year data).

This means the European financial supervisors - the European Commission and the European financial supervisory authorities (Securities and Markets, Insurance and Pensions, and Banking) – do not know the actual performance of the services they are supposed to regulate and supervise.

The failure of European supervisors to report "consumer" performance data

However, the European Supervisory Authorities (ESAs) have a legal duty to collect, analyse and report data on "consumer trends" in their respective fields (article 9(1) of the European Regulations establishing the three ESAs).

To our knowledge, neither the Banking[6] nor the Insurance and Pensions[7] Authorities provide any reporting on the performance of retail savings products in their fields of competence (respectively bank savings products, and life insurance and pension saving products). The Securities and Markets authority included "retail investor" portfolio returns in past "Trends, Risks and Vulnerabilities" reports, but stopped doing it in 2016[8]. In addition, these data were actually capital markets performance data, not retail investments performance ones, based on the 5 year average monthly returns on a portfolio composed of[9]:

- 47% stocks (Stoxx600: large and mid cap European equities),
- 42% deposits (1 year Euribor),
- and 11% bonds (Barclays Euro Aggregate 7-10Y).

Unfortunately such a portfolio has little in common with average retail investor portfolios, which - according to ESMA (the European Securities and Markets Authority) itself in the following page of its Report - is composed of:

[6] EBA - http://www.eba.europa.eu/documents/10180/1360107/Consumer+Trends+Report+2016.pdf
[7] EIOPA – https://eiopa.europa.eu/Publications/Reports/EIOPA-BoS-15-233%20-%20EIOPA_Fourth_Consumer_Trends_Report.pdf
[8] ESMA – Trends, Risks, Vulnerabilities Report Nr. 1, March 2016 and Nr. 1, March 2015
[9] ESMA – Trends, Risks, Vulnerabilities Report Nr. 1, March 2014; this detailed breakdown of EU households' financial assets was not longer published afterwards by ESMA.

- 35% deposits (but for the vast majority certainly not returning the one year "interbank" rate -Euribor- and not even benchmarked against it),
- 32% insurance and pension funds,
- 17% stocks,
- 7% mutual funds
- and 5% bonds.

Performance: capital markets are not a proxy for retail investments

And indeed, our experience and findings clearly confirm that capital market performances have unfortunately very little to do with the performances of the actual savings products distributed to EU citizens. And this is particularly true for long-term and pension savings. The main reason for this is the fact that most EU citizens do not invest the majority of their savings directly into capital market products (such as equities and bonds), but into "packaged products" (such as investment funds, life insurance contracts and pension products).

One could then argue that insurance and pension products have similar returns to a mixed portfolio of equities and bonds, since those are indeed the main underlying investment components of insurance and pension "packaged" products. This is actually how ESMA came up with its "retail investor" portfolio return computation. But this was no more than a "leap of faith", ignoring such realities as fees and commissions charged on retail products, portfolio turnover rates, manager's risks, etc. Charges alone totally invalidate this approach.

The tables below show two striking – but unfortunately not uncommon – real examples of this largely ignored reality: capital market performance is not a valid proxy for retail investment performance and the main reasons for this are the fees and commissions charged directly or indirectly to retail customers. The European Commission itself publicly stressed this fact (see footnote 2 above).

Table FW 1. Real case of a Belgian occupational pension insurance	
Capital markets vs. Belgian Occupational pension insurance 2000-2016* performance	
Capital markets (benchmark index) performance**	
Nominal performance	100%
Real performance (before tax)	44%
Pension insurance performance (same benchmark)**	
Nominal performance	33%
Real performance (before tax)	-4%

** To 30/06/2016*

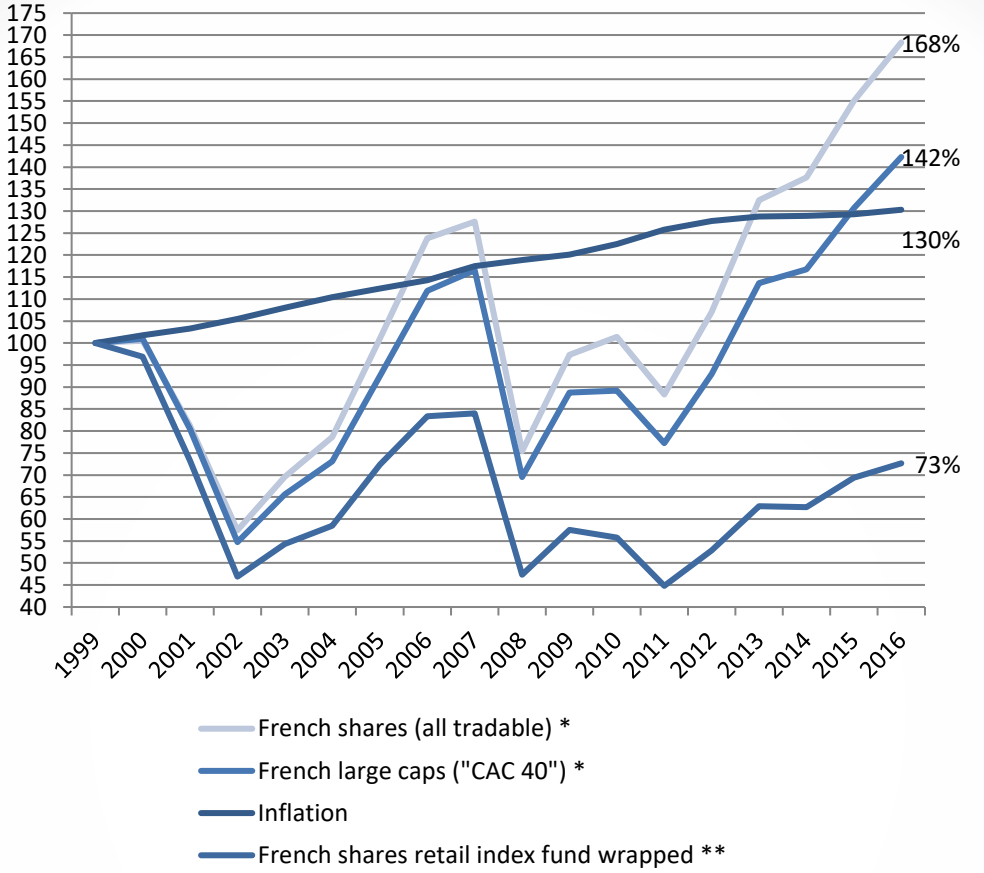
*** 50 % Equity / 50 % bonds (MSCI World equity index[10] and JPM Euro Govt Bond Index invested on 31/12/1999*

Sources: BETTER FINANCE, provider

In the real case above, the pension product's nominal return amounted to just a third of the return of its chosen capital market benchmark. Belgian occupational pension insurance funds ("Groupe Assurance Pension") unfortunately don't disclose overall annual fees (fees charged at the underlying "unit" of fund level plus those charged at the insurance contract level; see Belgian case study annex in this report).

[10] "*Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval. Copyright 2015, J.P. Morgan Chase & Co. All rights reserved.*" (J.P. Morgan)

Graph FW I. Real case of French retail equity fund



* *Dividends revinvested*
** *2000-2003 simulated*

Source: BETTER FINANCE research, fund manager

In the real case illustrated above, a so called retail CAC 40 "index" fund[11] actually under-performed the relevant equity index by 8,300 basis points after twelve years of existence (+34% instead of +117% for the benchmark from 2003 to 2016), with the performance gap fully attributable to fees. The fund has also massively destroyed the real value of its clients' savings,

[11] Wrapped in an insurance contract as suggested by the distributor.

as inflation has been almost twice as high as its nominal performance. It is quite surprising that with such a huge return gap vis-à-vis its benchmark, this fund is still allowed to portray itself as an "index-tracking" one, and that no warning is to be found on the Key Information Document (KIID) of the fund (although required by EU law).

Another issue for European savers revealed in this graph is the use by investment product providers of narrow (large cap only or "blue chip") equity indexes instead of broader ones, although they claim the former to represent "the equity markets" as a whole. This practice has proven detrimental both:

- to investors as this graph shows (the French large cap equity market underperformed the actual global French equity market by 26 percentage points over the last 17 years: +42% versus +68%);
- and to European SMEs since a lot of investment inflows are thus directed to large caps only, instead of broader instruments including mid and small caps.

ESMA's approach of mistaking capital market returns for retail investment ones, is unfortunately widespread in available public research. This is, for example, the case of the latest research report published by the European Commission on this topic (see footnote 4).

The European Union was completely right to legally require the Supervisory Authorities to collect, analyse and report on European savers "trends". We learn in business schools that one can manage and supervise only what one can measure. And one major legal responsibility assigned to the European supervisory authorities is to "*take a leading role in promoting transparency, simplicity and fairness in the market for consumer financial products or services across the internal market, including by… collecting, analysing and reporting on consumer trends…*"

2015: The European Commission to require an analysis of the actual net performance of long term and pension savings

On 30 September 2015, the European Commission released its Action Plan on building a Capital Markets Union ("CMU"). BETTER FINANCE was happy to see that the lack of transparency and of analysis of the real net performance of pension savings is addressed in this Action Plan: "*To further promote transparency in retail products, the Commission will ask the European Supervisory Authorities (ESAs) to work on the transparency of long-term retail and pension products and an analysis of the actual net performance and fees, as set out in Article 9 of the ESA Regulations*".

However, as of August 2017 – two years later - the ESAs had not received any mandate from the European Commission, and had not started any work on this Action. Any refrence to the CMU Action itself has disappeared from the June 2017 "CMU Mid-term report" and was merged into another broader one on "retail investment product markets", without mentioning any next steps for completion.

In addition, in the meantime, the European Commission has eliminated all disclosures on the past performance of investment funds and on their benchmarks in the Key Information Document (KID) in its "PRIIPs"[12] delegated act of 8 March 2017. This severe step back in transparency and in investor information is totally inconsistent ith the CMU initiative, and it will deprice EU savers from knowing if the investment products have made any money or not in the past and if they had met their manager's investment objectives or not. It will also prevent independent researchers such as BETTER FINANCE to continue to monitor individual products' returns (such as the one illustrated on Graph FW I) in the future.

A customer-based approach to pension savings returns

It is the ambition and challenge of this research initiated by BETTER FINANCE and its partners to collect, analyse and report on the actual past performance of long-term and pension savings products for the customer.

12 PRIIPs: packaged retail and insurance-based investment products.

Our first report in 2013 established the methodology that is also used for this much-expanded 2016 edition, covering 15 countries that represent 85% of the EU population.

The net real return of pension saving products should be:

- the long-term return (at least covering two full economic and stock market cycles, since even long-term returns are very sensitive to entry and exit dates. This time, we were able to collect up to 17 years of performance data in most countries covered);
- net of all fees, commissions and charges borne directly or indirectly by the customer;
- net of inflation (since for long-term products only the real return matters; that is the right approach taken by OECD as mentioned above);
- when possible, net of taxes borne by the customer (in the USA it has been mandatory for decades to disclose the past performance of mutual funds after tax in the summary of the prospectus).

Information on the returns of long term and pension savings is deteriorating

The following executive summary, general report and country reports show that this is not an impossible but a very challenging task for an independent expert centre such as BETTER FINANCE, since quite a lot of data are simply not available at an aggregate and country level, especially for earlier years. The complexity of the taxation of pension savings in EU countries makes it also extremely difficult to compute after tax returns.

In 2017, we find that Information on long term and pension savings returns is actually not improving but on the contrary deteriorating:

- less information ; for example the Belgian insurance trade organisation Assuralia does not report anymore the returns of insurance-regulated "*Branch 21*" occupational and personal pension products since 2014 (and never did for the « Branch 23 products), and the national supervisor FSMA does not do it either.

- later information : at the time of printing, still a lot of 2016 return data have not been released by the national trade organisations or other providers.
- Unchecked information: the principal source remains the national trade organisations, their methodology is most often not disclosed, return data do not seem to be checked or audited by any independent party, and sometimes they are only based on sample surveys covering just a portion of the products.
- As already mentioned, the European Commission has eliminated the disclosure of past performance of retail investment products and of their benchmarks in the Key Information Document starting 2018, and latest end of 2019 for UCITS funds.

There is still a long way to go before achieving "*transparency, simplicity and fairness in the market for consumer financial products*" as engraved in EU Law.

Pension Savings: The Real Return

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Executive Summary

As stated by the European Commission in a 2013 staff working document, "*the crisis has increased savers' distrust in financial institutions and markets*"[13]. Similarly, the latest EU Consumer Markets Scorecard[14] once again ranks pensions and investments as one of the worst consumer markets of all.

Coverage

The present report documents a principal component of, and reason for, this distrust, namely the frequently poor performance of private pension products, once inflation, charges and (when possible) taxes are deducted from nominal returns, and when compared to the relevant capital market benchmarks. It significantly broadens the geographical coverage of the initial research report by BETTER FINANCE entitled "Private Pensions: the Real Return", first published in June 2013. Belgium, Bulgaria, Estonia, Germany, Italy, Latvia, Poland, Romania, Slovakia, Sweden, The Netherlands and the United Kingdom have been added to the initial group composed of Spain, France and Denmark. It also extends the period of time covered in order to now measure performance over 17 years from 2000 to 2016 in as far as data was available. As such, the BETTER FINANCE research now covers 86% of the EU population.

The countries under review can be divided into three categories:

[13] Commission Staff Working Document "Long-Term Financing of the European Economy" accompanying the Green Paper on Long Investment, European Commission, 25 March 2013, page 10 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SWD:2013:0076:FIN:EN:PDF.

[14] Consumer Markets Scoreboard 2016 – Making markets work for consumers, European Commission, 2016

- countries like The Netherlands, Denmark and the United Kingdom at one end, where pension funds and life insurance assets represent far more than the annual GDP (Gross Domestic Product) and where the real returns of private pensions is of crucial importance;
- at the opposite end, countries like Italy and Spain, where pensions mainly depend on the quality and sustainability of pay-as-you-go (PAYG) schemes;
- and the other countries in an intermediate position, where the standard of life of retirees depends both on the sustainability of PAYG systems and the returns of private savings;
- Sweden is an original case where the pillar I mandatory pension is now, for a small part, funded instead of PAYG.

Why pension returns are critical for pension savings

Public Authorities involved in pension saving issues typically stress only two requisites for pension savings to achieve "pension adequacy" (i.e. pension income replacing a large part of the former activity income):

- the need to save as early as possible;
- the need to save a significant portion of one's activity income: "*to support a reasonable level of income in retirement, 10%- 15% of an average annual salary needs to be saved*"[15].

For example, according to the OECD, "*In light of the challenges facing pension systems, the only long-term solution for achieving higher retirement income is to contribute more and for longer periods*"[16].

We beg to disagree.

This is not enough. A third and even more crucial requisite is missing: the need to get a positive and decent long-term return (a real net return: after inflation and fees and commissions).

[15] World Economic Forum White Paper : We'll live to 100 – How can we afford it ?, May 2017
[16] OECD Pensions Outlook 2016 (Editorial, page 10, 2016)

A simple example will illustrate why saving "more and for longer periods" is not sufficient, and even too often detrimental.

Assuming no inflation, saving 10% of activity income for 30 years (as recommended by Public Authorities, 25 year life expectancy at retirement, and impact of fees, commissions tax excluded, the table below shows that **unless long term net returns are significantly positive (in the upper single digits), saving early and significantly will not provide a decent replacement income through retirement** ("pensions adequacy").

Table EX1

Annual net return	Replacement income
negative 1%	10%
zero	12%
2%	17%
8%	49%

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Positive Capital market returns (1999- 2016)

We have chosen a period covering the last 17 years because pension savings returns should be measured over a long-term horizon, and because it includes two market upturns (2003-2006 and 2009-2016) and two downturns (post dot com bubble of 2001-2003 and the 2008 financial crisis). It is on this period that we based our analysis in as far as data were available. The choice of the time reference does have a material impact on real returns: in order to keep our research objective, we paid special attention to our choice of period to cover[17].

We also measured the performance of the same investment repeated year after year over the last 17 years for one case (French corporate savings and pension plans; see French case section) to illustrate the impact of regular pension savings over 17 years versus a one shot investment 17 years ago. However the two are not fully comparable.

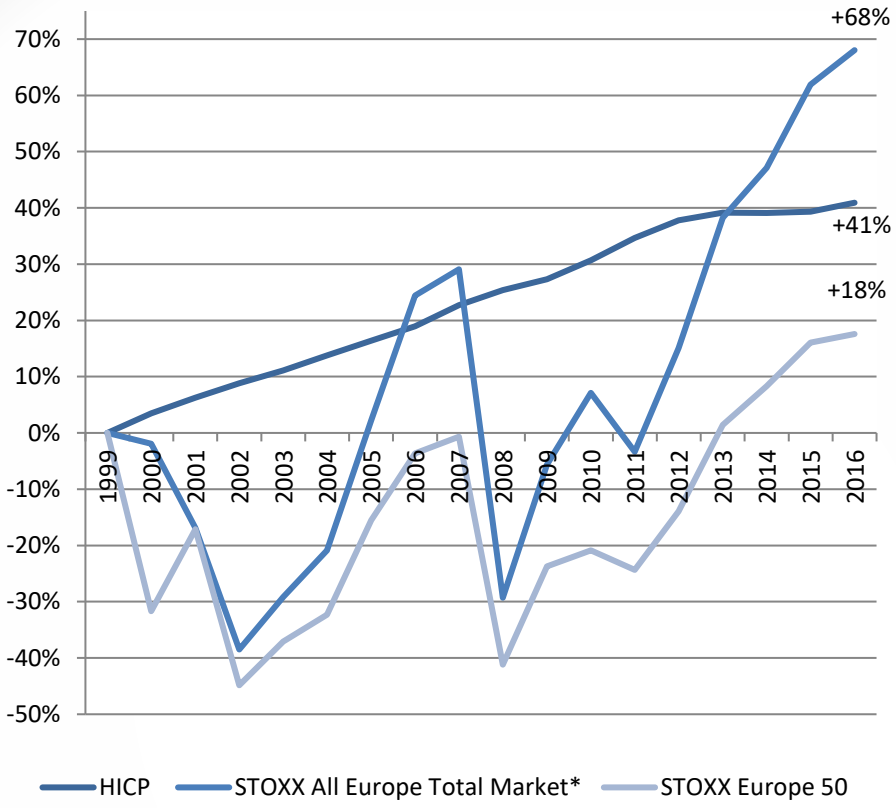
[17] Ideally, one should look at even longer term historical returns but the data are, for the most part, not available for the earlier years.

Since the beginning of the XXIst century (from 31 December 1999 to 31 December 2016), capital market returns have been positive (moderately for equities and very much for bonds):

- On a nominal basis (before taking inflation into account), world stock markets have grown in value (in euros) by 76%[18], the US stock market by 94%[19] and the European ones by 58%[20].
- On a real basis (net of inflation), European stock market returns also returned to positive cumulated returns by 2016 (+19%) as shown in the graph below, although some European countries such as Greece and Italy are still in negative territory. Several large cap markets also continue to struggle with negative returns, and at European level, the very narrow "Stoxx 50" index is still in negative territory after inflation (-17%) but includes only 50 European stocks.

[18] As measured by the MSCI All Country World (ACWI) GR index in euros.
[19] As measured by the MSCI USA GR index in euros.
[20] As measured by the MSCI Europe GR index in euros.

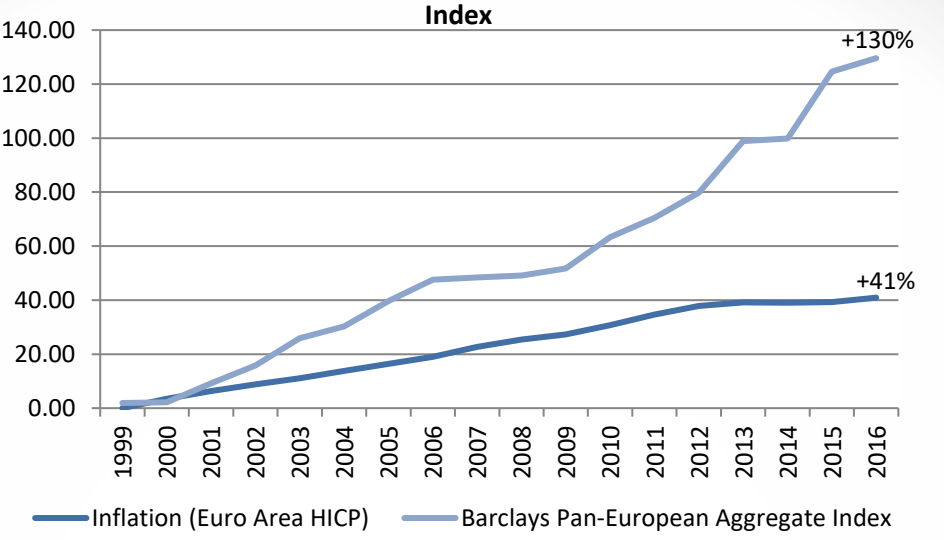
Graph EX 1. Cumulated performance of wide European equity index vs narrow index



** We used the MSCI Europe GR index as a proxy for the 2000 and 2001 performances because we could not find those years for the STOXX All Europe Total Market index (these two indices are broad ones)*

- Bond markets enjoyed an exceptional phase and have performed extremely well thanks to the continuous decline of interest rates over the last 15 years: +130 % on a nominal basis, and +63% in real terms (inflation deducted).

Graph EX 2. Cumulated Performance of European Bond Index



Sources: Barclays Pan-European Total Returns & Eurostat HICP Europe 28 Monthly

Overall, a direct balanced (50% in European equities / 50% in European bonds[21]) investment from a European saver in capital markets at the eve of the century[22] would have returned a hefty +117% in nominal terms (gross of fees and taxes) and +54% in real terms, which means an annual average real return of +2.6% (+4.7% annual nominal return).

Most pension products recently improved but underperformed

Our research findings show that most long term and pension savings products did not, on average, return anything close to those of capital markets, and in too many cases even destroyed real value for European pension savers (i.e. provided a negative return after inflation). The retuns are improving though in recent years, thanks to a long period of bullish capital markets since 2011, both for bonds and for equities. Of course, the

[21] Indices used are Stoxx All Europe Total Market (MSCI Europe for first 2 years) for equities and Barclays Pan European Aggregate for bonds.
[22] Rebalanced every year

capital markets returns mentioned above are not taking any fees and commissions into account. Indeed the attribution of performance shows that the level of fees and commissions has been the main factor explaining long term and pension savings' returns in Europe.

Pension returns drivers

Inflation has declined in recent years in a majority of countries, thus reducing the gap between nominal and real performance. The net real returns across countries are driven by:

- the asset allocation of pension products,
- the performance of capital markets into which pension products are invested,
- the asset managers' skills in terms of picking securities and market timing.
- net real returns of private pensions are however most affected and influenced by the fees and commissions charged by asset managers and other financial intermediaries,
- as well as, ultimately, by inflation and by the tax burden.

There are striking differences between the asset allocation of pension funds across countries and products. Mutual funds are the main component of investments in Belgium and in Germany. This is also the case for the United Kingdom, although to a lesser extent, where mutual funds tend to replace direct holdings of shares, whose weight fell from 57% to 20% between 2001 and 2014. Conversely, the preponderance of shares (especially from Danish companies) in Denmark to a large extent explains the good performance of pension products in this country. Equities also dominate in Sweden. Bonds dominate in France (life insurance and public employee funds), Italy, Poland (employee pension funds), Spain, Romania and Latvia, with investments chiefly consisting of government bonds. Overall, the period 2000-2016 shows a decline of allocations to equities and an increase of public debt in pension funds allocation, a trend that is today questionable for savers because it may diminish return prospects, as bond interest rates are now at an all-time low.

The decrease in government bond interest rates since 1999 had a positive impact on outstanding assets, especially in countries where this asset class dominates, but it reduces the capacity to offer a good remuneration on new investment flows.

As regards asset managers' skills, a majority of those underpferform their capital market benchmarks over the long term.

Fees and commissions substantially reduce performances of pension products, especially for personal "packaged" pension products, and for unit-linked life insurance in particular. Charges are often complex, opaque and far from being harmonised between different pension providers and products. Some countries have begun to impose overall caps on fees for some pension products (UK, Romania, Latvia).

Finally, taxes also reduce the performance of investments. The general model applied to pension products is deferred taxation, with contributions being deducted from the taxable income while pensions are taxed. The accumulated capital can be withdrawn at least partially at retirement as a lump sum, which is often not taxable. Our calculations of net returns are based on the most favourable case, i.e. assuming that the saver withdraws the maximum lump sum possible.

The following General Report analyses return contributions in more detail.

European Pension returns outlook

In 2017, the overall mid-term outlook for the adequacy of European pension savings is concerning when one analyses it for each of these main return drivers:

- It is unlikely that the European bond markets will come any close to the extraordinary returns of the last 17 years, due to the continuous fall of interest rates, as those are now at rock bottom levels.
- The negative impact of this foreseeable trend in bond returns on pensions' returns will be reinforced by the higher proportion of bonds in pension products' portfolios in the recent years.

- Fees and commissions do not show any significant downward trend, and transparency of cost disclosures is not improving.
- Inflation seems unlikely - as interest rates – to go much further down, and the consequences of the "non conventional" monetary policies of central banks on possible market "bubbles" are still unchartered.
- Taxes on long term and pension savings do not show any significant downward trend either.

Pension returns per country

The best performing national pension products over the last 17 years (end of 1999 to end of 2016) are the Dutch occupational pension funds with an overall real return of around + 50% (+2.84% yearly average), even outperforming a direct balanced investment in European capital markets (+47%). The average yearly real returns of pension funds after charges and tax have reached and around 4.13% in Poland over the period 2002-2016[23] and 4.82% in Denmark over the period 2002-2016[24]. Conversely, we found negative real in France (unit-linked life insurance contracts 2000-2016), in Italy (Open pension funds 2000-2016), in Latvia (State Funded Pension Funds, 2003-2016), in Slovakia (Pillar II Funded pension, 2005-2016), in Spain (pension funds 2000-2016) and in the Netherlands (Life Insurance, 2000-2015).

Unit-linked insurance products seem to struggle to perform everywhere, mainly due to the high (most often undisclosed) overall level of multi-layer fees.

These poor or even negative real returns have led public authorities in some Member States to take measures in order to ensure transparency and cap the fees charged by certain pension providers (in countries such as the UK, Romania and Latvia). The issue is crucial, especially in countries like the

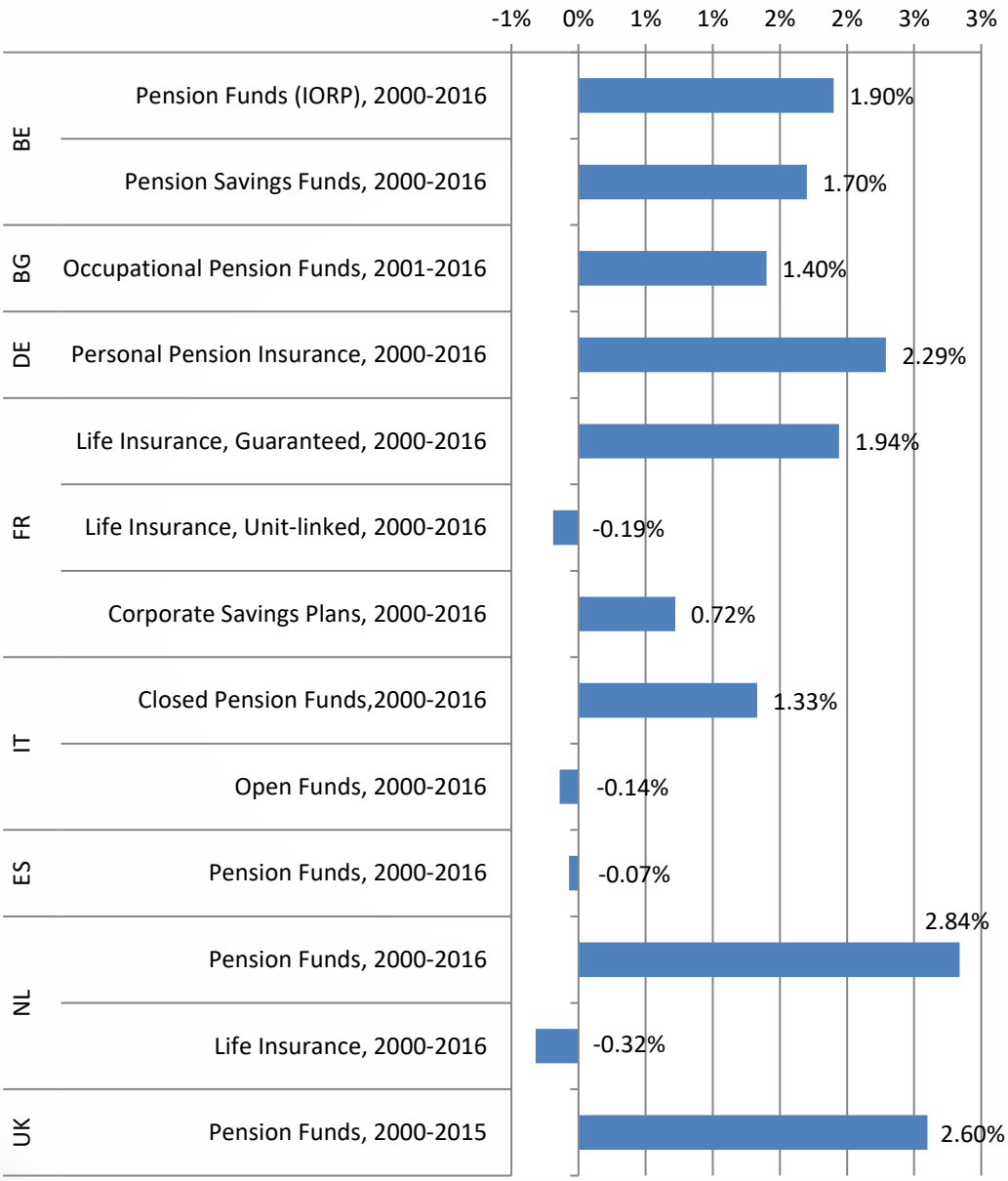
[23] However, in both cases returns would most likely have been lower, but we have been able to find return data for the earlier years, from 2000 to 2002, when equity markets declined strongly.

[24] We could not find earlier aggregate returns as for Bulgaria, Estonia, Latvia, Romania and Slovakia.

United Kingdom where the standard of life of retirees depends heavily on pre-funded pension schemes.

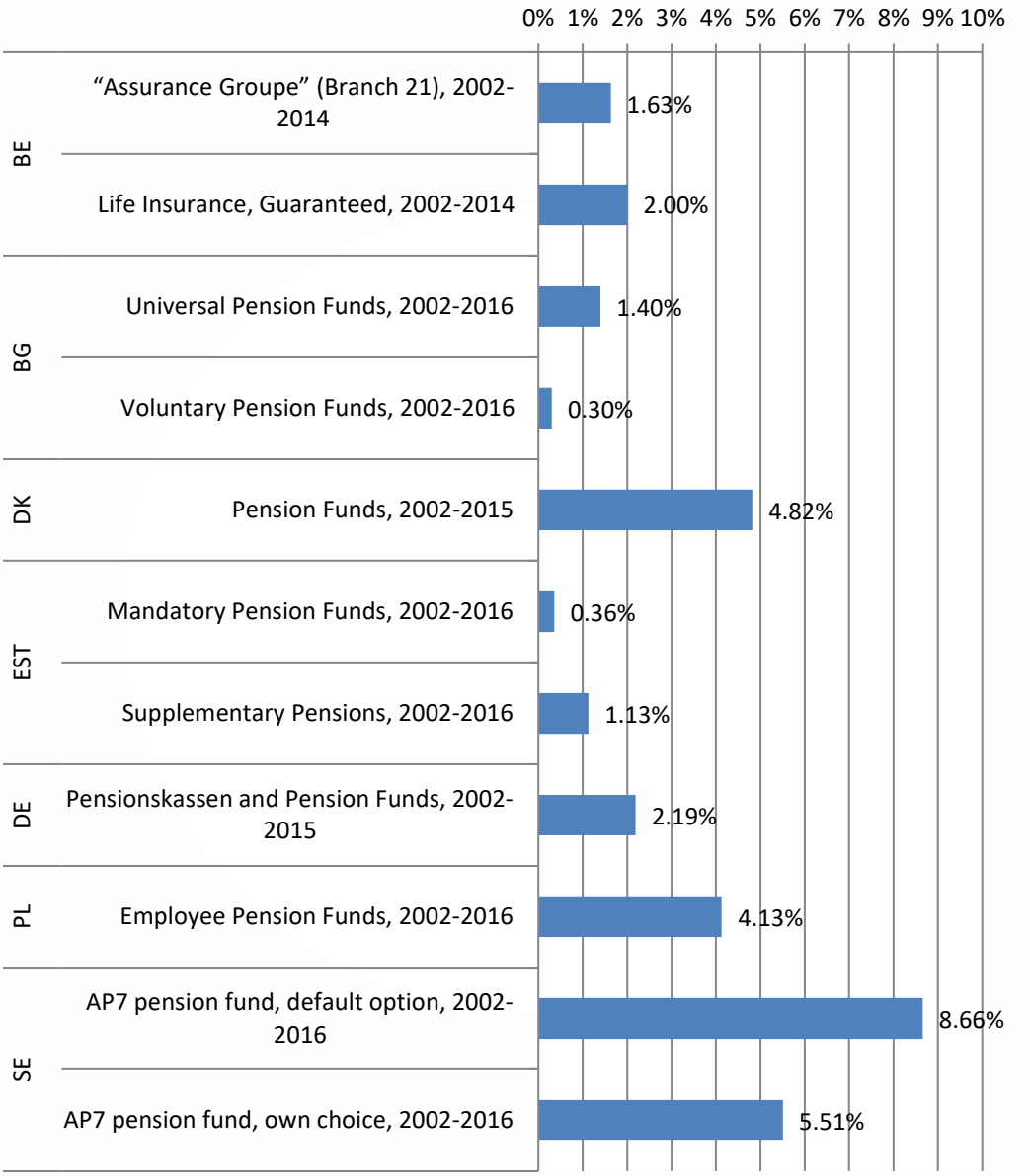
The following tables detail the long term real returns of the main long term and pension saving product categories in the 15 European countries analysed.

Graphs EX 3(A) - ANNUALISED REAL RETURNS OF PENSION SAVINGS - AFTER CHARGES & INFLATION - BEFORE TAX - FROM 2000/01



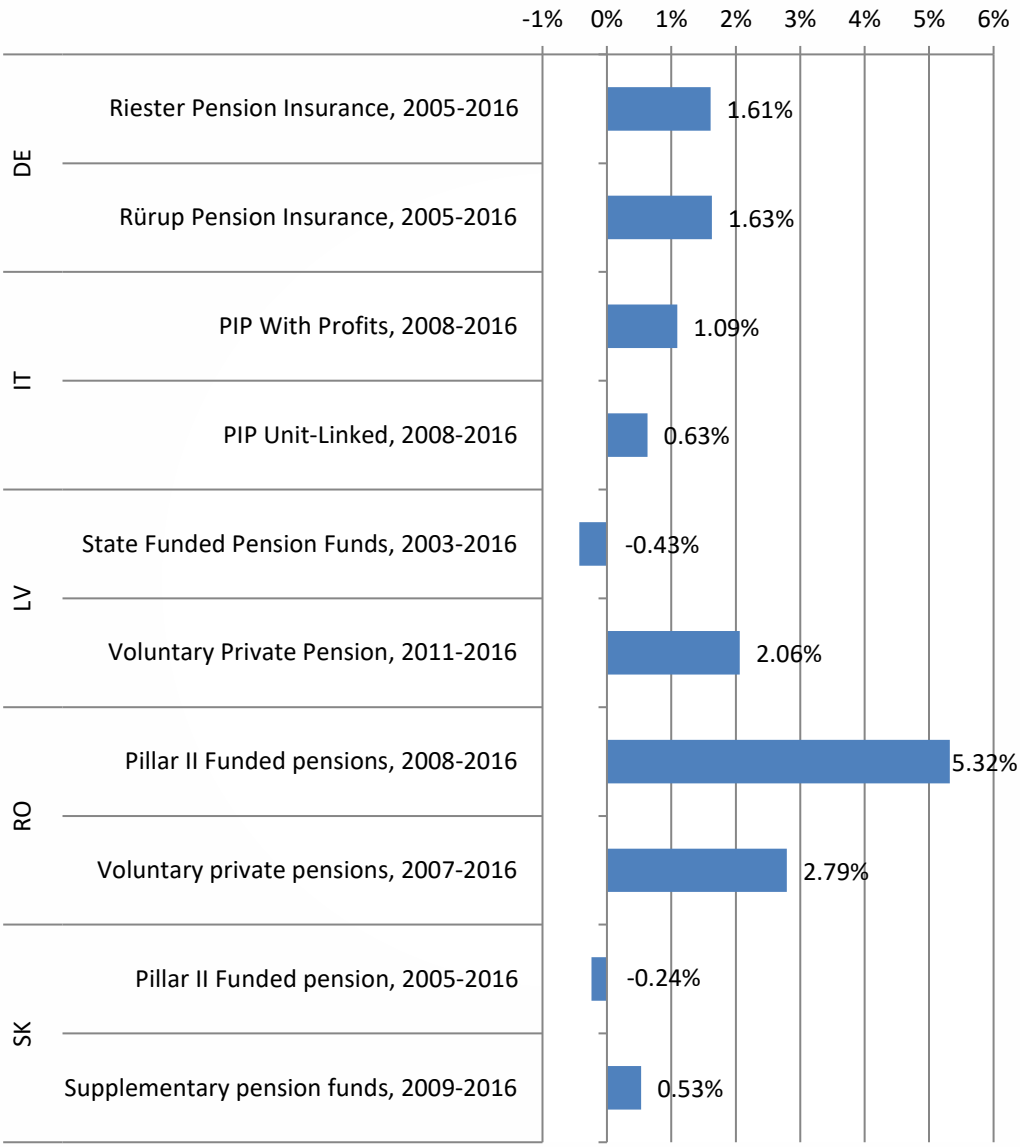
Source: BETTER FINANCE Research

Graph EX 3(B) - ANNUALISED REAL RETURNS OF PENSION SAVINGS - AFTER CHARGES & INFLATION - BEFORE TAX - FROM 2002



Source: BETTER FINANCE Research

Graph EX 3(C) - ANNUALISED REAL RETURNS OF PENSION SAVINGS - AFTER CHARGES & INFLATION - BEFORE TAX - LATER STARTING DATES



Source: BETTER FINANCE Research

Pension Savings: The Real Return

2017 Edition

General Report

Introduction

In June 2013, BETTER FINANCE published a research report entitled “Private Pensions: The Real Return” which evaluated the return of private pension products after charges, after inflation (“real” returns) and – whenever possible – after taxation. This first report furthermore identified the contributing factors to these returns in Denmark, France and Spain including an in-depth description of the pension savings vehicles available in these countries.

In September 2014, BETTER FINANCE published the 2014 edition of the "Pension Savings: The Real Return" research report, which included data updates for the three countries covered in the initial study, as well as five new countries with in-depth evaluation: Belgium, Germany, Italy, Poland and the United Kingdom.

The 2015 edition of the BETTER FINANCE research report aimed at updating the existing country cases and expanding the coverage to 15 European Union countries with the addition of Bulgaria, Estonia, Latvia, the Netherlands, Romania, Sweden and Slovakia. Hence, the coverage of the research report augmented to approximately 85% of the EU population.

The 2016 and 2017 editions are an update of the 15 existing country cases with the most recent data available at the time of print, as well as improvements to the coverage of available pension vehicles as an important goal is to encompass all savings products actually used by EU citizens to save for retirement. Furthermore, overviews on recent trends in the respective long term savings and pension markets are given.

The whole research report series showed that real returns of retirement savings have been very low over the reviewed periods once charges, inflation and taxes had been taken into account. Measuring all elements (inflation, charges and taxes) that reduce investment performance is especially important in a low interest rate environment because the real return for savers can be substantially negative. As a comprehensive approach to provide this indispensable information to savers is not provided for the time being by Public Authorities or other independent bodies, this research report aims at improving transparency on the real returns of long term and pension savings in Europe. This is in line with the European Commission's current "Action" to improve the transparency of performance and fees in this area (as part of its Capital Markets Union – CMU - Action Plan).

Country profiles

Table 1 includes some key characteristics of the pension systems in the countries under review within this research report.

Table GR 1. Country Profiles (at the end of 2016)

Belgium			
Net equity of households in pension funds reserves (in € bln.)	92	Net equity of households in pension funds reserves as % of GDP	22%
Net equity of households in life insurance reserves (in € bn)	202	Net equity of households in life insurance reserves as % of GDP	48%
Working population	4.9 mln.	Age dependency ratio, old (% of working-age population)	29%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			61%
Bulgaria			
Net equity of households in pension funds reserves (in € bln.)	5	Net equity of households in pension funds reserves as % of GDP	12%

Net equity of households in life insurance reserves (in € bn)	1	Net equity of households in life insurance reserves as % of GDP	1%
Working population	3.2 mln.	Age dependency ratio, old (% of working-age population)	31%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			-
Denmark			
Net equity of households in pension funds reserves (in € bln.)	181	Net equity of households in pension funds reserves as % of GDP	65%
Net equity of households in life insurance reserves (in € bn)	233	Net equity of households in life insurance reserves as % of GDP	84%
Working population	2.9 mln.	Age dependency ratio, old (% of working-age population)	30%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			66%
Estonia			
Net equity of households in pension funds reserves (in € bln.)	3	Net equity of households in pension funds reserves as % of GDP	15%
Net equity of households in life insurance reserves (in € bn)	0	Net equity of households in life insurance reserves as % of GDP	2%
Working population	0.7 mln.	Age dependency ratio, old (% of working-age population)	29%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			60%
France			
Net equity of households in pension funds reserves (in € bln.)	203	Net equity of households in pension funds reserves as % of GDP	9%
Net equity of households in life insurance reserves (in € bn)	1.718	Net equity of households in life insurance reserves as % of GDP	77%

Working population	29.2 mln.	Age dependency ratio, old (% of working-age population)	31%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			68%
Germany			
Net equity of households in pension funds reserves (in € bln.)	813	Net equity of households in pension funds reserves as % of GDP	26%
Net equity of households in life insurance reserves (in € bln.)	963	Net equity of households in life insurance reserves as % of GDP	31%
Working population	42 mln.	Age dependency ratio, old (% of working-age population)	33%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			50%
Italy			
Net equity of households in pension funds reserves (in € bln.)	256	Net equity of households in pension funds reserves as % of GDP	15%
Net equity of households in life insurance reserves (in € bln.)	657	Net equity of households in life insurance reserves as % of GDP	39%
Working population	25.2 mln.	Age dependency ratio, old (% of working-age population)	36%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			80%
Latvia			
Net equity of households in pension funds reserves (in € bln.)	3	Net equity of households in pension funds reserves as % of GDP	13%
Net equity of households in life insurance reserves (in € bln.)	0	Net equity of households in life insurance reserves as % of GDP	1%
Working population	1 mln.	Age dependency ratio, old (% of working-age population)	30%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			-

Netherlands			
Net equity of households in pension funds reserves (in € bln.)	1.425	Net equity of households in pension funds reserves as % of GDP	204%
Net equity of households in life insurance reserves (in € bln.)	152	Net equity of households in life insurance reserves as % of GDP	22%
Working population	8.8 mln.	Age dependency ratio, old (% of working-age population)	29%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			96%
Poland			
Net equity of households in pension funds reserves (in € bln.)	39	Net equity of households in pension funds reserves as % of GDP	9%
Net equity of households in life insurance reserves (in € bln.)	18	Net equity of households in life insurance reserves as % of GDP	4%
Working population	17 mln.	Age dependency ratio, old (% of working-age population)	23%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			53%
Romania			
Net equity of households in pension funds reserves (in € bln.)	7	Net equity of households in pension funds reserves as % of GDP	4%
Net equity of households in life insurance reserves (in € bln.)	2	Net equity of households in life insurance reserves as % of GDP	1%
Working population	8.7 mln.	Age dependency ratio, old (% of working-age population)	27%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			-

Slovakia			
Net equity of households in pension funds reserves (in € bln.)	9	Net equity of households in pension funds reserves as % of GDP	11%
Net equity of households in life insurance reserves (in € bln.)	4	Net equity of households in life insurance reserves as % of GDP	5%
Working population	2.7 mln.	Age dependency ratio, old (% of working-age population)	20%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			81%
Spain			
Net equity of households in pension funds reserves (in € bln.)	168	Net equity of households in pension funds reserves as % of GDP	15%
Net equity of households in life insurance reserves (in € bln.)	167	Net equity of households in life insurance reserves as % of GDP	15%
Working population	22.7 mln.	Age dependency ratio, old (% of working-age population)	29%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			90%
Sweden			
Net equity of households in pension funds reserves (in € bln.)	397	Net equity of households in pension funds reserves as % of GDP	87%
Net equity of households in life insurance reserves (in € bln.)	112	Net equity of households in life insurance reserves as % of GDP	25%
Working population	5.1 mln.	Age dependency ratio, old (% of working-age population)	32%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			56%

United Kingdom			
Pension assets (in € bn)	3.860	Pension assets as % of GDP	163%
Net equity of households in life insurance reserves (in € bn)	743	Net equity of households in life insurance reserves as % of GDP	31%
Working population	32 mln.	Age dependency ratio, old (% of working-age population)	28%
Net pension replacement rates, Men, % of pre-retirement earnings, 2014			29%

Source: OECD, Eurostat, World Bank, UK Office for National Statistics
Any discrepancies with OECD data arise from the fact that data from this table does not refer to pension funds assets, but to pension entitlements

A useful indicator of the pressure on pension systems is the old-age-dependency ratio, defined as the ratio between the total number of elderly persons when they are generally economically inactive (aged 65 and above) and the number of persons of working age[25]. This ratio is low in Slovakia (20%) and Poland (23%). It is the highest in Italy (36%) meaning that the pressure on the PAYG (Pay-As-You-Go) system is at the maximum level in this country. Bulgaria, Denmark, France, Germany, Latvia and Sweden all have ratios of 30% or above.

Pension schemes, life insurance contracts and PAYG systems are combined differently in each country to build the overall financial income of retirees[26]. The public (mandatory) basis is illustrated in the net pension replacement rate from public pension systems, for men as percentage of pre-retirement earnings for the year of 2014 as the most recent estimation. These replacement rates are highest in the Netherlands (96%), closely followed by Spain (90%) and still solid in Slovakia (81%) and Italy (80%).

[25] Eurostat definition: http://ec.europa.eu/eurostat/web/products-datasets/product?code=tsdde511
[26] Looking only at financial sources of pension income; property-related income is not in the scope of this study.

The net equity of households in pension fund reserves ranges from a minimum of 4% in Romania to a maximum of 204% in the Netherlands. With the exception of the Netherlands, Sweden (87%) and Denmark (65%), this ratio is inferior to 30% in all countries. This reflects that only those three countries and the United Kingdom, for which we can similarly calculate pension assets as percentage of GDP (163%), have been building pre-funded pension schemes for a long time, whereas other countries have widely relied on a publicly-managed PAYG scheme.

However, one should also take into account a second indicator to form a correct perception of savings accumulated for retirement: the ratio of the net equity of households in life insurance reserves and annuities as a percentage of GDP. Indeed, many pension arrangements are organised within the legal framework of life insurance contracts, both in pillar II (occupational and company schemes) and pillar III (individual private contracts) of the pension systems. For instance, the net equity of households in life insurance reserves represents 84% of GDP in Denmark and 77% in France. Moreover, in countries like France, life insurance is widely used by households in order to obtain additional resources at retirement age, even though most products offered by insurance companies are not specifically designed for retirement, i.e. subscribers can withdraw their savings at any moment even when they are not retired. It is not possible to know ex-ante which percentage of life insurance contracts will actually be used during the retirement period, but many polls confirm that this objective is a major motivation for subscribing to a life insurance contract. Less widespread in the Eastern European countries, the weight of life insurance is equal or inferior to 5% of GDP in Bulgaria, Poland, Romania, Slovakia, and the Baltic States Estonia and Latvia.

Overall, the countries under review can be divided into three categories:

- In the first group of countries comprising Denmark, Sweden, the Netherlands, and the United Kingdom, the sum of pension and life insurance assets (and liabilities) represents amounts superior to the annual GDP. In these countries, the issue of the real returns of private

pensions is a crucial one for future retirees, especially for those who are members of defined contribution schemes.

- In a contrary grouping, citizens have little pre-funded assets available for retirement. The sum of life insurance contracts and pension funds' assets represented about or less than 15% of the GDP in Bulgaria, Estonia, Latvia, Poland, Romania and Slovakia. In these countries, citizens will predominantly depend on the quality and sustainability of arrangements within the framework of PAYG systems.
- The third group of countries is in an intermediate position. Pension funds and life insurance contracts represent 86% of GDP in France, 70% in Belgium, 57% in Germany, 55% in Italy and 30% in Spain. In these countries, citizens depend both on the sustainability of the PAYG systems and on the returns of private pension savings. Governments focus on strengthening the public pension system (as is the case of Italy) and/or on the rise of savings in private pension products (as is the case in Germany). However, when private pension products deliver poor benefits, the legitimacy of such efforts is questioned in the public debate.

A limitation of the present report is that it does not take into account housing as an asset for retirement. The proportion of households owning their residences varies greatly from one country to another. For example, it is especially low in Germany, where a majority of households rent their residences and where home loan and savings contracts have consequently been introduced as the most recent state-subsidised pension savings scheme. For the time being, returns of pension savings are all the more important since a majority of retirees cannot rely on their residential property to ensure a decent minimum standard of life.

However, residential property is not necessarily the best asset for retirement: indeed it is an illiquid asset and it often does not fit the needs of the elderly in the absence of a broad use of reverse mortgages. The house might become too large or unsuitable in case of dependency. In that case, financial assets might be preferable, on the condition that they provide a good performance.

Return attribution

Inflation

For several of the countries analysed in this research report, inflation rates were of significant magnitude and consequently had a severe impact on returns in real terms over the periods in review. One has to keep in mind that even for those countries with moderate inflation, the compound effect over long periods, as applicable for the case of retirement savings, can lead to considerable losses in purchasing power.

Table GR 2. Inflation [in %]

	EU 28	Belgium	Bulgaria	Denmark	Estonia	France	Germany	Italy	Latvia	Netherlands	Poland	Romania	Slovakia	Spain	Sweden	UK
2000	3.5	3.0	11.3	2.4	5.0	1.8	2.2	2.7	1.7	2.9	8.4	40.7	8.4	4.0	1.3	0.8
2001	2.7	1.9	4.8	2.0	4.2	1.5	1.4	2.3	3.2	5.1	3.5	30.3	6.7	2.5	3.2	1.1
2002	2.4	1.3	3.8	2.6	2.7	2.2	1.2	3.0	1.5	3.2	0.8	17.8	3.2	4.0	1.7	1.6
2003	2.1	1.6	5.6	1.2	1.2	2.4	1.1	2.5	3.6	1.6	1.7	14.2	9.4	2.7	1.8	1.3
2004	2.4	2.0	4.0	1.0	4.8	2.2	2.2	2.3	7.3	1.3	4.3	9.3	5.9	3.3	0.9	1.6
2005	2.3	2.8	7.4	2.3	3.7	1.8	2.2	2.0	7.1	2.0	0.8	8.7	3.8	3.7	1.2	1.9
2006	2.2	2.1	6.1	1.6	5.1	1.7	1.4	2.1	6.7	1.7	1.4	4.9	3.7	2.7	1.5	3.0
2007	3.2	3.1	11.6	2.4	9.7	2.8	3.1	2.8	14.0	1.6	4.3	6.7	2.5	4.3	2.5	2.1
2008	2.2	2.7	7.2	2.5	7.5	1.2	1.1	2.4	10.4	1.7	3.3	6.4	3.5	1.4	2.1	3.0
2009	1.5	0.3	1.6	1.1	-1.9	1.0	1.0	1.1	-1.4	0.7	3.9	4.7	0.0	0.9	2.8	2.9
2010	2.7	3.4	4.4	2.8	5.4	2.0	1.7	2.1	2.4	1.8	2.9	7.9	1.3	2.9	2.1	3.6
2011	3.0	3.2	2.0	2.4	4.1	2.7	2.3	3.7	3.9	2.5	4.6	3.2	4.6	2.3	0.4	4.3
2012	2.3	2.1	2.8	1.9	3.6	1.5	2.0	2.6	1.6	3.4	2.1	4.6	3.4	3.0	1.0	2.6
2013	1.0	1.2	-0.9	0.5	2.0	0.8	1.3	0.6	-0.4	1.4	0.6	1.3	0.4	0.3	0.4	2.0
2014	-0.1	-0.4	-2.0	0.1	0.1	0.1	0.0	0.0	0.3	-0.1	-0.7	1.0	-0.1	-1.1	0.3	0.5
2015	0.2	1.5	-0.9	0.3	-0.2	0.3	0.2	0.1	0.4	0.5	-0.4	-0.7	-0.5	-0.1	0.7	0.2
2016	1.2	2.2	-0.5	0.3	2.4	0.8	1.7	0.5	2.1	0.7	0.9	-0.1	0.2	1.4	1.7	1.6

Source: Eurostat (All-items HICP - Annual rate of change), Index, 2015=100

Over the last 17 years, from 2000 to 2016, the highest average inflation rates could be observed in the Eastern European countries. By far the severest loss of purchasing power was recorded in Romania with an

annualised average of 9.0%. Especially in the early 2000s, Romania suffered from high double-digit inflation rates of 41% in 2000 and 30% in 2001, and it took until 2004 to see it drop under 10%. The only two other countries that witnessed double-digit inflation rates were Bulgaria (2000, 2007) and Latvia (2007, 2008) albeit remaining below 15%. The annual average rates of the other Eastern European countries ranged in between 4.0% (Bulgaria) and 2.5% (Poland), with the latter being close to the highest rate of a Western European country, Spain, at 2.2%, which was likewise the European Union average. The countries with the lowest average inflation rate were Sweden and Germany at 1.5%, closely followed by France and Denmark (at 1.6% each).

While in the first nine years of the millennium no deflationary trends occurred, the year of 2009 brought first negative inflation rates to the Baltic states Estonia (-1.9%) and Latvia (-1.4%). The more recent years of 2014 and 2015 brought deflation to a large number of countries (7 respectively 6 countries). In its aim to maintain the inflation rates below but close to 2%, the European Central Bank undertook considerable monetary policy efforts to bring the rates back to the desired levels. In 2016, inflation rates rose again for all countries except Bulgaria and Romania, and with Belgium, Germany, Sweden and the United Kingdom measuring rates around 2%, deflationary worries seem to fade.

The low inflation rates of the recent years go hand in hand with a reduction in public sector deficits, see recent numbers in the following table:

Table GR 3. Public sector deficit and debt [in %]				
	Public Sector Deficit as a % of GDP		Public Debt as a % of GDP	
	2015	2016	2015	2016
Belgium	-2.5	-2.6	106.0	N/A
Bulgaria	-1.6	0.0	26.0	29.5
Denmark	-1.3	-0.9	39.5	37.8
Estonia	0.1	0.3	10.1	9.5
France	-3.6	-3.4	95.6	96.3
Germany	0.7	0.8	71.2	68.3
Italy	-2.7	-2.4	132.1	132.6
Latvia	-1.3	0.0	36.5	40.1
Netherlands	-2.1	0.4	64.5	61.8
Poland	-2.6	-2.4	50.2	53.8
Romania	-0.8	-3.0	37.3	37.2
Slovakia	-2.7	-1.7	52.5	51.9
Spain	-5.1	-4.5	99.8	99.4
Sweden	0.3	0.9	44.7	41.2
United Kingdom	-4.3	-3.0	88.0	85.4

Source: Eurostat, BETTER FINANCE Research

In 2016, a surplus was observable in Sweden, Germany, the Netherlands and Estonia. In particular, Germany recorded the third consecutive year with a surplus, while in Estonia, one could be observed for a second year in a row. The largest public sector deficit as percentage of the GDP was observable in Spain at -4.5%, being at the bottom for a second consecutive year. The Maastricht Treaty requirement (-3% ratio of the planned or actual government deficit to gross domestic product at market prices) was likewise missed out by Romania (-3.0%), the United Kingdom (-3.0%) and France (-3.4%). For the last two countries, this furthermore was a miss for the second consecutive year.

When it comes to the second criterion of the Maastricht Treaty concerning the public authorities, we have a look at the outstanding level of public debt which should remain below a theoretical ceiling of 60%. Eight countries had an outstanding level of debt below this threshold while seven countries, all of them from Western Europe, surpassed it. The surplus made

by the Netherlands in 2016 positions the Dutch public authorities close to the desired levels at 61.8%.

Asset Mix

There are striking differences between pension funds' asset allocations across European countries as shown by the following table:

Table GR 4. Pension funds' asset allocation, [in % of total assets]

		Cash and deposits	Bills and bonds	Equities	Other
Belgium	2005	9.7	25.2	36.3	28.8
Belgium	2010	6.5	42.8	37.7	13.0
Belgium	2015	4.4	43.9	41.8	9.9
Denmark	2005	0.8	56.5	29.2	13.5
Denmark	2010	0.5	70.0	15.5	14.0
Denmark	2015	0.3	63.1	17.8	18.7
Estonia	2005	6.0	54.6	37.4	2.0
Estonia	2010	9.4	47.8	38.6	4.1
Estonia	2015	20.2	48.5	31.0	0.3
Germany	2005	3.8	45.7	12.0	38.5
Germany	2010	2.5	46.3	4.7	46.5
Germany	2015	3.8	53.5	5.0	37.8
Italy	2005	4.7	40.8	15.7	38.9
Italy	2010	5.1	46.1	15.3	33.5
Italy	2015	4.1	49.7	19.5	26.7
Latvia	2015	17.1	59.5	21.1	2.2
Netherlands	2005	2.3	40.8	46.2	10.7
Netherlands	2010	2.4	41.9	35.5	20.2
Netherlands	2015	2.8	46.5	38.2	12.5
Poland	2005	4.1	63.4	32.0	0.4
Poland	2010	3.5	59.4	36.3	0.9
Poland	2015	6.9	10.4	82.3	0.5
Slovakia	2010	27.5	70.8	1.4	0.3
Slovakia	2015	17.4	78.4	1.8	2.4
Spain	2005	5.0	63.6	21.4	10.0
Spain	2010	19.3	57.6	12.1	11.0

Spain	2015	16.7	62.4	11.4	9.4
Sweden	2005	1.4	57.7	34.4	6.5
Sweden	2010	3.4	71.5	18.3	6.8
Sweden	2015	2.2	66.7	18.3	12.8
United Kingdom	2005	2.6	22.7	47.7	27.0
United Kingdom	2010	3.7	28.5	30.9	37.0
United Kingdom	2015	2.4	34.4	20.2	43.0

Source: OECD Global Pension Statistics

The asset allocation data in this table include both direct investment in cash and deposits, bills and bonds, equities and indirect investment through collective investment schemes (investment funds such as UCITS or AIF[27]). The "other" category comprises assets, such as loans, lands and buildings, hedge and private equity funds and other structured (unallocated) products.

In Belgium, bills and bonds represent the main component of investments in 2015 (57%). This percentage has considerably evolved in over a decade and more than doubled since 2005 (25%). All other asset categories, in return, saw their portion reduced with cash and deposits and other assets more than halved.

The specificity of Denmark is the predominance of corporate securities, both equity and bonds. Public bonds play a minor role because public deficits are small, as explained in the initial study. As of 2015, about 80% of Danish pension funds' assets are allocated to bonds and equity whereas cash and deposits are almost zero. The overall asset allocation in 2015, and in particular the portion of bills and bonds and equity, resembled the one of the other Scandinavian country covered by this report: Sweden (about 65% in bills and bonds, about 18% in equities).

[27] AIFs : Alternative Investment Funds , which are all the non-UCITS funds

Estonian, Latvian, Slovakian and Spanish pension funds held relatively large portions of cash and deposits of around 20% in the year of 2015. While the two Baltic states' pension funds did also hold considerable parts in equities (Estonia: 31%, Latvia: 21%), Spanish pensions funds held less (10%) and Slovakian's almost none.

In Germany, collective investment schemes play a predominant role in pension funds' assets. An additional feature of German pension funds is the importance of loans in their assets with most of these loans attributed to employees in companies. The portion directed to equities is the second lowest (5%) for the countries under review. One has to keep in mind that the OECD data aggregates Pensionskassen and the more risky but less distributed pension funds.

In Italy, public bonds and bills represent half of the pension funds' assets in 2015. Households have traditionally been strong investors in Italian government bonds, but they have progressively diminished their exposure to these types of products and institutional investors, pension funds among others, have been compensating for their withdrawals[28].

In the Netherlands, assets are somewhat equally divided into bonds and bills on the one hand and equities on the other hand. In 2015, bills and bonds are held to a slightly larger extent (47%) while ten years ago equities were still a little above (46%).

In Poland, equity accounted for 82% of the PFE assets in 2015 with a huge increase in this asset class in recent years (from 32% in 2005 to 82% in 2015). Bills and bonds played the smallest role among the countries under review, and their decline ran inversely to the rise in equities with cash and deposits and other assets being stable over time.

The United Kingdom has traditionally been the country where equities form a major part of asset allocation of pension funds. Their share decreased from 47% to 20% between 2005 and 2015. This trend is offset by a growing

[28] Zicchino, Lea; Alemanno, Andrea; "Italians are no Longer Bond People"; OEE Insights; No. 5; July 2017.

recourse to other (unallocated) assets, which might partly still include equities, and by a growing portion of bonds and bills.

For most countries, the period 2005-2015 shows a decrease in equities and an increase in public debt in the asset allocation of pension funds, partially due to unrealised capital gains generated by the historical decrease of interest rates[29].

Asset performance

Equity markets

Equity returns are of volatile nature in the short term and hence need to be observed with a long perspective in mind. The real return calculations in this report date back to 2000 at the earliest so we likewise take a look at how equity markets performed over the same period. In general, the 21st century began with one of the most severe bear markets in history and faces, in conjunction with the downward cycle of 2007-2008, two longer-lasting upward cycles from 2003-2006 and 2009-2016.

[29] A decrease in market interest rates translates into an increase in the mark-to-market value of fixed interest debt products held by investors.

Table GR 5. Historical Returns on Equity Markets, yearly average			
		Nominal Return	**Real Return**
Europe	(2000-2016)	2.1%	0.1%
Belgium	(2000-2016)	2.8%	0.9%
Bulgaria	(2006-2016)	-11.7%	-14.2%
Denmark	(2000-2016)	9.8%	8.1%
Estonia	(2003-2016)	7.2%	3.9%
France	(2000-2016)	1.2%	-0.3%
Germany	(2000-2016)	2.1%	0.6%
Italy	(2000-2016)	-1.0%	-2.9%
Latvia	(2005-2016)	3.1%	-0.6%
Netherlands	(2000-2016)	2.2%	0.3%
Poland	(2001-2016)	2.8%	0.8%
Romania	(2006-2016)	3.2%	-0.4%
Slovakia	(2000-2016)	8.2%	4.7%
Spain	(2000-2016)	2.3%	0.1%
Sweden	(2000-2016)	3.3%	1.8%
United Kingdom	(2000-2016)	2.9%	0.9%

Source: MSCI Indices (Net Returns), OMX Baltic Riga, Slovakia SAX, Eurostat

All the used indices are total return (value) indices except for Latvia and Slovakia, which are price indices (dividends not included)

Looking at equity performances on a per country basis is not possible over the full 17-year period for all countries under review in this report as corresponding indexes are not always available. For those complying, most have regained their nominal levels from the millennium's debut and even recorded distinct positive returns. The only country with a negative average nominal return over the full period was Italy, at -1.0%. The other equity market with a negative average return, Bulgaria, which performed particularly poorly and lost considerably (-11.7%) on average, did so over a shorter 11-year period. The best performing equity market could be observed in Denmark with a strong quasi double digit annual average (9.8%), followed by the Slovakian one at 8.1% and the Estonian (7.2%) for a shorter time horizon (over 14 years). The other countries with positive

nominal returns lagged behind this trio by a large margin, and their averages ranged between 3.3% (for Sweden) and 1.2% (for France).

As discussed earlier, inflation can have a significant impact on real returns in the long run and especially struck Eastern European countries. Looking at equity market returns adjusted for inflation ("real" returns) indeed saw the strong return rates for Slovakia and Estonia almost being cut in half (4.7% and 3.9%) whereas the Danish equity market still performed very well with 8.1% in real terms. The Swedish equity market delivered steady returns of 1.8% while the Belgian, British, Polish and German markets progressed slowly (between 0.9% - 0.6%). The Dutch, Spanish, French and Romanian markets did not really progress in real terms with the last two having slight negative averages (-0.3% and -0.4%). Italy recorded a distinct negative real average of almost -3% per year, while the Romanian market suffered -14.2% on average after deduction of inflation.

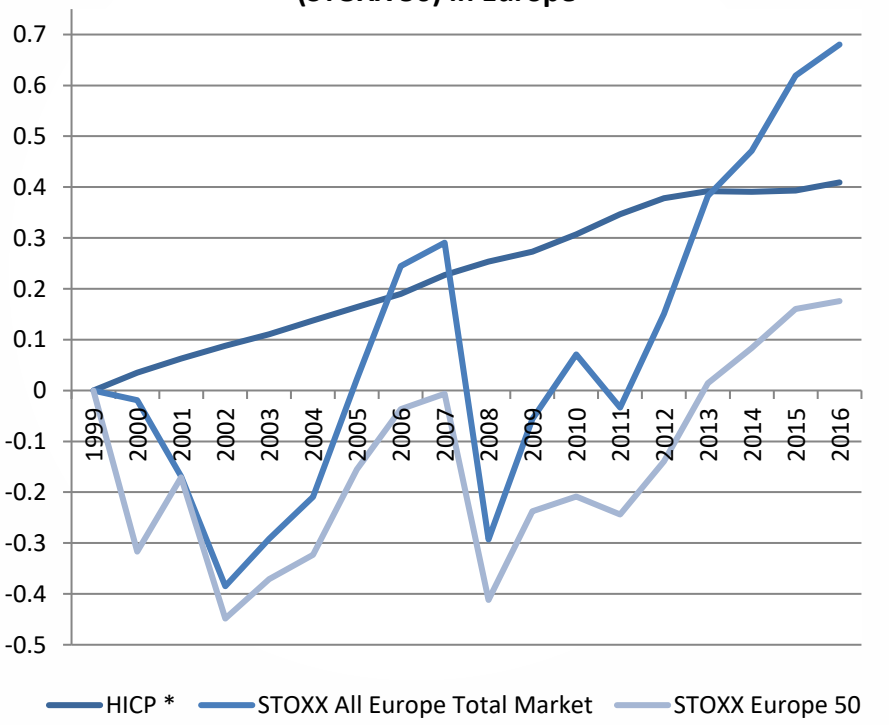
However, the equity indices used in Table GR6 are narrow, large cap only indices, usually including only a few tens of stocks each, and excluding all mid and small cap equities. Broader indices are required to better reflect the returns of the whole equity markets in Europe. Those include mid and small capitalisations, which have massively outperformed the "blue chips" over the last 17 years. As a result, the broader country equity market returns were much higher (for example the real return of the French broader equity market shown in Graph FR I has been very positive). But these broader country equity indices are unfortunately less known and often available only for recent years in Europe.

Only looking at the most recent year of 2016, European equity markets continued to progress taken as a whole. However, contrary to the long trend, Danish equities clearly slipped (-13.8%) in real terms after a very strong year of 2015 (37.4%). The only other two countries with negative real performances were Italy (-8.2%) and Belgium (-6.9%). The strongest real performance was recorded for Bulgarian equities (25.6%), which were worst performing over the long run, followed by Romania (18.1%) and the United Kingdom (17.3%) as the subsequent most progressing equity markets of the year.

When looking at the cumulated results at European level, as well as in the individual countries where we developed this analysis (see French, German, Spanish and UK country cases), broad stock market indices performed much better than the better known and much narrower large cap or "blue chip" indices (Stoxx Europe 50, FTSE 100, DAX 30, IBEX 35, CAC 40).

The following graph shows a comparison of the broad STOXX All Europe Total Market index which includes 1466 European stocks (as of 23 June 2017)[30] and the much narrower Stoxx Europe 50.

Graph GR I - Cumulated Performance of Wide Index (STOXX All Europe Total Market) vs Narrow Index (STOXX 50) in Europe



Sources: BETTER FINANCE calculations based on STOXX Limited and Eurostat

[30] https://www.stoxx.com/index-details?symbol=TE1P. There was no data available for the year 2000. The performance of the narrower MSCI Europe TR (Net) index (446 components as of 31 May 2017) for that year was taken as a proxy instead.

At European level, the difference at the end of our 17-year period is an astonishing 50.5% in favour of the broader stock market index. And whereas the performance of the narrow index (17.6%) was heavily outmatched by inflation (40.9%) over the last 17 years, the broader European stock market recorded a positive real performance with a cumulated gain of 68.0%.

Government bond markets

As already mentioned above, it is important to note that a decrease in interest rates translates into an increase in the mark-to-market value of bonds which had a positive impact on outstanding debt assets of pension funds. In return however, the capability to offer a good remuneration through new bond issuances is hereby reduced.

The following table indicates the returns of six major European bond markets for the period from 2000-2016:

Table GR 6. Historical Returns on Bond Markets, yearly average

		Nominal Return	Real Return
Belgium	(2000-2016)	5.7%	3.6%
France	(2000-2016)	5.3%	3.6%
Germany	(2000-2016)	5.1%	3.5%
Italy	(2000-2016)	5.6%	3.6%
Netherlands	(2000-2016)	5.2%	3.3%
Spain	(2000-2016)	5.6%	3.3%
United Kingdom	(2000-2016)	6.0%	3.9%

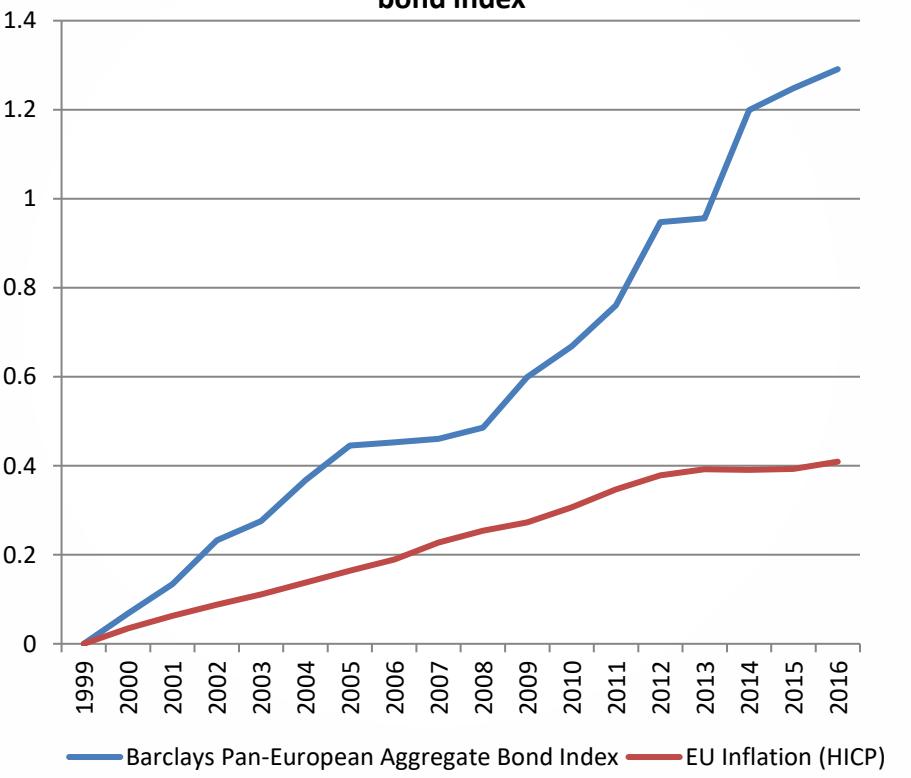
Source: Barclays (All Maturities Indices), Eurostat

The European government bond markets all showed steady nominal average returns over the whole period under review, ranging in between 6.0% (the United Kingdom) and 5.1% (Germany). Real average returns ranged even closer together, with again the United Kingdom leading the way at 3.9% and the Netherlands at the bottom at 3.3%. While equity markets usually perform better in the long run, each of the government bond markets under review outperformed the corresponding equity markets from Table 6 in the period from 2000 to 2016.

Looking at the year of 2016, most of the bond markets performed within reach of their long term average with the exception of the bond markets in the United Kingdom and Italy. While British government bonds recorded an exceptional real return of 9%, Italian ones did not progress much after deduction of inflation (0.3%).

The following graph shows the long-term cumulated returns of European bonds as a whole, that is both government and corporate bonds, as measured by the Barclays Pan-European TR index:

Graph GR II - Cumulated performance of Euro area bond index



Source: BETTER FINANCE research based on Barclays

Over the last 17 years, European bonds as a whole enjoyed a very positive nominal return which was significantly higher than the return of European

equities, and due to the continuous fall of bond interest rates over the period in review. It is difficult to foresee a continuation of this past trend given the very low level of interest rates reached today.

Graph GR II shows that this period has indeed been particularly favourable to bonds as an asset class as the considerable outperformance of European inflation over time illustrates.

Portfolio Manager / Advisor Competence

The initial BETTER FINANCE study highlighted that in almost all categories of investment funds, a majority of funds under-performed their benchmarks. Investment funds play an important role in today's asset allocation of pension vehicles, thus it is interesting to compare investment fund performances to benchmarks.

The Standard & Poor's annual "SPIVA" report measures the proportion of active funds that have beaten their benchmark. The results from the latest SPIVA Europe Scorecard for year-end 2016 are shown in the following table:

Table GR 7. Percentage of European Equity Funds Beating their Benchmarks

Fund Category	Comparison Index	1-year (2016)	3-year (2014-2016)	5-year (2012-2016)	10-year (2007-2016)
Data in euros					
Europe Equity	S&P Europe 350	20	26	26	12
Eurozone Equity	S&P Eurozone BMI	20	16	12	10
France Equity	S&P France BMI	33	33	22	16
Germany Equity	S&P Germany BMI	12	22	20	18

Italy Equity	S&P Italy BMI	39	36	42	24
Spain Equity	S&P Spain BMI	34	33	30	18
Netherlands Equity	S&P Netherlands BMI	38	18	6	3
Data in local currencies					
U.K. Equity	S&P United Kingdom BMI	13	38	50	26
Denmark Equity	S&P Denmark BMI	97	78	79	20
Poland Equity	S&P Poland BMI	31	48	46	22
Sweden Equity	S&P Sweden BMI	45	77	55	46

Source: S&P Dow Jones Indices LLC, Morningstar.

Outperformance is based on equal-weighted fund counts. Index performance based on total return.

The latest findings for the year of 2016 reveal again that a large majority of funds do not outperform their respective benchmark with Denmark being the only exception. For funds investing in European equities, only 20% were able to outperform their benchmark, the S&P Europe 350. The worst results on a country basis were recorded in Germany and the UK, where only 12% respectively 13% outperformed the respective country index. Funds investing in the Nordic countries compared better. While 45% of funds investing in Swedish equity beat their benchmark almost all funds investing in Danish equities outperformed the respective country index (97%).

For retirement savings products, consistent positive long-term returns are of particular importance. The SPIVA Europe Scorecard discloses

outperformances over a ten-year period as the longest time horizon. The performance of funds in comparison to their benchmarks tends to worsen over the long run. Over 10 years, only 12% of the funds investing equities in Europe outperform their benchmark and almost none of those investing in Dutch equities (3%). Only those investing in Germany and the UK tend to relatively perform better long-term than in the year of 2016. Those investing in Swedish equities remain stable by outperforming in a little less than 50% of the cases (46%). The SPIVA Scorecard furthermore reveals that active portfolio management did also largely underperform in less efficient markets[31]. However, definitive conclusions cannot be drawn from these calculations because they relate to a period that is too short, including no more than two cyclical periods: equity markets fell sharply in 2008 and 2009, then they recovered progressively until June 2017, with short sub-periods of decline in most countries. Prior research found that investment funds tend to outperform their benchmarks in a bearish market while they underperform in a bullish market. [32]

For a longer time horizon and especially in the case of retirement savings, a recent study[33] provides relevant results for UK personal pension funds operated by 35 providers over a 30-year period (1980-2009). Big providers performed better than their prospectus benchmarks but they underperformed treasury bills over the period of a fund's lifespan. Similarly, specialisation of portfolio managers in the investment universe proves to deliver superior average annual returns but does not show superior long-term performances. More generally, they found that the short-term performances based on arithmetic annual averages are not relevant indicators of the long-term performance calculated as geometric compounded returns similar to the methodology used in the present study. The authors also showed that younger funds perform better than the older

[31] S&P Dow Jones Indices (2017): SPIVA® Europe Scorecard, Year-End 2016, April 2017.
[32] IODS (2014) : Study on the Performance and Efficiency of the EU Asset Management Industry, a study for the European Commission (Internal Market and Services DG) and the Financial Services User Group (FSUG), August 2014
[33] Anastasia Petraki and Anna Zalewska (April 2014), "With whom and in what is it better to save? Personal pensions in the UK", working paper of the Centre for Market and Public Organisation, University of Bristol.

ones, which are under lower competitive pressure given the cost of leaving a fund to join a better performing one.

Investment charges

Findings of the initial study by BETTER FINANCE on the opacity and weight of charges did not change dramatically in the subsequent research reports. Charges are often very complex and far from being harmonised for different pension providers. Consequently, this makes it difficult for consumers to understand and entirely capture the magnitude of charges on their pension product. Generally speaking, charges are heavier on personal pension products than on occupational pension funds, as employers are in better position to negotiate with competing providers than individuals are.

To tackle this complexity, some pension providers - for example, some auto-enrolment schemes in the United Kingdom – set up fixed costs per member, but this penalises low paid workers. A report of the Office of Fair Trading (2013) highlighted the lack of transparency and comparability in terms of fees charged to members of UK pension funds: various fees are added to the Annual Management Charges (AMC) on the basis of which pension fund providers usually promote their services. The dispersion of charges has also been found to be very significant, depending amongst others, on the type (personal plans are more heavily charged than occupational ones) and the size of the funds.

Following the OFT study, the Department for Work and Pensions issued a regulation which took effect on 6 April 2015[34]. The default schemes used by employers to meet their automatic enrolment duties are subject to a 0.75% cap on AMCs. The cap applies to most charges, excluding transaction costs. Moreover, an audit was conducted on schemes being "at risk of being poor value for money". It found that about one third of surveyed schemes had AMCs superior to 1% and that a significant number of savers would have to pay exit fees superior to 10% in case they wanted to switch to a better performing fund. Moreover, starting from October 2017, existing early exit

[34] https://www.legislation.gov.uk/ukpga/2015/8/contents/enacted

charges in occupational pension schemes cannot exceed 1% of the member's benefits and no new early exit charges can be imposed to members who joined that scheme after 10 October 2017.

While not necessarily as advanced as in the United Kingdom, the introduction of transparent, limited and comparable charges are subject of debate in several of the investigated countries.

Taxation

The general model applied to pension products is usually deferred taxation: contributions are deducted from the taxable income and pensions are taxed within the framework of income tax or, usually, at a more favourable rate. Some countries are currently in the middle of a transitional phase comprising proportionate deferred taxation which will lead to entire deferred taxation in the future.

The so-called EET regime, "a form of taxation of pension plans, whereby contributions are exempt, investment income and capital gains of the pension fund are also exempt and benefits are taxed from personal income taxation[35]" is predominant in the countries covered by this research report. There are only a few exception, like in Poland, where the reverse rule is applied: contributions are paid from the taxable income while pensions are tax-free (the only exception from the TEE regime are IKZEs – individual pension savings accounts). Pensions in Sweden are taxed in all three stages with contributions to occupational pensions being partially deductible as the only exception. Furthermore, in Bulgaria and for the funded pensions in Slovakia, one can even observe EEE regimes with no pension taxation at all within defined tax exemption limits.

Usually, the accumulated capital can be withdrawn by the saver as a lump sum at the retirement age, at least partially. Our calculations of returns net of taxation are based on the most favourable taxation case and assuming that the saver withdraws the maximum lump sum possible.

[35] OECD definition: https://stats.oecd.org/glossary/detail.asp?ID=5225

Savings products used as retirement preparation but which are not strictly pension products might benefit from a favourable tax treatment. This is the case of life insurance in France but successive increases of the rate of "social contributions" on the nominal income tend to diminish the returns of the investment.

An overview of the main taxation rules applied on a country basis can be found in the following table:

Table GR 8. Overview of Main Taxation Rules Applied in the Country Reports	
Belgium	● Contributions are tax deductible up to prescribed limits; ● No taxation in the capital accumulation phase; ● Pillar II: Taxation in pay-out phase depending on origin of contribution, local taxes to be added; ● Pillar III: Taxation in pay-out phase at the age of 60, local taxes to be added.
Bulgaria	● EEE regime; ● Annual contributions of up to 10% of annual taxable income is tax free;
Denmark	● Contributions are usually tax deductible (exception lump sum contributions); ● Interest, dividends, earnings and losses are taxed at 15.3% in the capital accumulation phase; ● Taxation at the personal income rate in the pay-out phase (lump sum pay-outs are tax free).
Estonia	● Funded pensions are taxed according to the EET regime with some specifications (deductions) concerning the payouts; ● Supplementary pensions are taxed according to the EET regime.
France	● Complex taxation regimes; ● Contributions to some DC pension plans (PERCO and PERP) are income tax deductible but no deductibility from social levies. No tax deductibility for life insurance contracts; ● Taxation in the retirement phase (sometimes with tax reductions).
Germany	● EET regime, transitional phase towards deferred taxation at the moment; ● Contributions are tax deductible for sponsored retirement products up to prescribed limits; ● Taxation at the personal income rate in the pay-out phase for sponsored retirement products.
Italy	● ETT regime, contributions are tax deductible up to prescribed limits; ● Accruals are taxed at 20% (12.5% on income derived from public bonds) in the capital accumulation phase; ● Taxation in the pay-out phase varies from 9-15%.
Latvia	● Pillar II – State Funded Pensions are not subject to taxation in the contribution and capital accumulation phase. Pension benefits are subject to personal income tax while there is also a non-taxable minimum;

	● Pillar III – Voluntary private pension are generally taxed as Pillar II, however there are deduction limits in the contribution phase.
Poland	● TEE regime for Employees Pension Programs (PPE) and Individual Retirement Accounts (IKE), contributions to Individual Retirement Savings Accounts (IKZE) are tax deductible up to prescribed limits (EET regime); ● PPE and IKE are not taxed in the retirement phase, IKZE are subject to a reduced flat-rate income tax of 10%.
Romania	● For funded pensions, contributions and investment income are tax exempted while benefits above a certain limit are subject to the personal income tax; ● For voluntary private pensions, contributions are tax deductible up to a deduction limit, investment income is tax exempted and benefits are subject to the personal income tax.
Slovakia	● Funded pensions are usually not taxed (EEE regime); ● Supplementary pensions follow the EET regime with several exceptions and specifications.
Spain	● EET regime, contributions are tax deductible up to prescribed limits; ● No taxation in the capital accumulation phase; ● Pay-outs are taxed differently depending whether they take the form of an annuity or the form of a lump sum payment.
Sweden	● Contributions to occupational pensions can be partly deducted from tax while contributions to private pension are taxed; ● Investment return is subject to tax rate on standard earnings at 15%; ● Payouts are generally subject to income tax.
The Netherlands	● EET regime; ● Contributions paid into pension funds are tax deductible; ● Taxation in the pay-out phase at the personal income tax rate.
United Kingdom	● EET regime; ● Allowances and tax relief on contributions with test against lifetime allowance ● Pay-outs are taxed as income, there are three marginal rates in the UK at the moment.

Source: BETTER FINANCE elaboration

Conclusion

The objective of this research report is a global overview of the real return of private pensions in the 15 EU countries under review. The net returns after fees, commissions, inflation and taxes are critical to protect the purchasing power of the income of pension savers when they retire. Unfortunately, information on these real returns is scarce and often even deteriorating, hence this research report supplies a global and coherent approach making use of all individual and historical data available in order to augment transparency and deliver simulations on real performances to EU pension savers. One has to keep in mind that the diversity of the European pension landscape and the lack of available data complicate the drawing of straightforward conclusions. For instance, most pension funds for the countries under review are offered as defined contribution plans while those in Germany, as of now, and the majority in Belgium are offered as defined benefit plans.

Table GR 9. Yearly Real Returns of Private Pension Products (before taxes)	
Belgium	Pension Funds (IORP [1]), 2000-2016: +1.90% “Assurance Groupe” (Branch 21), 2002-2014: + 1.63% Pension Savings Funds, 2000-2016: +1.70% Life Insurance, Guaranteed, 2002-2014: +2.00%
Bulgaria	Universal Pension Funds, 2002-2016: +1.40% Occupational Pension Funds, 2001-2016: +1,40% Voluntary Pension Funds, 2002-2016: +0.30%
Denmark	Pension funds, 2002-2015: +4.82%
Estonia	Mandatory Pension Funds, 2002-2016: +0.36% Supplementary Pension Funds, 2002-2016: +1,13%
France	Life Insurance, Guaranteed, 2000-2016: +1.94% Life Insurance, Unit-linked, 2000-2016: -0.19% Corporate savings plans, 2000-2016: +0.72%
Germany	Pensionskassen & Pension Funds, 2002-2015: +2.19% Riester Pension Insurance, 2005-2016: +1.61% Rürup Pension Insurance, 2005-2016: +1.63% Personal Pension Insurance, 2000-2016: +2.29%
Italy	Closed Pension Funds, 2000-2016: +1.33% Open Pension Funds, 2000-2016: -0.14%

	PIP With Profits, 2008-2016: +1.09% PIP Unit-Linked, 2008-2016: +0.63%
Latvia	State Funded Pension Funds, 2003-2016: -0.43% Voluntary Private Pension, 2011-2016: +2.06%
Poland	Employee Pension Funds, 2002-2016: +4.13%
Romania	Pillar II Funded Pensions, 2008-2016: +5.32% Voluntary Pension Funds, 2007-2016: +2.79%
Slovakia	Pillar II Pension Funds, 2005-2016: -0.24% Supplementary Pension Funds, 2009-2016: +0.53%
Spain	Pension funds (weighted average), 2000-2016: -0.07%
Sweden	AP7 Occupational pension fund, default option 2000-2016 +8.66% AP7 Occupational pension fund, own choice of other fund or funds 2000-2016 +5.51%
The Netherlands	Pension Funds, 2000 - 2016: +2.84% Life Insurance, 2000 - 2016: -0.32%
United Kingdom	Pension Funds, 2000-2015, +2.6%

Source: BETTER FINANCE Research, BETTER FINANCE Research

[1] Occupational pension funds as per the definition and scope of the EU "Institutions for Occupational Retirement Provision Directive" (IORP).

This update of the original study by BETTER FINANCE highlights an improvement of the real returns of pension savings over the period 2000-2016 as compared to 2002-2011, in the context of upwards equity markets and declining inflation rates. We also tried to extend calculations to the longer period of time that we are considering, from 2000 to 2016, when data were available. Over the long run, real returns were on average quite low and below those of capital markets (equities and bonds).

In France, retirement provision through the widely used life insurance showed positive returns for guaranteed contracts and negative returns for unit-linked ones.

Italy and the United Kingdom are two opposite examples of policy options chosen by governments to tackle the imbalances of pension systems. In Italy, an ambitious reform was implemented by Minister Elsa Fornero under

the Monti government in order to secure the public PAYG system, despite very unfavourable demographic trends. As such, the poor returns of the personal pension plans will have a limited impact on the replacement rates of retirees' income.

By contrast, pensions in the UK are more heavily dependent on pre-funded schemes. The government has implemented "auto-enrolment" to extend the benefits of pension funds to most employees. Here, excessive charges borne by pension fund members have led public authorities to take measures in order to improve transparency and to limit the fees charged by pension providers.

Like in Italy, demographic trends in Germany are very unfavourable and the government ran several reforms to promote private pension savings with the latest reforms aiming mainly at occupational provision but also impacting the continuously criticised Riester through higher allowances.

In Spain, the promotion of occupational and personal pension schemes has only recently been established. Personal pension provisions and pension funds are taxed according to the beneficial EET formula; however, pension disclosures to individuals are broadly inadequate. The 17-year period provides around zero returns in real terms for pension funds.

Only a small minority of Poles participates in employee pension schemes and personal pension products because they have only recently been set up. Those who participated in employees' pension funds benefitted from a very substantial annual real rate of return of about 4%. However, the disclosure policy of pension providers is far from being satisfactory, especially as there is no guarantee: a market downturn would severely impact the wealth of pension fund participants, a risk that few of them may be aware of.

Pension funds in the Netherlands were among the better performers at +2.8% over the long 17-year period, while insurance companies lost -0.3% in real terms over the same period.

The best results for funded pension schemes were recorded in Romania with a strong real return of +5.3% before taxation, but over a 9-year period only. Albeit performing only half as strong as the funded ones, voluntary pensions did also clearly perform positively (+2.8%) over 10 years.

Funded pensions in Slovakia lost in real terms (-0.2%) over a 12-year period while supplementary pensions performed slightly positive at +0.5% over 8 years.

In Bulgaria, universal, occupational and professional pension funds all could record positive real returns between 0.1% and 0.8% supported by the very favourable EEE formula.

In the Baltic States, supplementary pensions could register positive returns (Estonia 1.1% and Latvia 2.0%) before taxation, while funded pensions were close to zero in Estonia and lost in real terms in Latvia.

Recommendations

1. Restore and harmonise relative past performance disclosure for all long-term and retirement savings products:

    - Re-instate standardised disclosure of past performance of "retail" investment products compared to objective market benchmarks (as required up to 2017 for all UCITS investment funds in the UCITS IV Directive and in the KIID Regulation of 2010[36]): long-term historical returns after inflation; after all charges to the investor; and after tax when possible.
    - The length of time of the past performance disclosure must be consistent with the time horizon of the investment product: it currently stands at minimum 10 years for UCITs funds; it should therefore be longer for pension products.
    - Disclosure of total fees and commissions charged to the end investor, both direct and indirect.
    - Disclosure of funding status when relevant.
    - Disclosure of transfer/exit possibilities and conditions, in plain language.
    - Extend the PRIIPs'[37] KID[38] principle (meaning a standardized plain-language and short information document) to all long-term and pension savings products, including pension funds, shares and bonds.

2. Quickly implement the European Commission's "Capital Markets Union" Action Plan of September 2015 in order for *"the European Supervisory Authorities (ESAs) to work on the transparency of long term retail and pension products and an analysis of the actual net performance and fees, as set out in Article 9 of the ESA Regulations*".

[36] But abrogated on 8 March 2017 by the Commission delegated regulation (EU) 2017/653, supplementing Regulation (EU) No 1286/2014 on key information documents for PRIIPs
[37] PRIIPs: Packaged Retail and Insurance-based Investment Products
[38] KID: Key Information Document (the existing summary document for UCITS funds is the "KIID": Key Investor Information Document).

3. The EU should move full speed ahead with and improve its Pan-European Personal Pension Plan (PEPP) proposal to, at least, protect the long-term purchasing power of the life-time savings of EU citizens in the default investment option:

    - with a default option that is really simple (enough so to be subscribed to without advice or related fees), low cost and really safe;
    - with free alternative investment options including direct investments into listed equities and bonds in order to be consistent with the "Capital Markets Union" goals and to allow EU citizens to get a decent long-term return and retirement income;
    - benefiting from an equivalent tax regime, comparable to existing national personal pension products.

4. Simplify, standardise and streamline the range of product offerings:

    - Restrict the use of non-UCITs funds (the 20,000 or so "AIFs") in all packaged long-term and pension products promoted to savers and individual investors.
    - Reduce the excessive number of UCITs on offer in the EU.
    - Ensure the ESAs get and make full use of product intervention powers in order to ban any and all toxic investment products targeted at individual investors.
    - Require for the ESAs to ensure EU individual investors have full access to low fee investment products such as shares, bonds and index ETFs (in line with the CMU initiative of the EU).

5. Establish EU-wide, transparent, competitive and standardised retail annuities markets; and grant more freedom to pension savers to choose between annuities and withdrawals (but after enforcing a minimum threshold for a guaranteed life-time retirement income).

6. Improve the governance of collective schemes: at least half of the schemes' supervisory bodies should be designated directly by the pension schemes' participants.

7. Align the pricing of investment products with the interests of savers, end biased advice at the point of sale and guarantee competent advice on long-term investments, including equities and bonds; more powers to supervisors to ban “retail” distribution of toxic investment products.

8. Grant special treatment through prudential regulations (Solvency II in particular) to all long-term & pension liabilities allowing for an adequate asset allocation.

9. Taxation to incentivise Pan-European long-term retirement savings and investments over consumption and short-term savings: Pan-European products such as ELTIFs and PEPPs will not emerge significantly unless they get the most favourable tax treatment already granted to numerous other nationally sponsored long-term investment products. The FTT (Financial Transactions Tax) should be reviewed in order for it to actually meet its stated goal of taxing the transactions of financial institutions (the largest ones by far being the Forex ones, followed by derivatives) instead of those from the real economy (especially individual ones and those of end-investors in equities and corporate bonds). To this end a FAT (Financial Activities Tax) may be more “fit for purpose”.

10. Basics in terms of financial mathematics (compounding interest rates and returns, annuities) and capital markets (shares and bonds) to be part of school curricula; financial institutions to inform clients on shares and bonds (and not only on fee-laden “packaged” products), and to allow for at least a part of their financial education efforts to be guided by independent bodies.

Pension Savings: The Real Return

2017 Edition

Country Case: Belgium

Introduction

The Belgian pension system is divided into three pillars:

First Pillar

The Pay-as-You-Go (PAYG) pension system consisting of three regimes: one for employees in the private sector, one for self-employed individuals and one for civil servants. The legal age of retirement is 65 years for both women and men. It used to be 60 years for women until 1993, but was progressively increased to reach 65 years in 2010. The Act of 10 August 2015 increases the retirement age imposed by law to the age of 66 years by 2025 and to the age of 67 years by 2030. The net replacement rate from the PAYG system for men with average working wage was 61% for the year of 2014.

Second Pillar

Occupational pension plans are private and voluntary. This pillar exists for both employees and self-employed individuals. Employees can subscribe to occupational pension plans provided either by their employer (company pension plans) or by their sector of activity (sector pension plans). Company pension plans are traditionally dominant in the second pillar in comparison to sector pension plans. Self-employed individuals can decide for themselves to take part in supplementary pension plans.

An employer can set up a company pension plan for all its employees, for a group of employees or even for a single employee. In the case of sector pension plans, collective bargaining agreements (CBAs) set up the terms and conditions of pension coverage. Employers must join sector pension

plans, unless labour agreements allow them to opt out. Employers who decide to opt out have the obligation to implement another plan providing benefits at least equal to those offered by the sector.

Company and sector pension plans can be considered as “social pension plans” when they offer a solidarity clause that provides employees with additional coverage for periods of inactivity (e.g. unemployment, maternity leave, illness). Notably, social pension plans are becoming less and less prevalent, possibly as a result of the relatively high charges associated with these plans in comparison to pension plans without a solidarity clause.

Occupational pension plans are managed either by an Institution for Occupational Retirement Provision (IORP) or by an insurance company. Insurance companies predominantly manage them.

The Supplementary Pensions Act reform entered into force as of 1 January 2016. It amended the Act of 28 April 2003 by introducing the alignment of the supplementary pension age and the legal pension age (respectively 65, 66 in 2025 and 67 in 2030). Supplementary pension benefits will be paid at the same time as the legal pension’s effective start. Previously, some occupational pension plans allowed early liquidation: lump sum payments or annuities from supplementary pension could be paid from the age of 60. Conversely, employees who decide to postpone their effective retirement when having reached the legal pension age, have the possibility to claim their supplementary pension or to continue to be affiliated to the pension scheme until their effective retirement.

Moreover many supplementary pension plans provided financial compensations to offset the income loss employees may have when ending their career prematurely. As of 1 January 2016, all these existing beneficial anticipation measures were abolished. These existing “advance mechanisms” can still be applied to affiliates who reached the age of 55 years on or before 31 December 2016.

The number of employees covered by occupational pension plans increased as a result of changes in the law in 2003, which promoted the development

of sector pension plans. At the beginning of 2016, 3.4 million Belgians were covered by occupational pension plans: 2.9 million employees were covered either by their company or by their sector of activity and 370,787 self-employed individuals were covered by supplementary pension plans.[39]

Third Pillar

The third pillar consists in providing Belgians with individual private and voluntary pension products, which allow them to have tax reliefs from their contributions. There are two types of available products for subscription: pension savings products managed either by asset management companies or by life insurance companies and long-term savings products managed by insurance companies. This pillar is significant in Belgium when compared to other EU member states. The tax rate applied to accrued benefits from pension savings products (funds or insurance) was lowered from 10% to 8% in 2015, in order to encourage savings in the framework of the third pillar.[40]

Pension Vehicles

Pillar II: Occupational pension plans

The second pillar refers to occupational pension plans designed to raise the replacement rate. Savings in these plans are encouraged by tax incentives. The second pillar is based on the capitalisation principle: pension amounts result from the capitalisation of contributions paid by the employer and/or employee in the plan or by self-employed individuals. There exist three types of occupational pension plans:

- Company pension plans;
- Sector pension plans;
- Supplementary pension plans for self-employed individuals.

[39] Source: DB2P, Annex from the press release, 6 December 2016. The DB2P manages the supplementary pensions database. It collects data related to supplementary pension plans such as individualised acquired pension rights of employees, self-employed individuals and civil servants.

[40] The lowering of the tax rate does not apply to long-term savings products.

In the following section devoted to occupational pension plans, available information reported in tables BE1 to BE4 were provided by the Financial Services and Markets Authority (FSMA), Assuralia and the National Bank of Belgium (NBB).

FSMA annually reports detailed information on Institutions for Occupational Retirement Provision (IORP), as non-insurance regulated occupational pensions are called in EU Law. Every two years, it also reports detailed information on sector pension plans and supplementary pension plans for self-employed individuals. Information on "*Assurance Groupe*" contracts was reported by Assuralia (for Branch 21 contracts) and by the National Bank of Belgium (for Branch 23 contracts).

Data for the whole year 2016 are missing as the last information reported by FSMA on sector pension plans and supplementary pension plans for self-employed individuals referred to the whole year 2015. Annual statistics for the whole year 2016, for IORPs and "*Assurance Groupe*" occupational pension plans will unfortunately be published only at the end of 2017.

Management of occupational pension plans

The management of occupational pension plans can be entrusted to an Institution for Occupational Retirement Provision (IORP) or to an insurance company.

Institutions for Occupational Retirement Provision (IORP)

In 2015, 198 occupational pension plans were managed by an IORP. The number of affiliates to an IORP increased to 1,513,279 in 2015. This is mainly due to an increase in the number of affiliates to sector pension plans (1,120,157 against 1,088,565 in 2014).

In 2015, affiliates to sector pension plans through an IORP still represented the largest part in the number of affiliates (72%) but only 17% of total reserves (€3.8 billion). Company pension plans represented 74% of total reserves (€16.1 billion) with 30% of affiliates. Three supplementary pension

plans for self-employed individuals (€2 billion of reserves) were managed by IORPs.

"Assurance Groupe" (Branch 21 and Branch 23 contracts)

Occupational pension plans are predominantly managed by insurance companies. Such pension plans are called "*Assurance Groupe*" contracts and can be divided into two different types of contracts:

- Branch 21 contracts offer guaranteed capital. All sector pension plans and supplementary pension plans for self-employed individuals are managed through this type of contract. Most of company pension plans are also managed through Branch 21 contracts rather than Branch 23 contracts.

- Branch 23 contracts are unit-linked contracts and are invested mainly in investment funds and equity markets. Their returns depend on their portfolio composition. In the second pillar, only company pension plans are managed through Branch 23 contracts. In 2015, these contracts represented no more than €2.1 billion reserves, being 3.2% of the total reserves managed within "*Assurance Groupe*" contracts (see Table BE1).

Table BE1. Total reserves in pillar II (€ billion)[41]					
	IORP (1)	"Assurance Groupe": Branch 21 contracts (2)	"Assurance Groupe": Branch 23 contracts (3)	Total "Assurance Groupe": (2)+(3)	Total (1)+(2)+(3)
2004	11.7	29.9	na	na	**41.6**
2005	13.4	30.6	1.6	32.2	**44.0**
2006	14.3	33.5	1.7	35.2	**47.8**
2007	14.9	37.3	1.7	39.0	**52.2**
2008	11.1	38.2	1.4	39.6	**49.3**
2009	11.2	41.2	1.8	43.0	**52.4**
2010	13.9	44.7	1.8	46.4	**58.5**
2011	14.0	48.6	1.6	50.2	**62.9**
2012	16.4	52.7	1.7	54.4	**70.8**
2013	18.0	56.0	1.9	57.9	**75.9**
2014	20.7	60.2	2.1	62.3	**83.0**
2015	21.9	63.9	2.1	66.0	**87.9**

Sources: "Assuralia", NBB, BETTER FINANCE research, FSMA

Description of occupational pension plans

Sector pension plans[42]

Sector pension plans are supplementary pension commitments set up on the basis of collective bargaining agreements and concluded by a joint committee or joint sub-committee. In the joint committee/sub-committee, a sectorial organiser responsible for the pension commitment is appointed.

Three quarters of sector pension plans are managed by insurance companies through Branch 21 contracts. These contracts represented €1.93 billion reserves, being 3% of the total reserves managed through Branch 21 contracts within the second pillar in 2015.

[41] Table 1 represents reserves managed only within the second pillar. Data does not include the insurance dedicated to managing directors that represented around €3.6 billion of assets under management in 2015.

[42] All data provided comes from plans for which information is available.

However, around two thirds of sector pension plan reserves (€ 3.36 billion) are managed by IORPs, which represented 15% of the total reserves managed by IORPs in 2015.

Table BE2. Total reserves in sector pension plans (€ billion)[43]			
	IORP	"Assurance Groupe" (Branch 21)	Total
2005	0.4	0.1	0.6
2007	1.4	0.7	2.1
2009	1.5	0.8	2.3
2010	1.6	0.9	2.6
2011	2.0	1.1	3.1
2012	2.5	1.3	3.8
2013	2.7	1.5	4.3
2014	2.5	1.6	4.1
2015	3.4	1.9	5.3

Source: FSMA

Private Supplementary Pensions for self-employed individuals (PLCI)

In 2004, *Pension Libre Complémentaire pour Indépendants* (PLCI) – Private Supplementary Pensions for self-employed individuals – were integrated into the Supplementary Pensions Act. PLCI enable self-employed individuals to get a supplementary and/or a survival pension at their retirement.

Since 2004, self-employed individuals have the choice to contribute to supplementary pension plans. Moreover, they can henceforth choose the pension provider, either an IORP or an insurance company. They can switch from one provider to another during the accumulation period. In 2015, self-employed individuals had the choice between 122 pension plans managed by three IORPs and 21 insurance companies.

Like employees, self-employed individuals can also supplement their PLCI with several solidarity benefits, called social conventions. These

[43] Data for 2006 and 2008 was not available. FSMA publishes a report on sector pension funds every two years.

conventions offer benefits such as the funding of the PLCI in the case of inactivity and / or the payment of an annuity in the case of income loss. They can save up to 8.17% of their income, without exceeding a maximum annually indexed amount (€3,127.24 in 2016). These ceilings can be increased up to 9.40% and €3,598.05 when a social convention has been subscribed to.

Table BE3. Total reserves in PLCI (€ billion)			
		"Assurance Groupe"	
	IORP	(Branch 21)	Total
2006	na	na	**2.9**
2007	na	na	**3.3**
2008	na	na	**3.5**
2009	1.6	2.4	**4.0**
2010	1.7	2.8	**4.5**
2011	1.4	3.7	**5.1**
2012	1.6	4.1	**5.7**
2013	1.6	4.6	**6.2**
2014	1.7	5.1	**6.8**
2015	2.0	5.4	**7.4**

Sources: FSMA, BETTER FINANCE calculations

Company pension plans

Company pension plans are predominant within the second pillar. However, there is no aggregated and public, available information on this type of plan. Company pension plan reserves managed by IORPs and insurance companies ("Assurance Groupe" contracts) are assessed from data based on Tables BE1, BE2 and BE3.

Table BE4. Total reserves in company pension plans (€ billion)					
	IORP (1)	"Assurance Groupe": Branch 21 contracts (2)	"Assurance Groupe": Branch 23 contracts (3)	Total "Assurance Groupe" (2) +(3)	Total (1)+(2)+(3)
2009	8.1	38.0	1.8	39.8	**47.9**
2010	10.6	41.0	1.8	42.8	**53.4**
2011	10.6	43.9	1.6	45.5	**56.0**
2012	12.3	47.3	1.7	49.0	**61.4**
2013	13.7	49.9	1.9	51.8	**65.5**
2014	16.5	53.5	2.1	55.6	**72.1**
2015	16.5	56.6	2.1	58.7	**75.2**

Sources: "Assuralia", FSMA, NBB, BETTER FINANCE research

Pillar III: Description of personal pension savings products

The third III refers to private pension plans contracted on an individual and voluntary basis. The Belgian market for personal pension plans is divided into two types of products:

1. Pension savings products, which can take two different status:
   - A pension savings fund;
   - A pension savings insurance (through individual Branch 21 contracts).
2. Long-term savings products consist mainly in a combination of Branch 21 and Branch 23 contracts.

Belgians can benefit from a tax relief based on their contributions made to pension savings products or long-term savings products. At their retirement, individuals are free to choose how to quit the products: lump sum payment, periodic annuities or life annuity from invested benefits.

At the end of September 2016, 1,544 million Belgians were covered by pension savings funds. This number is 3% higher than in 2015. When adding up pension savings insurance contracts and long-term savings products,

between 60% and 65% of the active population is covered by pension plans within the third pillar[44].

Pension savings funds

The Belgian pension savings funds market remains relatively concentrated since the launch of the first funds in 1987. The market has grown significantly in the past few years. 19 products were available for subscription at end-2016. The size of personal pension savings funds is close to the size of funds managed by IORPs in the second pillar. These products hit a record high, with €226 million net sales over 2016 and €18.0 billion net assets under management at the end of 2016.

The Belgian market of pension savings funds has remained relatively concentrated since the launch of the first funds in 1987. The market has grown significantly in the past few years. Since November 2015, three new pension savings funds are available for subscription. These three new funds are mainly invested in other pension savings funds. 19 products were available for subscription at the end of 2015 and the net assets under management continued to grow significantly.

[44] BeAma, Press Release, 28 November 2016.

Table BE5. Net assets under management in pension savings funds (€ billion)	
2003	7.4
2004	8.7
2005	10.3
2006	11.5
2007	11.8
2008	9.0
2009	11.1
2010	12.0
2011	11.2
2012	12.6
2013	14.4
2014	15.6
2015	16.9
2016	18.0

Source: BeAMA

Pension savings funds are constrained by quantitative limits applied to their investments:

- A maximum of 75% in equity;
- A maximum of 75% in bonds;
- A maximum of 10% in euros or any currency of a country of the European Economic Area cash deposits;
- A maximum of 20% in foreign currency deposits.

In practice, the majority of funds are predominantly exposed to the equity market. Their return is entirely variable and depends on the returns of the underlying assets and fees.

Pension savings insurance / Long-term savings products

Belgians can save for their retirement through life insurance products within two different frameworks: a pension savings insurance product (Branch 21 contracts) or a long-term savings product (Branch 21 and Branch 23 contracts combined). Assuralia reports annual statistics on contributions and reserves managed in individual life insurance products. Data for the whole year 2016 are unfortunately missing and will be published only at the end of 2017.

It also reports data on contributions and reserves managed through pension savings insurance and long-term savings products within the third pillar. In 2015, reserves managed within the framework of the third pillar represented 20.6% of total individual life-insurance reserves. For long-term savings products, there is no available information on the breakdown between Branch 21 and Branch 23 contracts (see Table BE6).

Table BE6. Contributions and reserves in individual life-insurance products within the third pillar in 2015 (€ billion)

	Contributions	Reserves	Pillar III reserves in % of total individual life insurance reserves
Pension savings insurance (Branch 21 contracts)	1.2	13.5	9.30%
Long-term savings products (Branch 21 and Branch 23 contracts combined)	1.2	16.3	11.30%
Total	**2.4**	**29.8**	**20.60%**

Source: "Assuralia"

Charges

Pillar II: Occupational pension plans

Charges in IORPs

There is no general data or available information on IORP charges. The only available information was for sector pension funds managed by IORPs:[45] Operating expenses ranged from 0.01% to 1.02% of assets, with an average of 0.15% in 2015 (0.16% in 2013 and 0.17% in 2011).

Company pension funds managed by IORPs are smaller than sector pension funds and they are, therefore, likely to be more costly.

Charges in "Assurance Groupe" (Branch 21 contracts)

The only historical information on administration and management costs, as well as commissions, on a yearly basis was for "*Assurance Groupe*" contracts (Branch 21), reported by Assuralia.

[45] FSMA, Report on the sector of IORP in 2015.

Table BE7. Charges in % of reserves in "Assurance Groupe" contracts		
	Administrative & management costs (% of reserves)	Commissions (% of premiums)
2002	1.2	1.2
2003	1.0	1.3
2004	0.8	1.2
2005	0.9	1.4
2006	0.9	1.2
2007	0.8	1.4
2008	0.8	1.5
2009	0.8	1.3
2010	0.7	1.5
2011	0.7	1.5
2012	0.7	1.5
2013	0.7	1.5
2014	0.7	1.6
2015	0.6	1.6

Sources: "Assuralia", BETTER FINANCE calculations

Many insurance companies apply fees on premiums. In the case of sector pension plans, the level of fees varies considerably, ranging from 0.5% to 5% of premiums. Half of the plans managed by insurance companies levied charges lower than 2% of premiums in 2015. The level of fees was below 1% for 15% of plans. Nevertheless, 13% of plans applied charges above 5% of premiums.[46]

In Branch 23 Group Insurances ("*Assurance Groupe*"), charges can be higher: in addition to contract fees other fees related to underlying "units" (typically investment funds) may apply. For more details, the reader can refer to the case analysis in the annex.

[46] Source: FSMA, Report on sector pensions plans, June 2017.

Pillar III: Personal pension savings products

Pension savings funds

Historical data on charges for pension savings funds is difficult to obtain for investors. Key Investor Information Documents (KID) must provide investors with information on all charges related to the funds on a yearly basis, but for UCITS only, not for other investment funds.

Using the prospectus of available pension savings funds for subscription in the Belgian market, the following average yearly charges were calculated in 2016:

- Entry fees: 2.81%[47] of initial investment;
- Management fees: 0.93% of total assets under management;
- Total Expenses Ratio represented on average 1.27% of total assets under management;
- No exit fees.

The following table summarises the Total Expenses Ratio (TER) of 19 available funds for subscription in the Belgium market from 2013 to 2016. The average TER slightly decreased due to the lowering in some fund TER in 2016.

[47] Morningstar & the website of the different fund providers

Table BE8. Historical Total Expense Ratio of pension savings funds (% of assets under management)				
	2013	**2014**	**2015**	**2016**
Accent Pension Fund	1.31	1.30	1.31	1.31
Argenta Pensioenspaarfonds	1.35	1.36	1.34	1.34
Argenta Pensioenspaarfonds Defensive	1.38	1.38	1.35	1.35
Belfius Pension Fund High Equities Cap	1.35	1.33	1.32	1.32
Belfius Pension Fund Low Equities Cap	1.18	1.16	1.60	1.16
Belfius Pension Fund Balanced Plus	-	-	1.63	1.61
BNP Paribas B Pension Balanced	1.24	1.29	1.25	1.25
BNP Paribas B Pension Growth	1.24	1.28	1.26	1.25
BNP Paribas B Pension Stability F Cap	1.23	1.28	1.25	1.25
Hermes Pension funds	1.06	1.08	1.07	1.07
Interbeurs Hermes Pensioenfonds	1.01	1.03	1.03	1.03
Metropolitan-Rentastro Growth	1.24	1.28	1.26	1.25
Pricos	1.25	1.27	1.25	1.25
Pricos Defensive	1.29	1.25	1.25	1.24
Record Top Pension Fund	1.35	1.32	1.32	1.32
Star Fund	1.09	1.09	1.17	1.18
Crelan pension funds Stability	-	-	1.29	1.29
Crelan pension funds Growth	-	-	1.29	1.29
Crelan pension funds Balanced	-	-	1.29	1.29
Total Expenses Ratio (simple average)	**1.24**	**1.25**	**1.29**	**1.27**

Source: BETTER FINANCE research[48]

[48] Own calculations based on Morningstar & the website of the different fund providers.

Pension savings insurance (Branch 21 contracts) / Long-term savings products (Branch 21 and Branch 23 contracts combined)

Assuralia provides us with historical data on administration and management costs as well as entry fees and other commissions paid for individual life insurance contracts. Data, for Branch 23 individual life insurance contracts, most likely do not include fees charged on the underlying units (investment funds).[49]

Table BE9. Administration and management costs and commissions for individual life insurance contracts

	Branch 21		Branch 23	
	Administrative and management costs (% of reserves)	Commissions (% of premiums)	Administrative and management costs (% of reserves)	Commissions (% of premiums)
2002	1.2	4.8	na	2.5
2003	1.8	3.7	na	3.0
2004	1.4	3.6	na	2.7
2005	0.7	3.3	0.4	2.0
2006	0.7	4.7	0.3	3.4
2007	0.6	4.6	0.3	4.2
2008	0.7	5.4	0.4	5.4
2009	0.6	5.8	0.3	5.6
2010	0.5	5.7	0.3	4.8
2011	0.5	6.0	0.3	4.6
2012	0.5	6.6	0.3	2.9
2013	0.6	8.8	0.3	4.8
2014	0.6	7.6	0.4	5.1
2015	0.5	8.6	0.4	4.9

Sources: "Assuralia", BETTER FINANCE calculations

[49] The reader can refer to the case analysis in the annex.

Taxation

Pillar II: Occupational pension plans

Employees pay two taxes on their benefits:

- A solidarity contribution varying up to a maximum of 2% of the benefits depending on the retiree's income;
- An INAMI ("*Institut National d'Assurance Maladie-Invalidité*") contribution of 3.55% of the benefits.

In addition, benefits from occupational pension plans are taxed depending on how they are paid out:

- A lump sum payment;
- Periodic annuities;
- A life annuity issued from invested benefits.

Lump sum payment

In the case of a lump sum payment, the taxation of benefits depends on the beneficiary's age and who contribute to the plans (employer or employee). Since July 2013, the rules detailed in Table BE10 are applied to taxation on benefits from occupational pension plans. Before July 2013, benefits from employer's contributions were taxed at the flat rate of 16.5% regardless of the beneficiary's age at the time of the payment of the benefits.

Table BE10. Taxation of benefits from occupational pension plans			
Benefits paid before the legal pension		**Benefits paid at the same time as the legal pension**	
Benefits from employee's contribution	**Benefits from employer's contributions**	**Benefits from employee's contribution**	**Benefits from employer's contributions**
16.5% for contributions made before 1993	60 years old: 20%	16.5% for contributions made before 1993	10% if the employee remains employed until legal pension age (65 years old)
10% for contributions made since 1993	61 years old: 18%	10% for contributions made since 1993	
	62-64 years old: 16.5%		
+ local tax	+ local tax	+ local tax	+ local tax
Source: "Assuralia", Wikifin.be			

The local tax can vary from 0% to 10%, with an average of 7%.

Periodic annuities[50]

Periodic annuities are considered to be an income and are taxed at the applicable progressive personal income tax rate.

Converting the accumulated capital into a life annuity

An employee can convert the lump sum payment into a life annuity. In this case, the INAMI contribution and the solidarity contribution have to be paid

[50] For pillar II, employees can choose to redeem capital in a lump sum payment or in annuities. In practice, few people choose annuities and most employees redeem their product in a lump sum payment.

according to the rules applied to the lump sum payment. Then the retiree has to pay a withholding tax of 15% on the annuity each year.

Pillar III: Personal pension savings products

Pension savings products (fund or life insurance contracts)

Contributions invested in pension savings products (fund or insurance) are deductible from the income tax, subject to a rather low annual ceiling (€940 in 2017). Since 2012, the tax relief is equal to 30% of the contributions, regardless of the taxpayer's income. The tax relief of pension savings products is "stand-alone". Taxpayers can receive tax relief for only one contract even if they make contributions to several products.

Since 1 January 2015, the final taxation on the accumulated capital was lowered from 10% to 8% and still depends on the beneficiary's age at the time of the subscription. From 2015 onwards, a part of the taxation is levied in advance (except in case of early retirement before the age of 60). From 2015 to 2019, the pension reserves (per 31 December 2014) are subject to a tax of 1% each year, which constitutes an advance on the final tax due.

Table BE11. Taxation of pension savings products (funds and insurance)	
Subscription to pension savings products before the age of 55	
Benefits paid before the age of 60	The accumulated capital is taxed under the personal income tax system.
At the age of 60	• 8% of the accumulated capital is levied (excluding participation to annual earnings); • The taxation is based on a theoretical return of 4.75% ;[51] • The saver can continue investing and enjoying tax relief until the age of 64; • The accumulated capital is no longer taxed after the 60th birthday of the beneficiary.
Subscription to pension savings products at the age of 55 or after	
Benefits paid before the age of 60	The accumulated capital is taxed under the personal income tax system.
Benefits paid between the age of 60 and 64	The accumulated capital is taxed at the rate of 33%.
At the age of 65 or after (i.e. when the contract reaches its 10th birthday)	• 8% of the accumulated capital is levied (excluding participation to annual earnings); • The taxation is based on a theoretical return of 4.75%; • To benefit from this lower taxation, the beneficiary has to stay at least 10 years in the fund and make at least five contributions.
Sources: "Assuralia", Wikifin.be	

Long-term savings products (life insurance contracts)

The maximum amount of tax relief based on contributions invested in long-term savings products depends on the level of the saver's yearly earnings, without exceeding the ceiling of €2,260 in 2017. However, the tax relief is determined jointly for long-term savings products and mortgage deductions. If a saver already receives a tax relief for a mortgage, it may be

[51] The capital accumulated from contributions made before 1993 is taxed by considering a theoretical return of 6.25%. For contracts subject to this taxation, the amount of taxation was levied in advance in 2012.

impossible to obtain a further tax relief for life insurance products under the third pillar.

The same rules of taxation as those of pension savings products (fund or insurance) apply to long-term savings products. The taxation depends on the beneficiary's age at the time of subscription (before or after 55 years) (see Table BE11).

However, the taxation differs in two points:

- The pension reserves are taxed by considering the real return of the long-term savings products over the period of holdings instead of a theoretical return of 4.75%;
- The lowering of the tax rate to 8% does not apply to the capital accumulated through long-term savings products, which remain taxed at 10%.

Pension Returns

Pillar II: Occupational pension plans

The returns of occupational pension plans depend on how they are managed, either by an IORP or by an insurance company.

From 2004 to 2015, all DC plans managed either by IORP or insurance companies through Branch 21 contracts were required to provide an annual minimum return of 3.75% on employees' contributions and 3.25% on employers' contributions. The Supplementary Pensions Act reform entered into force on 1 January 2016, in order to ensure the sustainability and social character of the supplementary pensions. This implemented measures on the guaranteed return that was lowered to 1.75% for both employee and employer contributions. Its level is now set each year according to economic rules taking into account the evolution of government bond yields in the future:

- The new guaranteed return must be within the range of 1.75% to 3.75%;

- The new guaranteed return represents 65% of the average of 10-year government bonds rates over 24 months, rounded to the nearest 25 basis points to prevent it from fluctuating too frequently[52].

In 2015, among the 198 pension plans managed by an IORP, 86 had a promise of returns (DB plans), 30 were DC plans and 82 were hybrid plans (Cash Balance, DC + rate). While newly opened plans are always DC plans, the largest remaining part of assets are still managed in plans offering promises of returns.

The real returns after taxation of occupational pension plans were calculated under the following assumptions:

- The employee claims his supplementary pension at the same time as the legal pension and remained employed until the legal age (65 years old);
- The benefits are paid as a lump sum payment;
- Solidarity contributions of 2% of benefits and the INAMI contribution of 3.55% of benefits are levied;
- Only the employer paid contributions.
- In addition to an average local tax of 7%, a flat tax rate of 10% applied to the final benefits.

Occupational pension plans managed by IORPs

PensioPlus[53], the Belgium's occupational pension plan association reports an average return of 5.76% in 2016. This represents the gross average weighted returns after charges of occupational pension plans that participated in the annual financial and economic survey of PensioPlus[54] in 2016.

[52] The rate of 65% could be increased to 75% in 2018 and to 85% in 2020 according to the FSMA decision.
[53] The Belgian Association of Pension Institutions (BAPI) changed its name in 2015 to PensioPlus.
[54] IORP participated in the annual PensioPlus' survey. They represented 14.422 billion euros under management (60% of the market share).

Table BE12. Returns of occupational pension plans managed by IORPs (%) (2000-2016)			
	Nominal return before charges, tax and inflation	Nominal return after charges, before tax and inflation	Real return after charges and inflation, before tax
2000	0.9	-0.1	-3.0
2001	-4.2	-5.1	-6.9
2002	-11.0	-11.9	-13.1
2003	10.4	9.3	7.5
2004	9.9	8.9	6.8
2005	16.0	15.0	11.9
2006	10.3	9.3	7.1
2007	2.2	1.4	-1.7
2008	-17.1	-17.7	-19.9
2009	16.6	15.7	15.3
2010	10.3	9.5	5.9
2011	0.0	-0.7	-3.8
2012	12.9	12.1	9.8
2013	7.5	6.7	5.5
2014	12.7	11.9	12.3
2015	5.1	4.4	2.9
2016	6.5	5.8	3.5

Sources: PensioPlus, BETTER FINANCE calculations

Table BE13. Annual average return of occupational pension plans managed by IORPs (%) (2000-2016)	
Nominal return before charges, tax and inflation	4.8
Nominal return after charges, before tax and inflation	4
Real return after charges and inflation, before tax	1.9
Real return after charges, tax and inflation	1.5

Sources: PensioPlus, BETTER FINANCE calculations

Over a 17-year period (2000-2016), occupational pension plans managed by IORPs experienced negative nominal returns before charges three times: in 2001, 2002 and 2008. Over the period 2000-2016, the annual average return after charges, tax and inflation was positive (1.46%). PensioPlus reported the average asset allocation of IORP at end-2016, as follows: 39% in equities, 45% in fixed income securities, 6% in real estate, 4% in cash and 6% in other asset classes. With the decrease in the return of fixed income assets, the proportion of equities increased from 34% in 2014 and 2015 to 39% and represented a significant proportion of assets when compared to other countries.

Occupational pension plans managed by insurance companies (Branch 21 contracts)[55]

Assuralia annually reports net returns after charges in percentage of the total reserves. Statistics for the whole year 2015 were published in November 2016. Contrary to reports published in previous years, this report did not contain available information on the returns of "*Assurance Groupe*" Branch 21 contracts. We were thus unable to update this information for the whole year 2015. Nevertheless, FSMA reported a return of 3.12% for sector pension funds managed through "*Assurance groupe*"

[55] Assuralia does not provide information on collective Branch 23 contracts ("Assurance Groupe").

contracts in 2015.[56] We have formally requested this information to Assuralia, but have not received any response at the time of printing. The reader can refer to "Private Pensions: The Real Returns 2016 Edition" to obtain information on returns from 2002 to 2014.[57] Over a 13-year period (2002-2014), Branch 21 "Assurance Groupe" occupational pension plans experienced a positive annual average return over of 2%. "*Assurance Groupe*" Branch 23 occupational pension plans seem to have suffered negative real returns over the last 15 years.[58]

Table BE14. Returns of "Branch 21" occupational pension plans managed by insurance companies (%)

	Nominal return before charges, tax and inflation	Nominal return after charges, before tax and inflation	Real return after charges and inflation, before tax
2002	5.4	4.1	2.5
2003	6.3	5.3	3.7
2004	6.3	5.4	3.4
2005	6.8	5.8	3.2
2006	6.7	5.7	3.3
2007	6.6	5.7	3.8
2008	2	1.2	-3.2
2009	5.4	4.6	4.6
2010	5.3	4.5	2.2
2011	4	3.3	-0.1
2012	5.4	4.6	1.9
2013	5.4	4.7	3.5
2014	5.5	4.8	5.2

Sources: "Assuralia", BETTER FINANCE calculations

[56] FSMA, Report on sector pension funds, June 2017.
[57] The reader can refer to "Private Pensions: The Real Returns 2016 Edition", tables BE14. to BE16.
[58] See Annex: Case analysis of a Branch 23 "Assurance Groupe" occupational pension plan.

Table BE15. Annual average return of "Branch 21" occupational pension plans managed by insurance companies (2002-2014) (%)	
Nominal return before charges, tax and inflation	5.5
Nominal return after charges, before tax and inflation	4.6
Real return after charges and inflation, before tax	2.6
Real return after charges, tax and inflation	2.0

Source: "Assuralia", BETTER FINANCE calculations

Pillar III: Personal pension savings products

Pension savings funds

The Belgian Asset Management Association (BeAMA) provides quarterly data on the annual average returns of pension savings funds. The most recent data was on an annual basis at end-2016.

Table BE16. Annual average returns of pensions savings funds			
Over 1 year	**Over 3 years**	**Over 10 years**	**Over 25 years**
2.9	6.2	3.0	6.9

Source: BeAMA

These average returns were calculated based on the average returns of all available funds in the market, after expenses but before taxation and inflation.

Annual returns are also available in the prospectus of each pension savings fund provided by the asset management company that commercialises the fund. In general, there is no available information on returns before 2002 in the fund prospectuses. The following table displays the average return of all available funds for subscription in the Belgian market from 2000 to 2016.

From 2013 to 2016, TER expressed as a percentage of total assets under management were collected and were used in returns calculations.

However, there is no historical data for TER before 2013. Over the whole period from 2000-2012, TER from 2013 were used and assumed to remain stable.

Table BE17. Returns on pension savings funds after expenses, inflation and taxation (%)			
	Nominal return before charges, tax and inflation	**Nominal return after charges, before tax and inflation**	**Real return after charges and inflation, before tax**
2000	-2.8	-4.0	-6.8
2001	-3.3	-4.5	-6.3
2002	-13.4	-14.5	-15.6
2003	16.0	14.6	12.8
2004	21.3	19.8	17.5
2005	18.7	17.2	14.1
2006	11.0	9.6	7.4
2007	3.8	2.5	-0.6
2008	-24.7	-25.7	-27.6
2009	19.6	18.2	17.8
2010	8.3	7.0	3.5
2011	-4.1	-5.3	-8.2
2012	12.8	11.4	9.1
2013	12.8	11.4	10.1
2014	8.6	7.2	7.7
2015	9.6	8.2	6.7
2016	4.2	2.9	0.7

Sources: BeAma, Morningstar, BETTER FINANCE calculations

Table BE18. Annual average return of pension savings funds (2000-2016) (%)	
Nominal return before charges, tax and inflation	5
Nominal return after charges, before tax and inflation	3.7
Real return after charges and inflation, before tax	1.7
Real return after charges, tax and inflation	1.4

Source: BeAma, Morningstar, BETTER FINANCE calculations

Pension savings funds within the third pillar experienced negative nominal returns from 2000 to 2002, as well as in 2008 and 2011. Unlike occupational pension plans, these pension savings funds are not obliged to pay a guaranteed return to retirees. Over the 17-year period (2000-2016), they delivered relatively similar nominal returns to occupational pension plans managed by IORPs. Benefits are taxed at a flat rate of 8%[59], considering an annual return of 4.75% during the accumulation phase, irrespective of the pension savings fund returns.

Pension savings insurance (Branch 21 contracts) and long-term savings products (Branch 23 contracts)

In order to save for their retirement, Belgian can subscribe to pension savings insurance or to long-term savings products. Pension savings insurance consists in investing in individual life-insurance Branch 21 contracts with a guaranteed capital. Long-term savings products combine Branch 21 contracts and unit-linked Branch 23 contracts. Assuralia reports net returns after charges in percentage of the total reserves managed through Branch 21 and Branch 23 contracts. This information gives an insight into returns of reserves invested within the third pillar. However, we

[59] To calculate the taxation, the following assumptions are made: the saver subscribes to the product before the age of 55 and claims for his capital at 60 years old. The tax flat rate of 8% is applied to accrued benefits in 2016. In 2015, 1% of the accrued benefits as of 31 December 2014 was levied and then deduced from the tax allowance calculated in 2016.

were unable to update returns for the whole year 2015 as there was no available information on the annual data published by Assuralia. We have formally requested this information to Assuralia, but have not received any response at the time of printing. The reader can refer to "Private Pensions: The Real Returns 2016 Edition" to have information on returns from 2002 to 2014.[60] Over the whole period from 2002-2014, the annual average return remained positive to 1.67% for Branch 21 contracts and to 1.30% for Branch 23 contracts.

Table BE19. Returns of individual life-insurance Branch 21 contracts (%)

	Nominal return before charges, tax and inflation	Nominal return after charges, before tax and inflation	Real return after charges and inflation, before tax
2002	4.0	2.6	1.1
2003	5.6	3.8	2.2
2004	6.3	4.8	2.8
2005	6.3	5.4	2.8
2006	5.9	5.1	2.7
2007	6.0	5.2	3.3
2008	0.8	0.1	-4.2
2009	4.9	4.3	4.3
2010	4.6	4.0	1.7
2011	3.0	2.5	-0.9
2012	5.0	4.4	1.8
2013	4.7	4.1	2.9
2014	**5.8**	**5.2**	**5.6**

Sources: "Assuralia", BETTER FINANCE calculations

[60] The reader can refer to "Private Pensions: The Real Returns 2016 Edition", tables BE19. to BE22.

Table BE20. Annual average return of individual life-insurance Branch 21 contracts (2002-2014) (%)	
Nominal return before charges, tax and inflation	4.8
Nominal return after charges, before tax and inflation	4.0
Real return after charges and inflation, before tax	2.0
Real return after charges, tax and inflation	1.7

Sources: "Assuralia", BETTER FINANCE calculations

Branch 23 contracts experienced negative nominal and real returns in 2008 and 2011.

Unfortunately, there is no available information on return for 2015 and 2016.

Table BE21. Returns of individual Branch 23 contracts[61] (%)			
	Nominal return before charges, tax and inflation	**Nominal return after charges, before tax and inflation**	**Real return after charges and inflation, before tax**
2005	11.9	11.5	8.5
2006	7.5	7.1	4.9
2007	1.6	1.3	-1.6
2008	-18.2	-18.5	-20.6
2009	13.3	12.9	12.6
2010	7.5	7.1	3.6
2011	-2.6	-2.9	-5.9
2012	9.4	9.1	6.9
2013	5.9	5.6	4.4
2014	8.3	7.9	8.3

Sources: Assuralia, BETTER FINANCE calculations

61

In our calculations, we considered that benefits from Branch 21 contracts were taxed like pension savings schemes and a flat tax rate of 10%[62] was applied to the accrued benefits from Branch 23 contracts.

Table BE22. Annual average return of individual life-insurance Branch 23 contracts (2005-2014) (%)	
Nominal return before charges, tax and inflation	4.1
Nominal return after charges, before tax and inflation	3.7
Real return after charges and inflation, before tax	1.6
Real return after charges, tax and inflation	1.3

Sources: "Assuralia", BETTER FINANCE calculations

62

Conclusions

Belgians are encouraged to save for their retirement in private pension vehicles. In 2003, the implementation of the Supplementary Pensions Act defined the framework of the second pillar for sector pension plans and supplementary pension plans for self-employed individuals. The number of employees covered by occupational pension plans keeps rising as well as the number of self-employed individuals covered by supplementary pension plans.

Annual minimum guaranteed returns on employers and employees contributions defined in 2003 (respectively 3.75% and 3.25 %) were no longer suitable for insurance companies. These returns did not reflect the current market situation, given the low level of Belgium government bonds yields and market interest rates on investment grade bonds. Measures to guarantee the sustainability and social character of the supplementary pensions were enforced in January 2016:

- The guaranteed minimum return on contribution was lowered than 1.75% for both employee and employer contributions. This return was revised according to an economic formula taking into account the evolution of government bond yields in the future;
- The supplementary pension age and the legal pension age were aligned;
- Beneficial anticipation measures granted to employees when they claim their supplementary pension before the legal age were abolished.

Over a 17-year period (2000-2016), occupational pension funds managed by IORPs (pillar II) and pension savings funds (pillar III) had annual average returns of 1.46% and 1.41% respectively. These funds offer returns linked to the performance of the underlying assets. Unlike insurance companies, asset management companies are less constrained in their asset allocation and can more easily benefit from potential increases in markets.

Unfortunately, we were able to update returns for "*Assurance Groupe*" occupational pension plans and individual life-insurance contracts for the years 2015 and 2016. Assuralia did not report the returns of these products

in the annual statistics for 2015 and 2016. The case analysis in the annex reports the return of an occupational pension plan invested through a Branch 23 contract.

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ANNEX: Case analysis of a Belgian Branch 23 - "Assurance Groupe" occupational pension plan

This corporate "Branch 23" (unit-linked) insurance pension plan offers three investment options: low, medium and high depending on the equity/bond asset allocation.

The "medium" investment option provides the returns of an investment fund that has the following benchmark:

- 50% equity (MSCI World equity index);
- 50% bonds (JPM Euro Bond Index).

Table BE23. Real case of a Belgian occupational pension insurance

2000-2016* performance vs. capital markets benchmark

Capital markets (benchmark index) performance**	
Nominal performance	+100%
Real performance (before tax)	+44%
Pension insurance performance (same benchmark)**	
Nominal performance	+33%
Real performance (before tax)	-4%

**To 30/06/2016*
*** 50 % Equity / 50 % bonds (MSCI World equity index and JPM Euro Govt Bond Index[63]) invested on 31/12/1999*
Sources: Better Finance, provider

As the table above shows:

- The real performance (before tax) of the pension fund is negative.
- The real performance of the pension fund is disconnected and much below that of the capital market benchmark which is positive: the

[63] ''Information has been obtained from sources believed to be reliable but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval. Copyright 2015, J.P. Morgan Chase & Co. All rights reserved'' (J.P. Morgan).

performance of capital markets cannot be used as a proxy for pension savings performance, even if the capital market benchmark used is the one chosen by the asset manager.

What are the reasons for such a bad performance?

The key explanation factor is charges (fees). Whereas the benchmark does not bear any fees, the pension fund does. It appears that this fund is a fund of funds. This means it bears two layers of fees: those of the fund itself plus those of the funds it invests in.

BETTER FINANCE also discovered that this fund of fund is not a UCITS fund, but an AIF (Alternative Investment Fund). Therefore, it is not required to publish a Key Information Document (KID) that must disclose the total annual charges of the fund of funds. Actually, BETTER FINANCE had to complain to the Belgian regulator to finally obtain the yearly charges on the fund of funds itself (0.50% per annum). We then had to search the disclosed underlying funds (biggest positions in the fund of funds portfolio) on the internet to find those funds' charges. It appeared that for the main equity funds, the weighted average annual charge in 2012 was 2.01% and 1.39% in 2015 (different funds used). In total the annual charge paid by the pension saver on the equity portion of this pension fund was therefore 2.51% of assets under management in 2012 and 1.89% in 2015, still more than nine times the annual charge on a world equity ETF index fund.

This expense rate is very high and more than explains the huge performance. Most of these expenses could have been saved by investing in an equity index exchange-traded fund (ETF) on the same benchmark (MSCI World) as the table below shows.

Table BE24. Charges taken from funds over a year	
This Belgian occupational pension fund (equity part):	1.89%
Average European equity fund:	1.75%
Average US equity fund:	0.70%
Exchange traded fund (world equities):	0.19%

Sources: Better Finance, Morningstar, Financial Times

Conclusions:

- Belgian "*Assurance Groupe*" pension funds should disclose full charges and the "inducements" they get from investing in underlying funds (commissions paid by those funds' management firms).
- They should not invest in high fee funds when it is clearly not the fund participants' interest, as in this case.

Pension Savings: The Real Return

2017 Edition

Country Case: Bulgaria

Summary

The Bulgarian pension system rests on three pillars:

- Pension funds' real returns improved considerably in 2016 with long-term real returns for voluntary pension funds entering positive territory for the first time since the global financial crisis.
- Universal pension funds long-term real returns, however, remain grossly insufficient for those funds to provide a "supplementary" pension for the insured. Instead, with lower than needed real returns, participants in universal pension funds are on track to receive private pensions that actually subtract from the pension they would have been entitled to, had they not participated in this vehicle at all. Thus, participation in universal pension funds is detrimental to consumers in Bulgaria.
- Voluntary pension funds produced small positive real returns over the 2001-2016 period but remain uncompetitive savings and investment vehicles.
- An extensive pension funds' Asset Quality Review was performed in 2016 with results uncovering some issues that could potentially result in the erosion of long-term benefits accruing to the pension funds' account holders.

Introduction

The Bulgarian pension system rests on three pillars:

- Pillar I – Defined benefit, pay-as-you-go (PAYG) social security;

- Pillar II – Defined contribution, fully funded Supplementary Mandatory Pension Scheme (SMPS);
- Pillar III – Defined contribution, fully funded Supplementary Voluntary Pension Scheme (SVPS).

It is a result of a far-reaching pension reform undertaken in 1999-2000 to strengthen the fiscal sustainability of the PAYG public social security system inherited from the pre-1990 period and to transfer the longevity risk in part from the state to private pension providers.

The publicly managed PAYG pillar I still plays a major role in the Bulgarian pension system, as pay-outs from pillar II have not yet started "en masse" and pay-outs from pillar III are quite limited. From 2000 to 2015 participants born prior to 1960 continued to contibute only to the public system, while those born after 1959 were required to split their mandatory pension insurance contributions between pillars I and II. A major parametric pension reform was enacted in 2015, whereby:

a) Pension eligibility age is scheduled to increase gradually to 65 years of age for both women and men;
b) Mandatory pension insurance contributions increased to 18.8 % of insurable income in 2017 and are slated to rise again to 19.8 % in 2018 from 17.8 % in 2016;
c) Pension entitlement from the public PAYG system is being stepped up gradually from 1.1 % of the average income for each year of contribution in the 2009-2016 period to 1.5 % and
d) Fees and charges, collected by pension companies, are scaled down for each year between 2016 and 2019.

In addition, the pension regime was changed. Under the new regime the Supplementary Mandatory Pension Scheme became optional. While new entrants in the labour market are compulsorily placed into pillar II pension

funds, a year later, they and all other universal and professional pension funds' participants can elect to[64]:

a) either contribute their entire mandatory pension insurance to pillar I only or
b) to split their mandatory pension insurance contribution between pillar I and pillar II.

In the latter case they will be entitled to two pensions from both the public pension system and the SMPS. Their public pension, however, will be reduced commensurate to the lower pension insurance contribution they make to the public system. This opens the possibility of their total pension income possibly being lower than the pension they would have been entitled to from pillar I only. This will be the case if the pension from the SMPS is insufficient to compensate for the reduction of the public pension. Whether or not this is the case crucially depends on the return from universal pension funds, comprising the largest part of SMPS.

Pension Vehicles

The privately managed pension funds in Bulgaria come in four varieties. Universal and professional pension funds fall under Pillar II (SMPS), while Pillar III (SVPS) consists of voluntary supplemental pension funds and voluntary professional pension funds.

Table BG 1. Privately managed pension funds in Bulgaria

	SMPS	SVPS
1. Universal pension funds	X	--
2. Professional pension funds	X	X
3. Voluntary pension funds	--	X

Source: BETTER FINANCE composition

[64] Those who had opted at one point for only the state pension insurance scheme may elect to revert to participation in Pillar II pension funds later. The insured can exercise their election rights multiple times back and forth up to five years before the minimum required retirement age.

Pension funds are managed by specially licenced privately owned and operated pension companies. As of the end of 2016, a total of nine companies are licensed to manage pension funds. They are subject to various capital and governance requirements. A peculiar requirement is for pension companies to include the terms “pension” or “retirement” in their name, or derivatives thereof. At the same time, no entity without a license to manage pension funds can use any of those terms in their name.

Each pension company is allowed to manage one single fund of each type: universal, professional, voluntary and voluntary professional. As of end 2016, just one company offers all four pension fund types and the remaining eight companies offer three pension funds each (universal, professional and voluntary).

Thus the number of privately managed defined contribution pension funds offered in Bulgaria can be summarised as follows:

Table BG 2. Privately managed defined contribution pension funds in Bulgaria

	SMPS	SVPS
1. Universal pension funds	9	
2. Professional pension funds	9	1
3. Voluntary pension funds		9

Source: UPF, PPF, VPF Data based on data published by the Financial Supervisory Commission[65]

Universal Pension Funds

The universal pension funds are by far the most important pension vehicle in Bulgaria with over 3.5 million individual pension accounts and BGN 8.9 billion (€3.5 billion[66]) in assets under management (as of end 2016). Participation in the universal funds was mandatory for employees born in 1960 or later until August 2015 and has been optional ever since for those

[65] http://www.fsc.bg/bg/pazari/osiguritelen-pazar/statistika/statistika-i-analizi/2016/

[66] For the conversion of the various currencies to euros, the report uses the 2014 annual average exchange rate "Euro foreign exchange reference rates" provided by the European Central Bank: https://www.ecb.europa.eu/stats/exchange/eurofxref/html/index.en.html

who participated at least one year in a universal pension fund. Participation in universal pension funds is tied to the employment status of the insured and both the employee and the employer are required to make contributions.[67] Universal pension funds operate at national level and not on company or industry level.

The universal pension funds are by far the most important pension vehicle in Bulgaria with over 3.5 million individual pension accounts and BGN 8.9 billion (€3.5 billion) in assets under management (as of end 2016). Participation in the universal funds was mandatory for employees born in 1960 or later until August 2015, and has been optional ever since for those who participated at least one year in a universal pension fund. Participation in universal pension funds is tied to the employment status of the insured and both the employee and the employer are required to make contributions. Universal pension funds operate at national level and not on company or industry level.

Contributions

Contributions to the universal funds are set by law at 5% of insurable income, which in 2016 was capped at BGN 2,600 (€1,329.36) per month. This ceiling remains in effect in 2017.

Minimum returns

Pension companies are obliged to manage assets in such a way as to achieve a minimum nominal return. The minimum nominal return is set quarterly by the regulator, the Financial Supervision Commission, on the basis of the average return, achieved by all pension companies over a period of the preceding 24 months. The minimum return is equal to either 60% of the average for all universal pension funds or 300 bp (basis points) below the average, whichever is smaller.

In case a fund's actual performance is weaker than the minimum nominal return determined by the regulator, the pension company is obliged to top

[67] The statutory contribution to Universal pension funds is set at 5 % of insurable income, split between the employer (2.8 %) and the employee (2.2 %).

up individual pension accounts to the extent of the shortage. The source for this obligatory top-up is the pension companies' own reserves, which should range between 1% and 3% of assets under management.

Another source of funds could be reserves accumulated within the respective pension fund. These reserves are accumulated when the actual fund's performance exceeds the average industry performance for the respective period by either 40% or 300 bp, whichever is larger.

Reserves

Pension companies are mandated to maintain pension reserves to cover the actuarial longevity risk when lifetime pensions are offered. The regulator has decreed however, that these reserves must be set aside one year after the first lifetime pension from the respective fund is extended. Since typically such pensions are not yet being paid out of universal funds, pension companies have not made provisions for the longevity risk.

Distribution

Participants in universal pension funds become eligible to receive supplementary pensions under the same terms under which they qualify for a state pension, namely reaching a certain age and length of service. However, universal pension plan participants can start drawing on their account five years prior to reaching full pension age, provided their accumulated assets are sufficient to ensure a lifetime pension of at least the state-mandated minimum pension.

In the case of a premature death of an insured member or retiree, the universal pension fund distributes the balance of the account to his or her heirs either as a lump sum or as scheduled withdrawals. Should there be no heirs, the balance of the account is transferred to the universal fund's reserves.

Professional pension funds

Only those employees that work under hard and hazardous conditions such as miners, air pilots and similar are eligible to participate in professional

pension funds. People working under these conditions are entitled to an early retirement. The purpose of professional pension funds is limited to ensuring pensions for a prescribed length of time until those employees become eligible to draw pensions from the universal pension funds. With BGN 935.5 million (€478.3 million) in assets under management and 287,888 participants (as of end 2016 - tables BG3 and BG4), professional pension funds play a more limited role in the Bulgarian pension system.

Contributions

Professional pension funds are non-contributory. Only employers pay into the funds.

Minimum returns

The quarterly nominal returns are subject to the same floor as universal pension funds are – either 60% of the average return for the previous 24 months or 300 bp below the average return, whichever is smaller.

Reserves

The same provisions as for universal pension funds apply.

Distribution

Employees, eligible for a pension from a professional fund, are normally promised a term pension covering the period starting from the date of their early retirement to achieving the standard pension age.

Should a person who has been insured through a professional pension fund fail to meet the eligibility criteria for early retirement, he or she has a choice at the time of reaching the regular retirement age to:

- either withdraw his or her balance from the professional pension fund as a lump sum, or
- transfer the balance of his professional fund account to his or her universal pension fund account.

Similar to inheritance rights for universal pension funds, the heirs of a deceased insured or retired person inherit the account balance and may

choose to receive the entitlement as either a lump sum or as a scheduled withdrawal. Contrary to the rule for universal pension funds, should a deceased insured or retiree leave no heirs, the remaining balance on the account is transferred to the state budget.

Voluntary pension funds

Voluntary pension funds form the core of pillar III of the Bulgarian pension system. Nine voluntary pension funds operating in Bulgaria manage 601,144 individual accounts with BGN 910.4 million (€465.5 million) in assets (as of end 2016). Any person 16 years of age or older may contribute to a voluntary pension fund. Contributions are either personal or made by a third party (such as an employer) on behalf of the insured.

Minimum returns

The performance of voluntary pension funds is not subject to a minimum return obligation.

Reserves

As a matter of legal obligation, where voluntary pension funds promise lifetime pensions, they are required to maintain pension reserves to cover the longevity risk. As a matter of practice, currently voluntary pension funds have accumulated such reserves only for the limited number of lifetime pension contracts currently extended.

Distribution

Participants in voluntary pension funds have a variety of choices in drawing on their accounts.

One option is for participants to withdraw funds accumulated through their own contributions at any time prior to reaching the pension age. This right does not apply to funds accumulated as a result of any employers' contributions.

Another option gives them the right to a lifetime pension upon meeting the age and length of service requirements for a public pension. However,

participants may choose to draw a lifetime pension up to five years prior to meeting these eligibility criteria.

Lastly participants can choose between drawing the balance from their account as a lump sum or a scheduled withdrawal over a certain period of time.

The heirs of an insured or retired person, who leaves a balance in his or her account at the time of death, are entitled to the balance as either a lump sum or to scheduled withdrawals over a specified period of time. Should there be no heirs the balance is transferred to the voluntary fund reserves.

Voluntary professional pension funds

With only one voluntary professional fund with 7,257 participants and BGN 11.5 million (€6 mln.) as of end-2016, this vehicle is a rather insignificant part of the Bulgarian pension system and will be dropped from the real return analysis. Only participants in professional pension plans can contribute to voluntary professional pension funds. Their employers may elect to make contributions on behalf of employees too.

To meet their future obligations, pension companies set aside technical reserves. The technical reserves need to be maintained at any moment in time and invested appropriately to ensure availability.

Participants acquire a right to a term pension from a voluntary professional fund upon reaching the age of 60 for both men and women. They have the choice to either a lump sum or scheduled withdrawals.

The heirs of a deceased insured or retiree are entitled to receive the remaining balance on the account as either a lump sum or scheduled withdrawals.

Summary

The relative role various pension vehicles play in the defined contribution pillars of the Bulgarian pension system (as of end-2016) is summarised in the tables below:

Table BG 3. Number of accounts		
	SMPS	SVPS
1. Universal pension funds	3,576,387	
2. Professional pension funds	287,888	7,257
3. Voluntary pension funds		601,144
Total	3,864,275	608,401
Grand total	**4,472,676**	

Source: BETTER FINANCE calculation based on data published by the Financial Supervisory Commission[68]

Table BG 4: Assets under management (BGN million)		
	SMPS	SVPS
1. Universal pension funds	8,899,563	
2. Professional pension funds	935,501	11,803
3. Voluntary pension funds		910,410
Total	9,835,064	922,213
Grand total	**10,757,277**	

Source: BETTER FINANCE computation UPF, PPF, VPF Data 2016, based on data published by the Financial Supervisory Commission[69]

Table BG 5: Assets under management (€ million)		
	SMPS	SVPS
1. Universal pension funds	4,550,274	
2. Professional pension funds	478,314	6,035
3. Voluntary pension funds		465,485
Total	5,028,588	471,520
Grand total	**5,500,108**	

Source: BETTER FINANCE calculations based on UPF, PPF, VPF Data based on data published by the Financial Supervisory Commission[70]

[68] http://www.fsc.bg/bg/pazari/osiguritelen-pazar/statistika/statistika-i-analizi/2016/
[69] Ibid.

The insurance industry in Bulgaria is excluded from mandatory pension savings and investments. While buying a Life Insurance Policy enjoys the same tax advantage as investing in a voluntary pension fund (investment of up to 10 % of the annual income is tax free), life insurance does not play any meaningful role in the pension system in Bulgaria.

Charges[71]

Participants in pension funds are subject to fees and charges, defined and capped by law. Three types of fees and charges apply:

- front load (entry fee) on pension fund contributions;
- annual investment management fees on account balances (or the annual return in the case of voluntary funds);
- administrative charges.

The law caps those fees and charges as follows:

Table BG 6. Legal caps to fees and charges (2016)

Fees	SMPS	SVPS
Front load	4.5%	7%
Management fee	0.9%	10 %[72]
Transfer fee	BGN 10.00	BGN 20.00

Source: BETTER FINANCE computation

Pension companies are banned from charging any fees other than the ones listed. The front load fee applies to each contribution, while the management fee applies to the balance of the account (or the annual return in the case of voluntary funds). The transfer fee is charged when a participant desires to transfer his or her account to a different pension management company. Only one transfer of account is permitted per year. Companies, managing voluntary pension funds are allowed to collect

[70] Ibid.

[71] Data on charges are collected from individual pension companies' Internal Rules and Regulations for managing pension funds. These documents are publicly accessible on the web page of each pension company.

[72] 10% of the positive nominal return to the fund/ individual account.

several other administrative fees as long as those are explicitly allowed and specified in the law.

In practice, most of the pension companies managing universal and professional funds charge the maximum loads and fees with the largest pension company (by number of participants and assets under management), offering discounts on long-term participants. .

The front end fees charged by pension companies for voluntary pension funds vary more widely and are typically between 2.5% and 4.5%. The amount of the front end fee varies according to the amount of the contribution or the number of employees signed up to a voluntary pension fund by their employer. The majority of pension companies charge the maximum allowed 10% of returns in investment management fees. Four companies charge lower investment management fees: one charges 4.5%, the other charges 7% and the remaining two, including the largest company, charge 9% on positive returns.

Administrative charges are normally one-time and nominal.

As of 2016 the law mandates a reduction in fees and charges for the SMPS according to the following schedule[73]:

Table BG 7. Pension funds fees and charges for SMPS (2016-2019)

	2016	2017	2018	2019
Front Load	4.50 %	4.25 %	4.00 %	3.75 %
Management fee	0.90 %	0.85 %	0.80 %	0.75 %

Source: BETTER FINANCE computation

Taxation

Individual contributions to pension funds are typically free from income tax. An annual contribution to voluntary pension funds of up to 10% of annual taxable income is tax-free, while any additional contributions can be made

[73] National Assembly, (2015), Social Insurance Code, State Gazette, No. 61, 11.08.2015 (In Bulgarian)

from after-tax income. Investment income accrues tax-free to individual pension accounts. Pension payments are also free of tax.

Employers deduct contributions to pension funds of up to BGN 60 (€30.68) per employee per month from their annual revenue before taxes. Pension companies' services and revenues are free from VAT and tax respectively.

The tax regime of the pension companies and pension funds does not drive a wedge between nominal and real returns in Bulgaria.

Pension Returns

Pension returns can be calculated using one of two methods: money-weighted or time-weighted[74]. The actual results obtained by participants in pension funds over time are best measured by the money-weighted rate of return method. It accounts for all cash inflows and outflows as well as the fees charged by pension fund management companies, including the front load (entry fee) for each contribution. The money-weighed rate of return does not measure the ability or the skill of the investment management teams, but it does give the most realistic outcome for the insured in the second and third pillars in the Bulgarian pension system, which are still largely in the accumulation phase and experience sizable cash inflows relative to total assets under management. In addition, the money-weighted rate of return is endorsed by the OECD and used to calculate pension fund returns on a comparable basis between countries[75]. While money-weighted returns reflect the return actually obtained by the pension fund's participant, time-weighted returns are indicative of the skill or luck of the pension fund's portfolio manager.

We report pension fund returns in Bulgaria over the 2002-2016 period using the money-weighted method and the returns over 2004-2016 using

[74] Feibel, Bruce J., (2003), "Investment Performance Measurement", John Wiley & Sons, Inc., Hoboken, New Jersey, p. 53

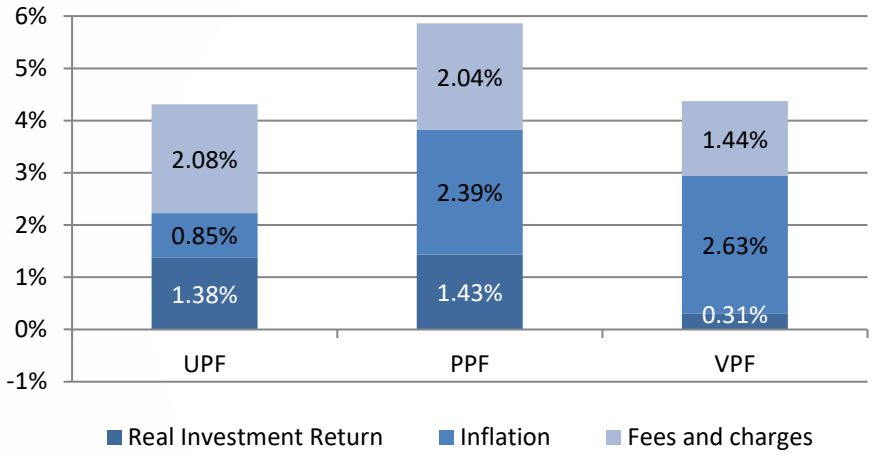
[75] OECD, (2015), Pension Markets in Focus 2014, p. 18 (accessed at http://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2014.pdf)

the time-weighted method. It should be noted that the Bulgarian Financial Supervision Commission publishes only time-weighted returns.

Money-weighted Returns

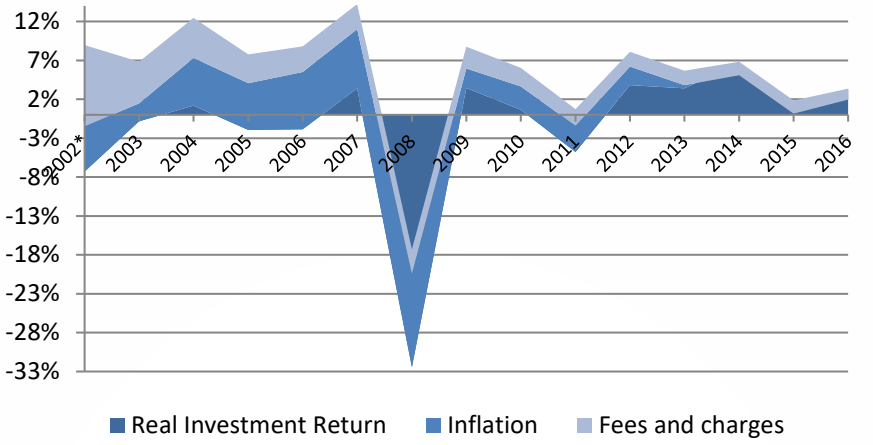
We start with reporting the annual money-weighted returns of pension funds in Bulgaria, breaking the gross nominal return into its constituent parts, namely: a) the real return; b) inflation and c) fees and charges. The returns are illustrated in graphs BGI and BGII and are reported in tables BG8 and BG9.

Graph BG I - Breakdown of Nominal Returns by Type of Pension Fund (2002-2016)



As shown in Graph BGI nominal returns across all pension funds fully compensate for fees and charges and inflation. Participants in universal pension funds (UPF) and professional pension funds (PPF) received on average a positive real return of 1.4 % annually, while participants in voluntary pension funds (VPF) received a 0.3 % annual real return over the 2002 to 2016 period.

Graph BG II - Breakdown of nominal returns by component



The breakdown of annual returns is illustrated on a year-on-year basis for the universal pension funds, the largest and most important pension vehicle in Bulgaria. It is clear that while prior to the 2008 crisis fees and inflation had been "eating" into the bulk of the nominal returns (investors received slightly positive real returns only in 2004 and 2007), in the years following the crisis investors have enjoyed positive real returns more consistently. This is due to three factors: a) the bull market after 2011, b) a decelerating inflation (and outright deflation in 2014-2016) and c) the decreasing impact of front loads on returns as assets under management grow.

Annual data in Tables BG8 and BG10 below lead to the following conclusions:

1. The pension reform in Bulgaria coincided with the beginning of one market cycle in 2001-2002, experienced the global financial crisis in 2008 and is growing through the new cycle until 2016, when stock and bond markets are at or near record highs.
2. Overall, for the observed period (2002 –2016), the funds have largely generated positive gross nominal returns with the exception of 2008.

3. The funds have been managed conservatively thus barely allowing investment returns to cover the inflation and expense ratios.
4. Both nominal and real pension fund returns started improving in 2012, but it is important to note that real returns have been helped by deflation rates in 2014 - 2016.

Table BG 8: Money-Weighted Returns for Universal Pension Funds (UPF)

Money-weighted Return	Gross Investment return (%)	Fees and charges (%) **	Net Investment Return (%)	Inflation % (HICP)	Real Investment Return
2001					
2002*	8.6%	10.5%	-1.9%	5.8%	-7.3%
2003	6.8%	5.4%	1.5%	2.3%	-0.8%
2004	12.5%	5.2%	7.4%	6.1%	1.2%
2005	7.7%	3.7%	3.9%	6.0%	-2.0%
2006	8.7%	3.3%	5.4%	7.4%	-1.9%
2007	14.5%	3.2%	11.3%	7.6%	3.4%
2008	-21.2%	3.2%	-24.3 %	12.0%	-32.4%
2009	8.8%	2.8%	6.0%	2.5%	3.5%
2010	6.1%	2.4%	3.7%	3.0%	0.6%
2011	0.6%	2.1 %	-1.6%	3.4%	-4.8%
2012	8.2%	1.9%	6.3%	2.4%	3.8%
2013	5.7%	1.8%	3.8%	0.4%	3.4%
2014	6.7%	1.7%	5.0%	-1.6%	6.7%
2015	1.9%	1.7%	0.2%	-1.1%	1.3%
2016	3.3%	1.4%	1.9%	-1.3%	3.3%
Total Annualised §	4.3%	2.1 %	2.3%	0.9%	1.4%

Source: Money-Weighted Returns Table (MWR)

§ - AUM Weighted

**Universal Pension Funds were launched in April 2002*

***No official statistics for 2002 and prior to 2002 - estimation for these years*

Table BG 9. Professional Pension Funds					
	Gross Investment return (%)	Fees and charges** (%)	Net Investment return (%)	Inflation % (HICP)	Real Investment Return
2001*	7.2%	7.8%	-0.6%	7.8%	-7.4%
2002	8.3%	3.9%	4.4%	5.8%	-1.3%
2003	8.9%	2.8%	6.1%	2.3%	3.7%
2004	12.6%	2.5%	10.1%	6.1%	3.8%
2005	8.4%	2.1%	6.3%	6.0%	0.3%
2006	9.6%	2.0%	7.6%	7.4%	0.2%
2007	14.9%	1.9%	13.0%	7.6%	5.0%
2008	-25.0%	2.1%	-27.0%	12.0%	-35.0%
2009	8.9%	2.0%	6.9%	2.5%	4.3%
2010	6.1%	1.8%	4.3%	3.0%	1.2%
2011	4.2%	1.8%	2.4%	3.4%	-1.0%
2012	10.2%	1.7%	8.5%	2.4%	5.9%
2013	7.8%	1.6%	6.2%	0.4%	5.8%
2014	7.4%	1.6%	5.8%	-1.6%	7.5%
2015	3.0%	1.6%	1.4%	-1.1%	2.5%
2016	5.0%	1.4%	3.6%	-1.3%	3.6%
Total Annualised§	5.9%	2.0 %	3.8%	2.4%	1.4%

Source: Money-Weighted Returns Table (MWR)
§ - AUM Weighted
**Professional Pension Funds were launched in June 2001*
***No official statistics for 2002 and prior to 2002 - estimation for these years*

Table BG 10. Voluntary Pension Funds					
	Gross Investment return (%)	Fees and charges** (%)	Net Investment return (%)	Inflation % (HICP)	Real Investment Return
2001*					
2002	15.4%	4.5%	10.9%	5.8%	4.9%
2003	9.7%	2.6%	7.2%	2.3%	4.8%
2004	11.4%	2.4%	9.0%	6.1%	2.7%
2005	9.1%	2.1%	7.0%	6.0%	0.9%
2006	7.3%	1.8%	5.5%	7.4%	-1.8%
2007	16.0%	2.6%	13.4%	7.6%	5.4%
2008	-28.9%	0.7%	-29.6%	12.0%	-37.1%
2009	8.1%	1.3%	6.8%	2.5%	4.2%
2010	6.3%	1.6%	4.6%	3.0%	1.6%
2011	-0.6%	0.4%	-1.0%	3.4%	-4.3%
2012	8.6%	1.1%	7.4%	2.4%	4.9%
2013	6.7%	0.9%	5.8%	0.4%	5.6%
2014	6.8%	1.0%	5.8%	-1.6%	7.5%
2015	2.0%	0.6%	1.4%	-1.1	2.5%
2016	5.6%	0.8%	4.8%	-1.3%	6.1%
Total Annualised§	4.4%	1.4%	2.9%	2.6%	0.3%

Source: Money-Weighted Returns Table (MWR)
§ - AUM Weighted
**Voluntary Pension Funds existed prior to 2002 but there are no official statistics available on the electronic site of the Financial Supervision Comission (FSC)*
***No official statistics for 2002 and prior to 2002 - estimation for these years*

We observe that pension funds in Bulgaria are managed conservatively and as a result are generating mediocre investment results. For the total observed period the universal and professional pension funds have achieved a positive annual average real return of 1.4%, while investors in voluntary pension funds received a paltry 0.3 % real return per annum. Total expense ratios remained above 2 % of assets per annum for the 2002-2016 period for universal and professional funds and stood at 1.4 % for voluntary funds. The investment return needed to compensate for fees and charges, is decreasing every year and this trend is expected to continue as

funds accumulate assets and the overall ratios are driven more by annual management fees on assets and less by front end fees on contributions. Moreover, lower legal caps on fees charged by pension fund management companies introduced in 2015, are expected to further improve the situation. Inflation for the observation period (2001-2016) was above 3.6%[76] on an annual basis. However, a prolonged period of lower inflation was recorded since 2013 and is expected in the future (In 2014-2016 Bulgaria experienced an outright deflation).

While low but positive real pension returns at least preserve the purchasing power of pension contributions over the period under study, in the case of universal pension funds they are grossly insufficient to bring about "supplemental" pensions. As mentioned, the state pension for those who contribute to universal pension funds will be reduced compared to the pension they would have been entitled to had they not participated in an UPF at all. It turns out that in order for the future pension from the UPF to (barely) compensate for the reduction of the state pension, the real return that the insured received through the UPF needs to exceed the annual growth rate of the national average insurable income[77]. In fact, over the 2001-2016 the average insurable income in Bulgaria grew by a hefty 4% in real terms[78], by far outpacing the average real return of the UPF, which stood at just 1.4%. Should these trends persist, those who remain insured in the universal pension funds will receive two pensions (a reduced state pension and a pension from an UPF), the sum of which will be less than the full state pension they would have been entitled to had they eschewed participation in the second pillar of the pension system in Bulgaria altogether.

Moreover, the calculations above are based on publicly available preliminary (unaudited) data, reported by pension companies themselves. An extensive independent Asset Quality Review of pension funds was

[76] Author's calculation based on National Institute of Statistic data (www.nsi.bg)
[77] Christoff, Lubomir, (2016), "Pension (In)Adequacy in Bulgaria". Available at SSRN: https://ssrn.com/abstract=2825011
[78] Author's calculation based on National Institute of Statistic data (www.nsi.bg)

performed in 2016. While the review resulted in only minor adjustments to asset values, it uncovered troublesome practices in some pension companies. These include "investments in illiquid financial instruments, related-party exposures in the broader economic sense, and complex cross-ownership structures. All of these factors could have a significant impact on the long-term benefits, accruing to the pension funds' account holders" according to the European Commission.[79]

Time-weighted Returns

Time-weighted returns of Bulgarian pension funds are reported in tables BG11 and BG12 below. Time-weighted returns are calculated for the 1 July 2004 – 31 December 2016 period, in order to compare with data on the performance of pension saving products of other countries in this report, given the fact that this is the methodology that was chosen for this report, as explained at the beginning of the book.

From 1 July 2004 onwards, Bulgarian pension funds started calculating the "pension fund share" (also referred to as a "unit") price on a daily basis. This data is used to calculate time-weighted returns. Investment returns are reported net of fees.

Pension funds report negligible annualised real time-weighted returns for the 2004-2016 period with the largest funds – the universal pension funds - reporting 0.1 % annual average return, voluntary pension funds – 0.25 %, while the professional pension funds recorded a negative 0.3 %.

[79] Commission Staff Working Document. (2017), "Country Report Bulgaria 2017". Brussels SWD (2017) 68/ p. 16.

Table BG 11. Nominal Annualized Returns (net of fees)					
	1 year	3 years	5 years	10 years	Since Inception
	2016	*2013-2016*	*2011-2016*	*2006-2016*	*01.07.2004*
Universal Pension Funds	4.0%	3.7%	4.6%	2.5%	3.8%
Professional Pension Funds	4.5%	3.7%	4.6%	2.0%	3.5%
Voluntary Pension Funds	5.9%	4.9%	5.9%	2.8%	4.1%

Source: Pension funds unit prices - Financial Supervisory Commission, HIPC- Eurostat
http://ec.europa.eu/eurostat/web/hicp/data/database

Table BG 12. Real Annualized Returns (net of fees)					
	1 year	3 years	5 years	10 years	Since Inception
	2016	*2013-2016*	*2011-2016*	*2006-2016*	*01.07.2004*
Universal Pension Funds	4.5%	4.9%	2.9%	0.0%	0.5%
Occupational Pension Funds	5.0%	4.8%	2.9%	-0.5%	0.1%
Voluntary Pension Funds	6.5%	6.1%	3.9%	0.4%	0.8%
Inflation (HICP)	-0.9%	-1.1%	-0.3%	2.5%	3.4%

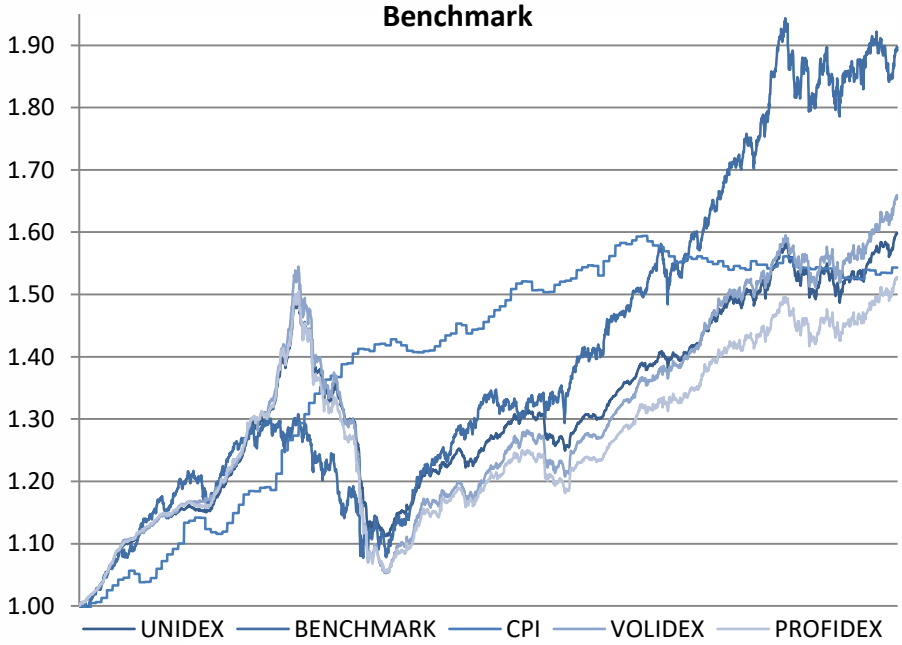
Source: Pension funds unit prices - Financial Supervisory Commission, HIPC- Eurostat
http://ec.europa.eu/eurostat/web/hicp/data/database

Real returns calculated by the time-weighted method have improved markedly in 2016 and are positive over three-, five ten-year periods and since inception (01.07.2004) with the exception of PPF real returns, which are negative over the last ten-year period.

Pension funds' performance is best assessed against a benchmark. Pension companies in Bulgaria, however, do not announce benchmarks against which they manage funds. To fill this gap we construct a crude benchmark based on a combination of 35 % of the STOXX Europe 600 index of large and

medium sized companies to represent the equity portfolio and 65 % of the Euro Government Bond 10Yr Term Index. The combination is consistent with the legal investment restrictions for universal pension funds and slightly more conservative for the remaining types of funds. The results are reported in Graph BGIII.

Graph BG III - Pension funds performance vs. Benchmark



Sources:
Author's calculations based on:
1. Financial Supervisory Commission, Unit values of pension funds
http://www4.fsc.bg/units.asp
2. STOXX Europe 600 Index EURSXXP,
http://quotes.wsj.com/index/XX/SXXP/historical-prices
3. Euro Government Bond 10Yr Term Index (BCEX4T)
https://index.barcap.com/Benchmark_Indices/Government/Term_Indices/Euro_Govt_10_yr_Term
4. National Statistical Institute, Consumer Price Index, 1995=100,
http://bit.ly/1vF95f7

Graph BG III depicts the daily performance of both the benchmark portfolio and the pension funds over the 1 July 2004 to 31 December 2015 period.

- The UNIDEX, VOLIDEX and PROFIDEX lines depict the performance of the aggregate pension fund indexes - universal, professional and voluntary - as reported by the Financial Supervisory Commission.
- CPI designates the Bulgarian consumer price index.

As evidenced, the pension funds move very much in tandem. They followed the benchmark portfolio fairly closely from July 2004 through January 2007, after which period the Bulgarian pension funds outperformed until October 2008 but then significantly underperformed since October 2009 up to end December 2016. While the benchmark portfolio broke even in real terms in October of 2013, Bulgarian universal and voluntary pension funds were struggling to break even in 2015 and seem to have finally done so only in February 2016. Professional pension funds have still a way to go before they can restore the real value of investments made on 1 July 2004.

Pension fund deviation from the benchmark can be accounted for by two main factors:

- the investment home bias[80] and
- an active management, which failed to adhere to a disciplined strategic investment policy as shown in the next section on asset allocation.

Asset Allocation

The asset allocation statistics, published by the Financial Supervisory Commission, are limited, since prior to 2008 the data does not show clear asset class allocation. After 2008, investments in "Mutual Funds" were still accounted for separately without clarification as to their primary investment focus. Table BG13 shows the asset allocation of the three main pension schemes starting at the end of 2008. The strongly negative investment result for 2008 suggests that pension funds were allocated more aggressively towards equity markets within their regulatory limits in 2007 and early 2008 when the global financial crisis occurred. Since 2008, the asset allocation choice remains less conservative and is slowly tilting towards riskier positions with equity investments growing from under 10%

[80] The benchmark portfolio does not contain Bulgarian securities.

of assets to over 15% of assets. Simultaneously bank deposits have been steadily decreasing from over 20% in 2008 to about 10% at the end of December 2016. However, the exposure to government bond markets increased from 2009 until end December 2015 reaching almost 45% for more conservatively managed mandatory funds and over 35% for voluntary pension funds. It is to be noted that in 2016, pension funds decreased their equity and mutual funds exposure and moved funds largely into cash (and partially into government bonds in the case of voluntary funds).

Such investment policy choices are questionable as pension funds in Bulgaria are largely in their accumulation phase and conservative strategies cannot fulfil the investment objectives and generate the necessary positive real returns to ensure an adequate retirement income. The asset allocation of all pension funds in Bulgaria, including the post-crisis period, and the decision to maintain less exposure to riskier asset classes shows that their investments did not fully participate in stock market recoveries that have occurred since 2009. Furthermore, such an asset allocation predetermines expectations of inadequate investment returns in the medium and longer terms to cover for expenses and inflation.

Table BG 13. Asset allocation - Three main Bulgarian pension schemes									
Universal Pension Funds	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Cash & Cash Equivalents	27.1%	30.7%	26.9%	26.2%	20.6%	21.1%	12.1%	12.5%	15.9%
Government Bonds	32.7%	23.0%	21.6%	30.9%	35.4%	35.0%	41.6%	44.8%	44.8%
Corporate & Municipal Bonds	24.7%	23.7%	23.4%	21.9%	23.8%	19.6%	16.2%	12.4%	11.2%
Equity & Mutual Funds	11.5%	18.7%	23.5%	16.1%	16.2%	20.7%	26.8%	27.3%	25.5%
Real Estate	3.9%	3.9%	4.5%	4.8%	4.1%	3.6%	3.3%	3.0%	2.7%
Professional Pension Funds	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Cash & Cash Equivalents	26.4%	28.8%	27.4%	25.6%	22.8%	17.3%	11.1%	9.9%	12.7%
Government Bonds	28.3%	21.0%	17.8%	27.4%	28.3%	33.5%	40.1%	44.0%	42.5%
Corporate & Municipal Bonds	25.0%	24.0%	23.5%	20.9%	23.4%	20.2%	16.3%	12.4%	11.4%
Equity & Mutual Funds	14.3%	20.3%	25.5%	19.1%	20.5%	24.5%	28.3%	29.6%	29.4%
Real Estate	6.0%	5.9%	5.8%	7.0%	4.9%	4.6%	4.2%	4.0%	4.0%
Voluntary Pension Funds	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Cash & Cash Equivalents	20.7%	29.8%	19.8%	18.8%	16.0%	13.2%	9.1%	10.5%	12.5%
Government Bonds	23.1%	13.3%	13.6%	23.1%	26.9%	29.7%	30.3%	35.6%	37.6%
Corporate & Municipal Bonds	25.0%	25.7%	28.0%	24.9%	25.2%	20.7%	18.2%	13.8%	12.1%
Equity & Mutual Funds	16.8%	20.1%	27.7%	22.1%	22.9%	28.0%	35.0%	33.5%	31.8%
Real Estate	14.4%	11.1%	10.9%	11.1%	9.0%	8.4%	7.4%	6.6%	6.1%

Sources:

Author's calculations, based on data published by the Financial Supervisory Commission
http://www.fsc.bg/bg/pazari/osiguritelen-pazar/statistika/statistika-i-analizi/2016/

The asset allocation question has remained at the centre of public debate for the past seven years and the most important issue is that the lack of profiling for different age groups among the insured is making the investment strategy unsuitable for most participants. The investment strategies are too conservative for people in the early accumulation phase, while these strategies could easily translate into “more than necessary” risk for people near retirement. Pension funds in practice have been under heavy public pressure since 2008, when they delivered strongly negative investment results. Even though in theory they have to be managed with a very long-term horizon, their results are reviewed on a quarterly basis, which in effect drastically shortens the investment scope. Investment managers are focused on delivering even the smallest short-term positive nominal returns for fear that even the slightest negative returns could backfire on them as a whole. The effect of these strategies however has been largely negative, since returns from 2009 until December 2016 failed to fully recover losses from 2008 despite the surge in global capital markets.

Conclusion

With the PAYG pension pillar in Bulgaria under financial stress and the universal pension funds being the default option for employees born after 1959, the defined contribution pillars are growing in importance to secure adequate pensions for future retirees. However, as the analysis of the real return of pension funds from 2002 to 2016 illustrates, with mediocre real returns, the task of providing Bulgarians with an opportunity to achieve old age security is proving beyond reach.

The asset allocation analysis of pension funds raises doubts as to whether they will have capacity to secure meaningful supplementary pensions. They are far too conservatively managed from the point of view of the younger worker. More generally, the fact that each pension company is only allowed to offer one portfolio to its clients irrespective of their individual time horizon and risk tolerance, leads to the observation that perhaps a majority of the insured in Bulgaria are invested in unsuitable portfolios.

Pension fund charges on Bulgarian pension funds are limited in number, capped by law and transparent. They have been too high a hurdle, however, for fund managers across all pension vehicles to overcome and deliver market-like long-term returns.

Furthermore, the short term minimum (nominal) return requirement, while being intended to protect the insured, may actually be backfiring as it creates a perverse incentive for pension fund managers to "fail collectively" rather than to take the risk of achieving better long term outcomes for their clients at the risk of a possible short term underperformance compared to their peers.

Bulgarians can choose whether to contribute to defined contribution pension funds but if they do, they don't have a choice as to how their savings are to be managed. All clients of a single pension fund, be it universal, professional or voluntary, receive the same portfolio, which can only be suitable to some of them by accident. Under these circumstances and with the inadequacy of supplementary pensions from universal pension funds, which will reveal itself when these funds start distributions en masse in 2021-2022, a popular backlash against the pension system as a whole cannot be ruled out.

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Pension Savings: The Real Return

2017 Edition

Country Case: Denmark

Summary

The Danish pension system is built on a three pillar structure, similar to that of other European countries. It is composed of the following elements:

- The first Pillar is composed by a basic state pension ("*Folkepension*") – pay-as-you-go; and ATP, which is an individual and mandatory occupational pension, savings-based and provided by ATP.
- Occupational pension; an obligatory and voluntary system based on agreements between social partners. It is savings-based and provided by life insurance companies, lateral pension funds, banks and company pension funds;
- Private pensions; voluntary individual; Savings-based and provided by life insurance companies and banks.

The statutary pillar, public pension schemes ("*Folkepension*", old-age pension), consists in a pay-as-you-go scheme. Funds paid by Danish contributors are not saved or invested but used to pay current pension obligations. Moreover, there is not a special old age contribution on the tax sheet.

The person who receives the pension must fulfil three fundamental conditions:

- Be Danish
- Be resident in Denmark
- Have lived in Denmark for at least three years in the period between the age of 15 and retirement. A person having lived in Denmark for 40 years

would receive the full pension, while people who have lived a shorter time period receive a proportional share[81].

Nevertheless, special rules may be applied if the person has lived in an EU/EEA Member State, Switzerland or a country with which Denmark has a special agreement.

The amount of this statutary pension also depends on whether a person has additional income and whether one chooses to defer claiming the state pension. Special rules may apply to refugees[82].

The ATP is a savings-based plan. Every worker (who works more than nine hours per week) contributes with a payment to ATP. A third of these payments are made by the worker and two thirds by the employer. The amounts are automatically deducted from the monthly wage. About one fifth of the contributions to ATP comes from benefit recipients. That is, a fifth of the people who contribute to ATP receive money from the State.

The second pillar, the occupational one, is a pension scheme which is linked to the employment relationship. Usually, both the employer and the employee pay contributions to the pension through the wages. The pension is in most cases a fixed percentage of wages and often contains insurance for the person in case that he or she looses the ability to work, survivers pension and lump-sum payments in case of death. These types of contributions are in most cases obligatory. The rate varies between educational groups and occupation.

Occupational pensions are based on agreements between social partners. They have similar features as the ATP schemes and are provided by life insurance companies, lateral pension funds and company pension funds.

[81] The government has introduced in June 2017 a new legislation regarding the pension system. The legislation is expected to create incentives for increased pension saving, and working past retirement age. It also focuses on the issues related to pension disbursements which are offset against the State retirement pension. Since this regulation was introduced in 2017 it will be further developed in next year's edition. The link to it is: https://www.fm.dk/nyheder/pressemeddelelser/2017/06/ny-aftale-om-flere-aar-paa-arbejdsmarkedet

[82] https://lifeindenmark.borger.dk/Living-in-Denmark/Pension/Pension-in-Denmark

If the person leaves Denmark, he or she could still constribute into the pension scheme. If this is the case, the pension could be paid out abroad if the person does not live in Denmark at the time of retirement.

Finally, the third pillar - the individual pensions – is a scheme that allows people to save money through pension companies, financial institutions or similar entities.

As will be explained later in the text, the private pension plans can be set up with a pension fund or a bank. The payments as well as the instalments will be determined by the level of income of the contributor. The rules for contributions to these schemes are basically the same as for pillar two. The difference is that they are exempted from taxation. There are no public pension contributions and therefore their rules can not be compared.

Compared to other nations, public pensions were more relevant in past decades than the occupational or private one. However, at the beginning of the 2000s the Danish pension system has shifted from a mainly public system to a partly private one. This change has become a trend in recent years and can be seen as a shift in the ideology that governs pension politics. In estimations from ATP, today about 70% of pension payouts comes from pillar one (old age pension and ATP). It is estimated that in 2040 that number will be around 50%, and around 35% in 2080.

There was a demand from labour unions through the 1980's for better replacement rates for middle income workers, and a demand from government for a higher saving rate. Among the legal reforms that have affected the Danish pension system in recent years, it is important to highlight two of them. The first one was introduced in the beginning of the 1990s. At that moment there were three pillars that weighted a tier each: basic old age pension, occupationally related supplementary pensions and private pension savings. After this reform there was a clear shift towards a more privatized pension system.

The second reform was passed by the Danish parliament in September 2012. It consisted of a number of different economic reforms with the aim

of targeting certain aspects of Danish legislation, mainly pensions. The most relevant changes were made to the "kapitalpension". In the past Danish citizens could make payments into this kind of pension with tax benefits on payment, but from 2013 onward (due to the abovementioned regulation) it is no longer possible. This measure introduced a new form of pension, the "*Aldersopsparing*" (further explained below). The main reason for this reform was a taxation change to improve the state budget.

In 2013 there was an incentive for contributors to pass from a "*kapitalpension*" to an "*Aldersopsparing*" pension. This incentive consisted on a reduction from 40% to 37.3% on the tax applied to the pension whenever it is withdrawn. This fact affected significantly the Danish banks revenue and liquidity, as well as the State's finances.

Nowadays, the statutory retirement age in Denmark is 65. However, this will increase in stages to 67 in the upcoming years, more concretely between 2019 and 2022. The current rule state that every five years the government should evaluate if the retirement age should be increased (max one year) 15 years out starting in 2015. So in 2015 it was decided that the retirement age should increase from 67 to 68. It is expected that the retirement age of people aged 25 today will be 74 years.

In this way the government is trying to reduce its contribution to the pension system. Anyone living in Denmark for a few years is automatically inrolled in the public pension system. Moreover, most of the inhabitants also have a company pension or a collective pension as it is included in their work contract. In addition to these schemes it is also possible to set up a private pension plan.

According to the 2015-2016 OECD Factbook[83], Danish households held 16.4% in currency and deposits; 1.6% in debt securities; 23.6% in equity; 7.3% in investment fund shares; 27.8% in life insurance and annuities; and 21.3% in pension funds in the reference period.

[83] http://www.oecd-ilibrary.org/economics/oecd-factbook-2015-2016_factbook-2015-en

Company pension funds cover only around 2% of the savings based pension assets. Other occupational pension schemes in Denmark, based on agreements between the social partners, are schemes covering more than one employer, typically a branch of industry or a profession.

Danish pension funds are very large by international standards. In many countries, pension funds cover only one company, which is much more expensive. Large collective schemes have much lower costs for the beneficiaries. These "low cost" products respond to the mandatory saving rules in ATP and pillar two because the incentives to capture customers are less than in pillar 3three Danish pension funds can benefit from economies of scale, as they provide the same product to a number of people, and therefore make important cost savings. Another reason for the low costs at ATP is that ATP only offers a single pension product, without much availability of choice for the scheme members.

The self-employed, if they decide to join the ATP system, pay a fixed contribution equal to DKK 284/month (€38)[84/85]. ATP is considered a pillar one labour market pension because almost everyone – even benefit recipients – is enrolled in ATP. Only the self-employed are not automatically included in the ATP system. The description of the ATP and its associated charges are clearly presented on the ATP website[86].

The pay-out from the "*Folkepension*" is DKK 72,756/year (€9,766) and supplementary entitlements can increase this pay-out to DKK 149,544/year (€20,073). These supplementary entitlements start to reduce in value when other income exceeds DKK 68,400/year (€9,181) and fall to zero when other income exceeds DKK 316,900/year (€ 42,537)[87]. On average, the pay-out

[84] https://www.pensionforalle.dk/selvstaendig/atp-for-selvstaendige-livsforsikring-her-og-nu-pension-saa-laenge-du-lever

[85] The exchange rate is a 2016 average calculated based on monthly averages from the ECB: https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/eurofxref-graph-dkk.en.html

[86] Idem

[87] https://www.borger.dk/pension-og-efterloen/Folkepension-oversigt/Folkepension/Folkepension-beregning-indtaegt-enlig

from the ATP scheme to a 65 year old person starting pay-out in 2016 will be around DKK 16,000/year (€ 2,133)[88]. Moreover, there is a secondary old age supplement called *Ældrecheck* (DKK 16,600/year), which targets very low income old age pensioners. It is means tested from around DKK 19,700 (€ 2,644) up to DKK 68.400 (€ 9,181) when the means testing of the regular old age supplement starts.

Naturally, for a DC (civil servant pension) scheme, the actual pay-out is based on the sum of retirement age, years of service, the ending salary and the age of retirement. There are other existing legislation-based mandatory pension schemes, but these are no longer open to contributions or new members, and therefore not mentioned here. These are usually used by the senior civil servants, the military and police.

Pillar two is a combination of labour market related pensions and occupational pensions ("*Arbejdsmarkedspensioner*"). These schemes are organised either as collective agreements between social partners within a specific part of the labour market, or as agreements between the employer and the employees of a company. The occupational pension scheme is normally mandatory. It is a right for all employees of the company to become members of the scheme, but it is not possible to opt out of the scheme. Members may take their pension capital from one scheme to another within three years of changing jobs, however in practice very few do it in time.

Approximately 75% of Denmark's working population (2.9 million) contributes to an occupational pension scheme. Insurance companies or lateral pension funds manage these schemes, while employers only manage a minority. 90% of the population between 16 and 66 years contributed to the ATP (contributions are automatically deducted from the salary and/or from the public benefits the person may receive). Around half a million people contribute to private pension schemes other than occupational

[88] ATP annualy report page 16: https://www.atp.dk/sites/default/files/atp_koncernen_aarsrapport_2016.pdf

schemes[89]. Contribution rates for occupational schemes vary between 9% and 20% of salary. As with the ATP, the burden of contributions is usually 2/3 for the employer and 1/3 for the employee.

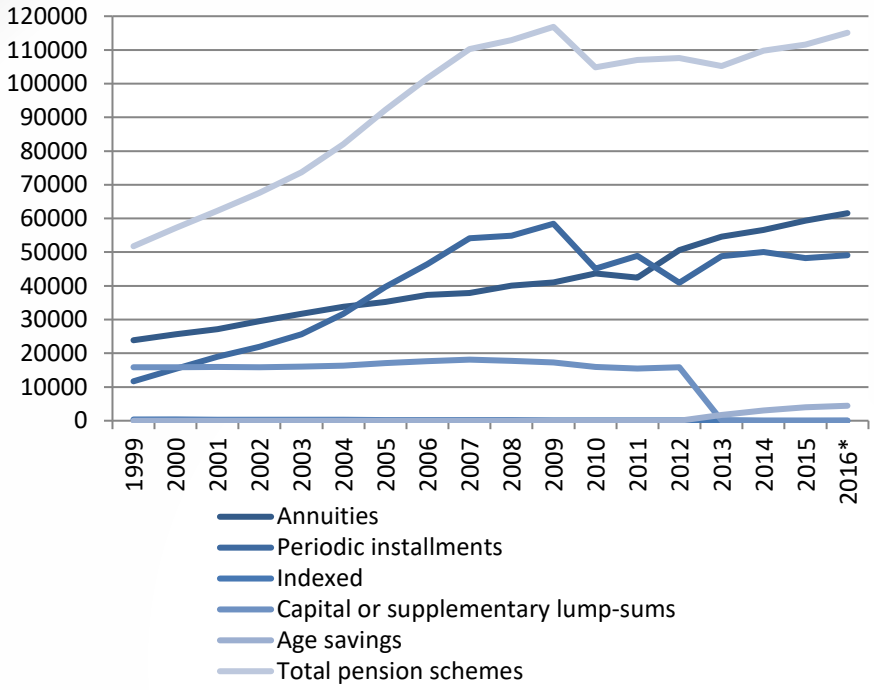
Pension Vehicles

The total pension schemes, including occupational and personal schemes, have recovered the amount of investments that the country had before the financial crises – at least in absolute terms. The total amount invested in pension vehicles for 2016 was DKK 115,130 Mln (€15,479 Mln). The annuities represented 53.47% of the total pension schemes – DKK 61,560 Mln (€8,276 Mln) in absolute terms - while periodic installments rose to 42.64%. – DKK 49,098 Mln (€6,601 Mln) in absolute terms. Aldersopsparing (Age Savings) grew for the fourth year in a row since its creation in 2013. It represented 3.85% of the total investments – DKK 4,437 Mln (€597 Mln) in absolute terms[90] -, and indexed and capital or supplementary lump-sums represented a 0.01%, in both cases. This is observable in the following graph, as well as the variables' tendencies through time:

[89] Figures from Torben M.Andersen, Torben Möger Pedersen, Cristina Lage, Peter Melchior, Lars Rohde "Basispension" October 2012, Penge- og Pensionspanelet.

[90] The Danish Insurance Association (Forsikrinogpension) shows the numbers before tax, exept the ones provided for Aldersopsparing (Age Savings), which are displayed after tax. The numbers have not been converted due to the difficulties of the metrics and the inconsistencies that will be created with respect to the rest of the data.

Graph DK I. Breakdown of the total amount invested in pension vehicles (1999 – 2016, in million DKK):



Source: Forsikrinogpension[91]

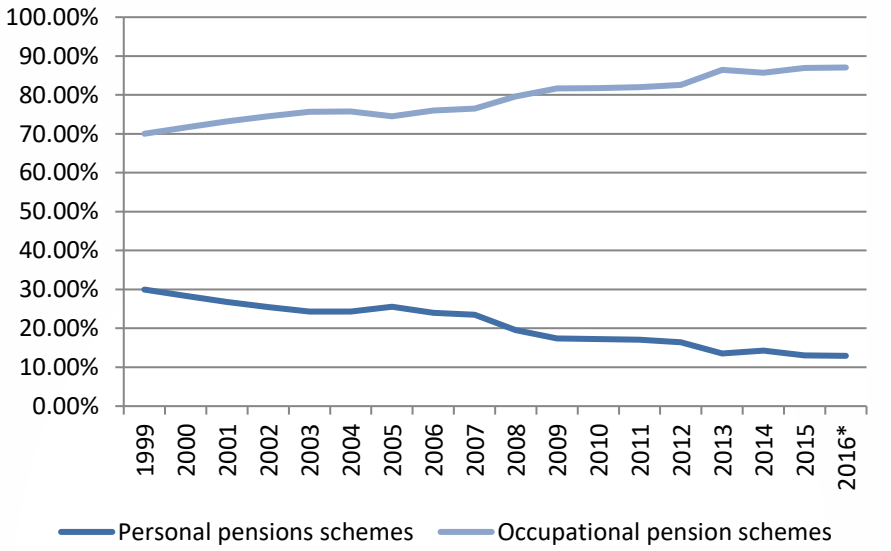
**preliminary data*

Out of the total pension schemes in 2016 – DKK 115,130 Mln -, 87.07% went to occupational pension schemes – DKK 100,241 Mln (€13,477 Mln) in absolute value, and just 12.93% was attracted by personal pension schemes – DKK 14,889 Mln (€2,002 Mln) in absolute volume. As can be seen in the graph DK II, the evolution of the occupational pensions in Denmark has followed a growing trend, passing from 70.03% of the total amount invested in pension schemes in 1999 to 87.07% in 2016. On the contrary, the personal pension schemes suffered a negative tendency, diminishing

[91] http://www.forsikringogpension.dk/presse/Statistik_og_Analyse/in-english/Sider/in-english.aspx.

from 29.97% of the total amount invested in pension schemes in 1999 to 12.93% in 2016.

Graph DK II. Evolution of personal and occupational pension schemes, 1999 – 2016



Source: Forsikrinogpension
**preliminary data*

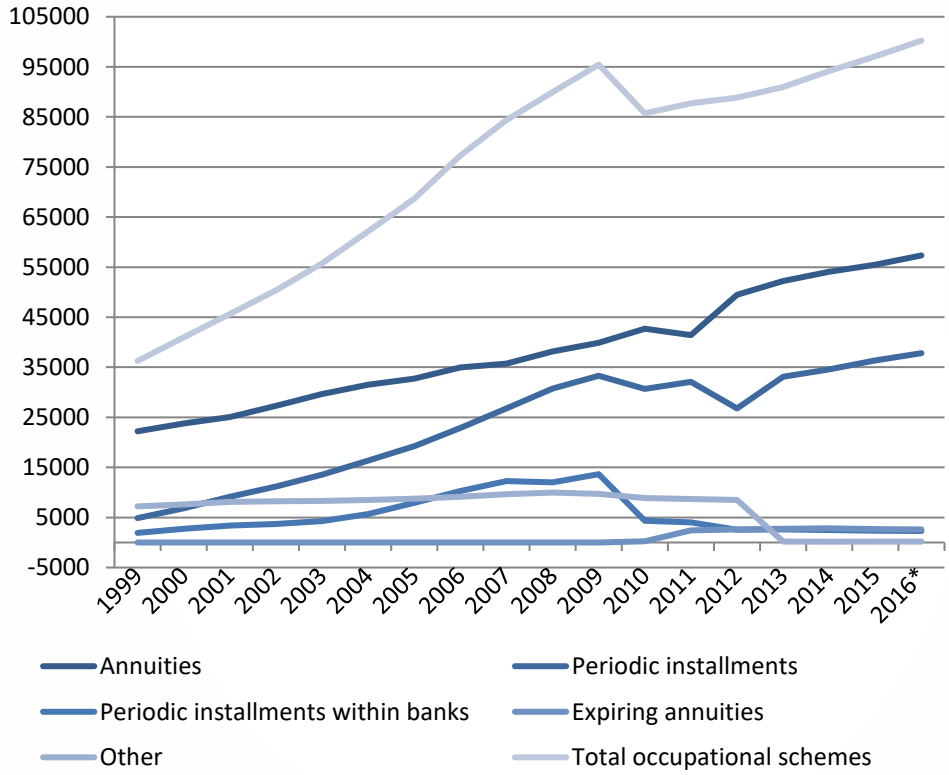
Occupational Pension Schemes

The total volume of investments in occupational pension schemes in 2016 was DKK 100,241 million. The two main pension schemes were: annuities and periodic installments, followed by far by periodic instalments within banks and expiring annuities.

The annuities kept a constant growth over the last six years and represented 57.20% of the investments in occupational pension schemes – DKK 57,338 Mln (€7,709 Mln). A look at the investments in periodic instalments reveals that 37.72% were total occupational pensions in 2016, with DKK 37,814 Mln (€5,084 Mln) in absolute terms. Expiring annuities and periodic installments within banks represented 2.63% and 2.27% respectively.

The variable called "other" in graph DK III is composed of indexed schemes within insurance companies, indexed schemes within banks, capital pension schemes within insurance companies, capital pension schemes within banks, age savings not exempted, and age savings exempted. In total, they represented 0.19% of the investments in occupational pension schemes.

Graph DK III. Breakdown of the amount invested in occupational pension schemes by type of decumulation, 1999 – 2016 (in million DKK)



Source: Forsikrinogpension
**preliminary data*

Out of the total occupational schemes, 97.56% were offered by insurance companies – DKK 97,793 Mln (€13,148 Mln) in absolute terms; 2.27% was received by banks – DKK 2,275 Mln (€306 Mln); and 0.17% of unclassifiable companies, according to The Danish Insurance Association.

Personal Pension Schemes

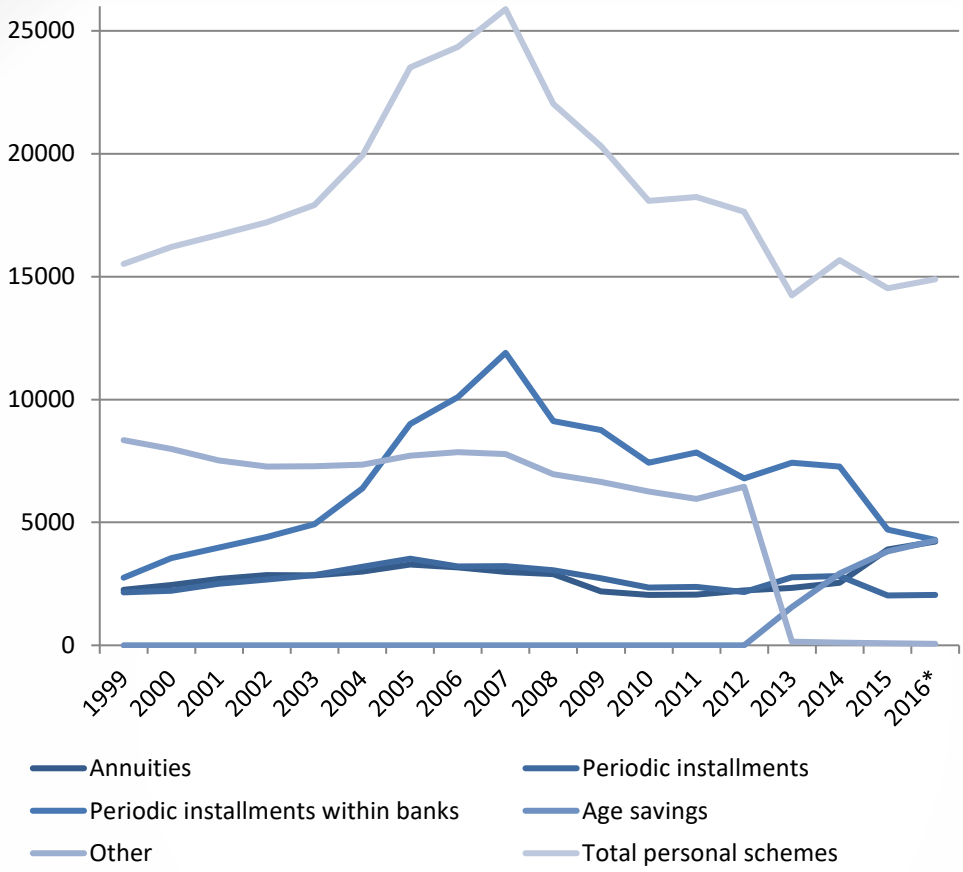
The total amount of money invested in personal pension schemes in 2016 was DKK 14,889 million. The most important personal schemes were: annuities, perdiodic installments, periodic installments within banks and age savings.

The periodic installments within banks were the largest recepient of investments in the personal pensions with DKK 4,289 Mln (€577 Mln), which represented 28.81%. It was followed very closely by age savings with DKK 4,264 Mln (€587 Mln)[92] - 28.64% - and annuities with DKK 4,222 Mln (€568 Mln), which meant 28.36%. Moreover, periodic installments represented 13.76% of the investments in personal pensions, representing DKK 2,049 Mln (€275 Mln) in absolute terms.

The variable under the name of "other" in graph DK IV below is constituted by the addition of capital pension schemes within insurance companies, indexed schemes within insurance companies, indexed schemes within banks, capital pension schemes within banks, and expiring annuities.

[92] Please see footnote 91. The numbers have not been converted due to the difficulties of the metrics and the inconsistencies that will be created with respect to the rest of the data.

Graph DK IV. Breakdown of the total amount invested in personal schemes by type of decumulation, 1999 – 2016 (in million DKK)



Source: Forsikrinogpension
**preliminary data*

Out of the total personal pension schemes, 42.44% of them were offered by insurance companies – DKK 6,318 Mln (€849 Mln) -, 28.91% were offered by banks – DKK 4,305 Mln (€579 Mln) -, and 28.64% were offered by unclassifiable companies – DKK 4,264 Mln (€587 Mln) in absolute terms, according to the Danish Insurance Association.

Denmark has four major types of private pensions:

- Life annuity ("*Livrenter*") with a guaranteed or market based pension payment for the total life period of the member;
- Annuity or instalment pension (Rate pension) with a guaranteed or a market based pension payment for an agreed number of years, typically ten years;
- Lump sum pension ("*Kapitalpension*") with one pay-out[93];
- Lump sum pension ("*Alderspension*") with one or several disbursments pay-out.

Every private pension product in Denmark is a defined contribution scheme. In this sense, each company is responsible for choosing the assets enabling them to achieve the obligations that they have with savers.

Until 1994 all pension companies offered a guaranteed annual basic return rate of 4.5%. This fact coerced corporations to invest in low risk products, as government and/or mortgage bonds. Since 1994 the Danish FSA has progressively decreased guaranteed returns. This means that the solvency of the schemes is protected, but not the real value of their pension savings.

In the last years there has been a reduction in interest rates, being close to zero for a long time. In this respect, it is obvious to think that looking for high returns, companies must have started investing in market-based products. This fact means that portfolio managers have tended to invest in assets (such as shares) and, therefore, have increased the risk taken on the pension portfolios.

Life annuity

One of the four types of private pensions in Denmark is life annuity. This is an annuity deductible savings that can give participants a monthly pay-out, that is, money paid in instalments every month.

[93] Pay out from rate pension and "Kapitalpension" can be changed by the saver to a life annuity.

The benefits of life annuity are as follows[94]:

- Life annuity pension provide financial stability as one receives regular monthly income for life;
- The only scheme with no limit on contributions;
- Contributions can be made as lump sum or regular instalments;
- If one cannot use tax relief, spouse or civil partner can;
- Individuals below the age of 67 can buy an exemption from contributions (waiver of premium) if their earning capacity is reduced;
- Survivor's pension - The possibility of taking out cover for a spouse and/or a guarantee for the life annuity so that surviving relatives are sure to receive the subscriber's pension for a specified number of years.

Contrary to the pension products that are paid for a particular amount of years, the life annuity is paid monthly until the recipient dies. The payouts are taxed as regular income. But before this happens, there is a means testing against the old age supplements, which creates higher than regular income tax. Life annuity is the only type of pension that offers payments for an unlimited time, for example every month.

Every person with a permanent residence in Denmark can benefit from this product, regardless of age. Life annuity can be created both as an individual or occupational administered scheme.

The pension age is determined by the amount of years that the person has contributed, 60 being the minimum age if the contributor started to contribute before 1 May 2007.

With respect to tax deductions on payments it must be said that when the deposit is based on private lifetime annuity, it is possible to take out payments from the personal income on tax returns. This deduction cannot be transferred to another person (not even with family links). Moreover, if someone subscribes a time-limited private annuity it is possible to deduct the contributor's temporary annuity from the personal income.

[94] https://www.danicapension.dk/en-dk/Customers/Advisory-services/Payout-options/Pages/Life-annuity.aspx

Annuity or instalment pension

Another private pension is the so-called instalment pension. It is a number of payments that are made regularly over a period of time, usually ten years.

The Danish government[95] has set as objective to increase savings in lifelong pensions. Due to this political interest, the government has established a restriction on the amount that can be put into instalment pensions each year. The total annual maximum has risen from DKK 52,400 (€7,034) in 2015 to DKK 53,500 (€7,181) in 2016. Because of the fixed maximum amount there is a risk that by paying several instalment pensions, the contributor will be exceeding the permissible total maximum amount.

Danish contributors run the risk of paying several instalment pensions when they make payments to other than the instalment pension with PFA, Danica or other occupational pension providers, as for example corporations in the banking system. If this is the case, the occupational pension providers will not know the total payments and, therefore, the contributor will be at risk of exceeding the annual maximum amount.

In the past, companies would usually offer to adjust the instalment pension payment in relation to the amount the contributor paid in other private instalment pensions. This is however no longer possible, as the law states that instalment payments to pension plans through the employer have precedence over private payments.

If the total amount exceeds the legal limit of DKK 53,500 (€7,181), the individual will have to pay additional taxes.

Lump sum pension ("Kapitalpension")

In this case the participant receives a lump-sum payment. However, the participant can decide whether to use a big amount the first year of retirement or to stretch the money as long as possible. That is, the money

[95] http://www.skm.dk/skattetal/beregning/skatteberegning/beloebsgraenser-i-skattelovgivningen-der-reguleres-efter-personskattelovens-%C2%A7-20-2016-2017

can be returned in one payment the day the contributor retires or disbursed in several portions. Moreover, the amount can also be paid in the event of a critical illness.

The participant can use that money for whatever he wants at the moment he wants.

There are special tax rules associated with individual pension products, and the options for deduction are different depending on whether the individual is an employee, self-employed or otherwise.

The benefits of an endowment are as follows:

- The contributor is free to get savings paid the day he/she reaches the pension age;
- The contributor decides when to use the money and for which purposes;
- The contributor chooses whether to be paid in one or more instalments;
- Savings protection give a guarantee that if the contributor die before retiring, his/her heirs will receive adequate compensation;
- The return on pension capital will be taxed low (15.3% annually in 2014)[96].

From 2013 onward payments to capital pension were no longer tax deductible. The payout is taxed at a rate of 40% (37.3% from 2013 to 2015). Capital pensions located in both the insurance companies and banks.

Capital pensions can be paid five years before the retirement age. If the capital pension was created before 1 May 2007, it will usually be paid when the person reaches the age of 60. The pension can also be paid in case of permanent disability, life-threatening illness, or death. Capital pension is payable within 15 years of the earned pension age.

In 2010 the deductibility of payments to capital fell. Moreover, the tax reform of 2012, when the deductibility of payments to capital fell for the second time, introduced the option of converting the capital pension and

[96] This rule applies to all types of pension savings (life annuity, fixed annuity and lump sum). DANICA: https://www.danicapension.dk/da-dk/Medarbejdere-og-private/raadgivning/Udbetalingsmaader/Pages/kapitalpension.aspx

thus transforming it into a retirement savings. In the years 2013-2015 the pension customers only had to pay 37.35%. In subsequent years, the tax rate rose to 40%.

Lump sum pension ("Alderspension")

This type of pension scheme is quite new and is therefore not as popular yet as the established pension schemes. However recent pension reform has introduced tax benefits for *alderspension* which could make this scheme more popular in the future.

Alderspension is a lump sum pension that can be disbursed either as a lump sum when reaching retirement age, or as several smaller amounts untill 15 years after having reached retirement age.

The participant can save up to DKK 29,600 (€3,973) annualy and there are no taxdeduction on the payments[97]. Contributers can select to pay all the money at once or split it into ongoing payments, for example monthly ones. This amount is put into their retirement savings and adjusted annually. New law passed in June 2017 will, when fully implemented in 2023, allow contributers who have five years to retirements to contribute up to DKK 50,000 (€ 6,711) annually.

The benefits of Alderspension are as follows[98]:

- One can continue to contribute after receiving disbursed funds;
- The return on savings is only taxed at 15.3%;
- No tax or duty on disbursements;
- The funds in one's retirement savings account are not offset against the state retirement pension[99]

[97] According to ATP, This amount will probably be lowered to DKK 5,000 anually until 5 years before retiment and then DKK 50,000 the last 5 years.

[98] https://www.danicapension.dk/en-dk/Customers/Advisory-services/Payout-options/Pages/RetirementSavings.aspx?tab=0#tabanchor

[99] According to ATP, the price for this advantage is a lower deduction rate for those paying more than regular income tax

Minimum returns

Pension companies are obliged to manage assets in such a way as to achieve a minimum nominal return. The minimum nominal return is set quarterly by the regulator, the Financial Supervision Commission, on the basis of the average return, achieved by all pension companies over a period of the preceding 24 months. The minimum return is equal to either 60% of the average for all universal pension funds or 300 bp (basis points) below the average, whichever is smaller.

Charges

The Danish market for pension schemes includes a great number of pension products and private pension providers. This makes it very complicated for the consumer to have an adequate view of the market, products and providers. Moreover, the comparison between the products and providers is also very difficult to obtain, which contributes to the opacity of the market.

Providers generally calculate yearly costs for the contributors as a percentage of assets. However, differences among the provider's methods of calculating the costs creates difficulties when comparing the costs between banks, pension funds and insurance companies which provide pension schemes.

In 2012 pension providers were obliged to inform clients about annual costs regarding their pension funds both in DKK and as a percentage of assets. This has enabled the consumers to better navigate the pension market and avoid unnecessarily expensive providers. However many providers only disclose the cost to their own customers, making it difficult for consumers to assess and compare costs of the different providers.

In 2012 the Danish Insurance Association introduced a public website to support the consumers in this regard. The website displays certain information about pension products provided by insurance companies and lateral pension funds. Using this tool and the information offered on the website, the contributor is able to make comparisons between products for

savings, insurance, service and advisory services, interest, returns and charges from all providers. The design of the website does not however help the consumers' comprehension. The information is segregated into administration costs in DKK, investment costs, contribution to provider and whether the scheme has a guarantee. The system does not give an overview of the costs but a random search on different providers presents costs between 0.58% and 1.6%.

Taxation

Contributions to life insurance contracts and unit-linked pension products are tax deductible. As mentioned above, the deductibility exemption ended in 2013 for the lump sum pension scheme "*Kapitalpension*" as an incentive for contributors to choose the new scheme "*Alderspension*". The contributions to *Alderspension* are not tax deductible and, therefore, the disbursements are also tax free. On the contrary, the reimbursements for the other pension schemes on the market are taxed as regular income between 42% and 46%. The now closed scheme *Kapitalpension* was taxed at a flat rate of 40%[100].

All pension schemes are taxed at 15.3% on pension returns. Originally known as "real interest duty" the base of the tax was expanded to include the return on assets (capital, interest and dividends), with tax rates varying and determined by asset type. In 2001 the tax rates was harmonised to 15% for all pension assets and increased to 15.3% in 2012.

The Danish taxation scheme on contributions, assets and pay-outs is rationalized in the following table:

[100] This type of schemes are still active for people who were included and who have paid from a date before 2013.

Table DK 1. Taxation on Pension Schemes				
Pension Vehicle	**Life assurance contract**	**Unit-linked pension product**	**Personal pension "Rate pension"**	**Personal pension "Alderspension"**
Contributions	Tax deductible		Tax deductible Up to 53,500 DKK a year[101]	Non deductible Max contribution 29,600 DKK a year[102]
Tax on the investment	Interest, dividends, earnings and losses are taxed at 15.3%[103]			
Pay-out[104] [105]	**Taxed like personal income on average: 42% to 46%[106]**			**Tax free**

Source: Better Finance Research

Pension Returns

The aggregated information for investment returns for pension savers is not available. Although life insurance companies, lateral pension funds, company pension schemes and banks are obliged to provide this information to their members, the aggregate form is not publicly accessible.

The information offered in 2016 by the Danish Financial Supervisory Authority, *Finanstilsynet*[107], - which is part of the Ministry of Industry, Business and Financial Affairs – does not include information on the return on investments before tax (N1, N1E, N1F).

[101] http://www.skm.dk/skattetal/beregning/skatteberegning/beloebsgraenser-i-skattelovgivningen-der-reguleres-efter-personskattelovens-%C2%A7-20-2016-2017.
[102] http://www.skm.dk/skattetal/beregning/skatteberegning/beloebsgraenser-i-skattelovgivningen-der-reguleres-efter-personskattelovens-%C2%A7-20-2016-2017
[103] http://www.skat.dk/skat.aspx?oId=109805&chk=214548.
[104] Special tax on high pensions, i.e. more than DKK 362,800 (€48,666.72) in 2010 (limit will be adjusted).
[105] Pay out exceeding the limit is taxed at 6% in 2012. The tax will decrease 0.5% per year until it becomes zero by 2020.
[106] With a marginal tax rate up to 60%.
[107] https://www.finanstilsynet.dk/da/Tal-og-Fakta/Statistik/Noegletal

The following table shows the return on investment before tax on pension returns from 2011 to 2015, as it used to be published by *Finanstilsynet*:

Table DK 2 - Life insurance business and lateral pension funds

Return on investment before tax on pension returns - Annual Key Performance Indicators (in %)

Company	2011	2012	2013	2014	2015
AP Pension Livsforsikringsaktieselskab	16.20	9.5	-1.7	13.9	2
Arbejdstagernes Pensionskasse - SISA	1.70	9.90	7.90	9.90	3.80
Arkitekternes Pensionskasse	2.90	13.10	8.30	10.20	5.10
BANKPENSION Pensionskasse for finansansatte	-0.31	12.33	4.40	9.00	2.30
BP Livsforsikringsselskab A/S	0.00	1.08	1.39	3.60	na
Danica Pension, Livsforsikringsaktieselskab	6.10	8.60	-0.10	12.70	0.70
Danske civil- og akademiingeniørers Pensionskasse	0.10	11.40	7.80	8.10	5.10
Finanssektorens Pensionskasse	4.30	na	na	na	na
Forsikrings-Aktieselskabet ALKA Liv II	2.40	2.20	1.00	0.50	0.30
Forsikringsselskabet Alm. Brand Liv og Pension A/S	8.30	8.00	2.30	9.20	1.10
Forsikringsselskabet SEB Link A/S	-3.80	-2.10	na	na	na
FunktionærPension, Pensionsforsikringsaktieselskab	16.10	15.00	na	na	na
Industriens Pensionsforsikring A/S	4.00	11.60	-0.80	12.10	2.60
Juristernes og Økonomernes Pensionskasse	14.30	6.20	4.40	8.00	3.90
Livsforsikringsselskabet A/S	4.44	4.08	5.53	na	na
Lægernes Pensionskasse	11.60	8.40	6.60	9.20	1.80
Lærernes Pension. Forsikringsaktieselskab	3.84	11.45	4.96	12.62	2.11
MP Pension - Pensionskassen For Magistre & Psykologer	3.80	12.70	8.30	10.20	4.40
Nordea Liv & Pension,	6.50	9.10	0.35	13.87	0.00

livsforsikringsselskab A/S					
Nykredit Livsforsikring A/S	2.90	4.40	3.60	0.90	-0.30
PenSam Liv forsikringsaktieselskab	10.80	12.00	2.90	10.80	2.20
PensionDanmark Pensionsforsikringsaktieselskab	13.30	7.90	1.20	11.30	3.10
Pensionskassen for Apotekere og Farmaceuter	3.06	9.84	5.37	7.75	na
Pensionskassen for Børne- og Ungdomspædagoger	4.72	8.06	1.68	10.42	1.73
Pensionskassen for Farmakonomer	3.61	9.10	5.38	9.74	2.28
Pensionskassen for Jordbrugsakademikere og Dyrlæger	3.30	12.70	8.90	10.50	4.70
Pensionskassen for Kontorpersonale	8.64	14.09	4.73	na	na
Pensionskassen for Lægesekretærer	9.14	13.88	4.52	na	na
Pensionskassen for portører	8.90	12.70	na	na	na
PENSIONSKASSEN FOR SOCIALRÅDGIVERE , SOCIALPÆDAGOGER OG KONTORPERSONALE	10.25	13.71	4.23	10.84	1.62
Pensionskassen for Sundhedsfaglige	9.12	13.98	4.52	10.80	1.62
Pensionskassen for Sygeplejersker og Lægesekretærer	9.44	13.70	4.24	11.05	1.85
Pensionskassen for teknikum- og diplomingeniører	0.70	12.20	-0.40	19.00	0.40
Pensionskassen for trafikfunktionærer og amtsvejmænd m.fl.	9.30	12.30	na	na	na
Pensionskassen PenSam	11.60	12.00	0.70	14.90	2.70
PFA Pension, forsikringsaktieselskab	10.70	10.18	-1.09	14.80	1.90
PFA Soraarneq,	5.80	5.50	-2.50	17.40	0.30

forsikringsaktieselskab					
PKA+Pension forsikringsselskab A/S	2.36	9.65	3.98	6.06	2.21
PMF-Pension, Forsikringsaktieselskab	22.80	na	na	na	na
Sampension KP Livsforsikring A/S	18.70	11.40	-1.20	21.47	0.69
SEB Pensionsforsikring A/S	5.60	10.20	3.20	11.10	1.80
SHB Liv Forsikringsaktieselskab	41.61	na	na	na	na
Skandia Link Livsforsikring A/S	1.90	6.80	-2.70	3.00	2.00
Skandia Livsforsikring A A/S	9.50	7.60	-1.80	14.80	0.05
Skandia Livsforsikring A/S	-1.50	7.30	0.50	na	na
Topdanmark Link Livsforsikring A/S	-2.30	12.80	na	na	na
Topdanmark Livsforsikring A/S	1.40	7.00	5.00	9.10	1.50
Topdanmark Livsforsikring II A/S	23.00	19.00	na	na	na
Topdanmark Livsforsikring III A/S	3.70	2.70	na	na	na
Topdanmark Livsforsikring V A/S	10.60	11.40	na	na	na
XX - Livsforsikringsselskaber og tværgående pensionskasser	9.11	10.47	1.88	12.95	1.80

Source: Finanstilsynet

Contrary to previous years, where this information was shown for a period of five years, the numbers for 2016 are not displayed in the same way. Therefore, it is very complicated to make an adequate comparison of the real net returns.

From 2016 pension scheme providers are required by new legislation (Regnskabsbekendtgørelsen, Kapitel 4, par. 96)[108] to replace the old N1 indicator with return on average interest rate products. In another section of that document (Kapitel 1, par. 5), it is stated that the companies are exempt from making five-year comparisons of key indicators if this is not practical. A comparison between key indicators regarding returns for previous years and 2016 are therefore not possible.

Nevertheless, the Danish Financial Supervisory Authority publishes some numbers on the returns on market rate products and returns on average

[108] https://www.retsinformation.dk/eli/lta/2015/937

interest rate products. An analysis of both set of data will allow us to have an adequate perspective of the real returns that Danish citizens receive for their pensions. However, without knowing the individual indicator's share of the total return it is impossible to create the aggregated return for both products to compare with historical returns. Both the return on average interest rate products and return on market rate products are included in this report to give as close as possible an approximation of the current aggregated return as possible:

Table DK3. Returns on average interest rate products, 2016 (in %)

Selskabsnavn (Company)	2016
AP Pension Livsforsikringsaktieselskab	6,7
Arkitekternes Pensionskasse	7,5
Danica Pension, Livsforsikringsaktieselskab	6,5
Danske civil- og akademiingeniørers Pensionskasse	6,7
Forsikrings-Aktieselskabet ALKA Liv II	
Forsikringsselskabet Alm. Brand Liv og Pension A/S	6,7
Industriens Pensionsforsikring A/S	8,3
Juristernes & Økonomernes Pensionskasse	6,6
LÆGERNES PENSION - pensionskassen for læger	8,3
LÆRERNES PENSION. FORSIKRINGSAKTIESELSKAB	11,3
MP PENSION - PENSIONSKASSEN FOR MAGISTRE & PSYKOLOGER	8,1
Nordea Liv & Pension, livsforsikringsselskab A/S	5,9
Norli Pension Livsforsikring A/S	4,8
Nykredit Livsforsikring A/S	0
PenSam Liv forsikringsaktieselskab	8
PensionDanmark Pensionsforsikringsaktieselskab	5,3
Pensionskassen for Børne- og Ungdomspædagoger	7,6
Pensionskassen for Farmakonomer	6,6
Pensionskassen for Jordbrugsakademikere og Dyrlæger	7,9
PENSIONSKASSEN FOR SOCIALRÅDGIVERE , SOCIALPÆDAGOGER OG KONTORPERSONALE	8,3
Pensionskassen for Sundhedsfaglige	8,5

Pensionskassen for Sygeplejersker og Lægesekretærer	9,1
Pensionskassen for teknikum- og diplomingeniører	8,7
Pensionskassen PenSam	8,3
PFA PENSION, FORSIKRINGSAKTIESELSKAB.	6,6
PKA+Pension forsikringsselskab A/S	5,5
Sampension KP Livsforsikring A/S	8,7
SEB Pensionsforsikring A/S	7,8
Skandia Link Livsforsikring A/S	3,3
Topdanmark Livsforsikring A/S	5,2
Tryg Livsforsikring A/S	
XX - Livsforsikringsselskaber og tværgående pensionskasser	7,58

Source: Finanstilsynet

Table DK4. Returns on market rate products, 2016 (in %)

Selskabsnavn (Company)	2016
AP Pension Livsforsikringsaktieselskab	6,50
Arkitekternes Pensionskasse	
Danica Pension, Livsforsikringsaktieselskab	5,50
Danske civil- og akademiingeniørers Pensionskasse	6,90
Forsikrings-Aktieselskabet ALKA Liv II	
Forsikringsselskabet Alm. Brand Liv og Pension A/S	
Industriens Pensionsforsikring A/S	8,10
Juristernes & Økonomernes Pensionskasse	
LÆGERNES PENSION - pensionskassen for læger	
LÆRERNES PENSION. FORSIKRINGSAKTIESELSKAB	0,00
MP PENSION - PENSIONSKASSEN FOR MAGISTRE & PSYKOLOGER	
Nordea Liv & Pension, livsforsikringsselskab A/S	6,10
Norli Pension Livsforsikring A/S	
Nykredit Livsforsikring A/S	0,00
PenSam Liv forsikringsaktieselskab	
PensionDanmark Pensionsforsikringsaktieselskab	3,80
Pensionskassen for Børne- og Ungdomspædagoger	8,50
Pensionskassen for Farmakonomer	
Pensionskassen for Jordbrugsakademikere og Dyrlæger	
PENSIONSKASSEN FOR SOCIALRÅDGIVERE , SOCIALPÆDAGOGER OG KONTORPERSONALE	
Pensionskassen for Sundhedsfaglige	
Pensionskassen for Sygeplejersker og Lægesekretærer	
Pensionskassen for teknikum- og diplomingeniører	6,20
Pensionskassen PenSam	
PFA PENSION, FORSIKRINGSAKTIESELSKAB.	6,50
PKA+Pension forsikringsselskab A/S	
Sampension KP Livsforsikring A/S	7,20
SEB Pensionsforsikring A/S	6,80
Skandia Link Livsforsikring A/S	1,80
Topdanmark Livsforsikring A/S	10,30
Tryg Livsforsikring A/S	
XX - Livsforsikringsselskaber og tværgående pensionskasser	6,16

Source: Finanstilsynet

In the absence of an aggregated returns rate, for which we need to know the total asset size of the company's pension funds and life insurance contracts, it is better to look at the aggregated data from the OECD.

The return on participants' funds after expenses and inflation but before tax can be found in table DK4. Unit-linked products are not covered by these aggregated data.

The OECD 2015 reports on real net rate of return on investments for pension funds from December 2014 to December 2015, which was 0.8%. Contrary to the year before, where there was high growth (16.7%). This is linked to the relatively low presence of shares in the asset allocation of Danish pension funds (e.g. under 20%, and a far cry from other EU countries such as Belgium, Finland, Poland and Austria, who have double the percentage of shares in their asset composition). The Danish performance in this period is the highest among the OECD countries.

Table DK 4. Pension funds' real average net annual rate of investment returns, 2002 to 2016 (after inflation, before taxes) in %

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Avg 2002 - 2016
-6,7	6,3	11,5	14,7	1,4	-3,3	5,1	1,2	7,1	12,2	5,3	-4,5	16,6	0,8	7,8	4,82

*Source: OECD - Pension Market in Focus 2016**

**For 2005 to 2015 the OECD reports (page 17) that the numbers shown are between Dec 2005 and Dec 2015. However, in the methodological notes (page 41) is mentioned another period (from June 2005 to June 2015). BETTER FINANCE's computations assume the period from Dec 2005 to Dec 2015*

Finally, as regards the ATP, the Danish supervisor *Finanstilsynet* has praised this scheme for having achieved, in the 10-year period from 2002 to 2011, an average market return, after tax and expenses, of 8.8%, which is 3.9% higher than the average for the Danish life insurance and pension companies. *Finanstilsynet* stated that the size of future pensions depends on creating a high, stable return year on year.

According to ATP, there are three factors explaining their impressive performance. Firstly, the use of bonds and interest rate swaps to hedge the interest rate risk of the pension obligations translated into a significantly positive return due to the decline in interest rates during the period. Secondly, due to the extensive use of risk diversification and, thirdly, the fact that the ATP portfolio largely consisted of Danish equities, also contributed to this performance. Shares held by ATP outperformed the average Danish stock market performance. The Danish stock market also outperformed shares of many leading markets during the decade.

Additionally, as explained before, the very low management costs of the system certainly contributed to translating such good results into positive and significant net returns for private investors.

ATP itself claims that its singular investment strategy and cost structure enables them to outperform its local competitors (life insurance companies and lateral funds in Denmark). The contributions to ATP consist of two parts: the pensions of members account for 80% of contributions, while the remaining 20% is transferred to the bonus potential, i.e. ATP's unallocated reserves. This means that the total value creation for ATP's members comes from both sources: the guarantees and the bonus potential. Value creation from the bonus potential illustrates the return on the bonus potential and is driven primarily by the return on investment, and also by matters related to hedging. This 'total value creation' (a weighted average between the two above mentioned components) was 4.4% in 2015[109].

Conclusion

The Danish government has strengthened the pension's pot in the last years, protecting with it the real value of beneficiaries. The two main reforms (1990 and 2012) introduced in the pension system contributed to the Danish scheme continued shift from a mainly public system to a partially private one. Moreover, the addition of the basic state pension ("*Folkepension*" & ATP), the occupational pensions, and the private pensions, constitutes an adequate system.

There have been improvements, in the last few years, regarding dissemination of pension scheme information to consumers. Of the main ones is the web-based tools launched by the Danish Insurance Association[110], which represents a substantial improvement on the previous situation where little information was available on pension schemes to the comsumers.

[109] https://www.atp.dk/sites/default/files/atp_koncernen_aarsrapport_2016.pdf
[110] http://www.dr.dk/nyheder/penge/flere-og-flere-proever-forstaa-deres-pension

On charges, there is little information. Therefore, the research and comprehension of the pension vehicles is more complicated. There is room for improvements in this respect.

The taxation of investment returns has a real impact on net investment returns to savers. As it has been shown in this article there exists a governmental interest in passing from the old lump-sum ("*kapitalpension*") to the new one ("*Alderpension*"). That is the reason why this last type of plans are tax deducted and, therefore, the pay-out is tax free while the other plans are taxed, and new contributions to "*kapitalpension*" is closed down. However, the information on taxes are public and well indicated.

There is little information displayed by the pension providers (pension funds, insurance companies and banks) about the performance and returns of the pension products. Due to this fact it is difficult for researchers (and consumers) to make an adequate comparison. As it is obvious, it is important that consumers, when considering the different possibilities for private pension savings, have access to detailed information about the investment policies, the costs and the tax regime in order to be able to make an informed choice in regard to pension schemes or a pension provider.

Finally, as it has been already mentioned, the information on the return on investments before tax on pension returns (N1, N1E, N1F) is missing this year, which makes the analysis of the pension system in Denmark problematic.

Pension Savings: The Real Return

2017 Edition

Country Case: Estonia

Introduction

The Estonian old-age pension system is based on the multi-pillar approach, which consist of three main pillars:

- Pillar I – State pension organized as a mandatory Pay-As-You-Go (PAYG) scheme;
- Pillar II – Funded pension organized as mandatory funded defined contribution (DC) based scheme;
- Pillar III – Supplementary pension organized as a voluntary individual pension scheme.

The Estonian multi-pillar pension reform began in 1998 with the introduction of legislation that, as a first step, established the third voluntary pension pillar. The second or "mandatory" pension pillar, which funds individual private retirement accounts with worker contributions and government matching contributions, was legislated in 2001 and became operational on 1 July 2002.

Table EST 1. Multi-pillar pension system in Estonia		
Pillar I State Pension	**Pillar II** Funded pension	**Pillar III** Supplementary pension
Mandatory	Mandatory	Voluntary
PAYG	Funded	Funded
Financed by social tax	DC	DC
Benefits paid via State Pension Insurance Fund	Basic benefit	Complementary benefit
Minimum pension + employment related	Individual pension accounts	Individual pension contracts
Publicly managed by Social Insurance Board (government entity)	Privately managed pension funds	Two vehicles: 1. Privately managed pension funds 2. Pension insurance

Source: own elaboration, 2017

Pillar I – State Pension

State pension (pillar I) should guarantee the minimum income necessary for subsistence. It is based on the Pay-As-You-Go principle of redistribution, i.e. the social tax paid by today's employees covers the pensions of today's pensioners.

Legislatively, the state pension is governed by the State Pension Insurance Act. The act is part of the pension system reform, which came into force on 1 January 2002. Since then, the act has been amended more than 30 times.

The state pension is paid out of the social tax. Employers pay 33% of the salary of each employee as social tax, 13% of which is for health insurance and 20% (16% in case of participation in pillar II) is for the pensions of current pensioners.

There are two kinds of state pension: the pensions that depend on work contribution (the old-age pension, the pension for incapacity for work and the survivor's pension) and the national pension. A person is entitled to the state old-age pension, if his or her length of employment in Estonia is at

least 15 years. If the period is shorter, they are not entitled to the old-age state pension and might fall under the national pension.

The old-age pension financed through pillar I is calculated as a sum of three components:

1. Basic amount;
2. Pensionable service period;
3. Insurance contributions.

The basic amount as a first component of state pension is aimed at achieving basic solidarity and achieving at least a minimum pension. The solidarity state pension insurance is represented by the basic amount (base component) of a pension, which is equal to all, irrespective of the person's salary.

The pensionable service period component represents the part of state pension, which depends on the length of employment (i.e. years of employment and years deemed equal to employment, e.g. raising of children, compulsory military service, etc.) of the pensioner, which entitle him or her to the pension. Period of pensionable service is taken into account up until 31 December 1998. The monetary value of one year of employment in a monthly pension is € 4,964. This part of the state pension is deemed to diminish in future years (temporary component) as the third component (insurance contributions) will account for a larger portion of the total state pension amount.

The third component (insurance contributions) depends on how much social tax has been paid on the salary of the pensioner since 1 January 1999. The amount of the insurance component is calculated on the basis of the sum of annual factors of pension insurance. An annual factor shows the ratio of the social tax paid on the person's salary during the calendar year to the social tax paid on the average salary of the state. If social tax is paid on the average salary, the annual factor is 1.0 and its monetary value in a monthly pension is € 5,514, the same as the pensionable service period component.

The relative importance of the insurance component increases with every year, which means that the state old-age pension depends more and more on the amount of social tax paid for each specific person or the amount of his or her salary during his or her entire life of employment. Thus pillar I limits the solidarity among individuals.

The solidarity part of the state pension insurance involves the redistribution mechanism of income from the persons with high salaries to the persons with low salaries. Firstly, the base component of a pension is equal to all, irrespective of the person's salary. Secondly, the law also procures the minimum amount of the old-age pension – currently € 140.81– irrespective of the paid social tax.

Statutory retirement age is 63 for men and women, however on 7 April 2010, the Estonian Parliament adopted the Act to amend the State Pension Insurance Act and the related acts, establishing the general pensionable age of 65 years. The transition period, starting from 2017 is provided for the people, who were born from 1954 to 1960. For those people, the retirement age will be gradually increasing by three months for every year of birth, and reaches the age 65 in 2026. The amendment came into effect on 1 January 2017. Further increases in retirement age after the year 2026 are possible based on the increase in life-expectancy.

The **national pension** (also called National Pension Rate – NPR) procures a minimum pension to those persons who are not entitled to a pension based on their work contribution, considering they have lived in Estonia for at least five years before applying for the pension. The amount of the national pension as of 1 April 2017 is € 175.94. Generally, no additional benefits are provided via the state pension scheme.

Indexation of state pensions is performed by the Social Insurance Board with the aim to adjust the level of state pensions so they correspond to the development of the cost of living and receipt of social tax (growth of the salary fund). Once a year (1 April of each year) pensions are multiplied by an index that is dependent for 20% on the changes in the consumer price index (cost of living) and 80% on the yearly increase in received social tax

(labor market conditions). The indexation introduced in 2002 was up until 2008 based with equal weight (50%/50%) on increases in consumers' price index and social tax contributions. It was changed in 2007 to todays 20% and 80% respectively. According to the Pension Insurance Act, the Government of Estonia has to analyze the impact of the increase in pensions on financial and social sustainability, and every five years suggest any need for indexation changes to the parliament.

The average monthly old-age pension paid from pillar I in 2016 was € 386.

Pillar II – Funded pension

The funded pension and supplementary funded pension put a person in charge of his or her own future – the amount of his or her pension depends on how much he or she has put aside for retirement during their working life. The funded pension is legislated by the Funded Pensions Act, which came into force on 1 May 2004 and replaced the Funded Pension Act effective since 1 October 2001. The funded pension pillar (pillar II) started its operation in July 2002.

The funded pension is based on accumulation of assets (savings) – a working person itself saves for his or her pension, paying 2% of the gross salary to the selected pension fund. In addition to the 2% that is paid by the individual, the state adds 4% out of the current social tax that is paid by the employee, and retains 29%. The state pension insurance component of a person, who has subscribed to the funded pension, is also respectively smaller (for the years when 16% was received for state pension instead of 20%).

The employer of a person who has subscribed to the funded pension shall withhold 2% of the person's salary and transfer it to the Tax and Customs Board. To that amount, the state shall add 4% out of social tax, retaining 29% of the social tax. Therefore, 6% of the person's income is transferred to the pension account of the person, while the person himself or herself has paid only 2%.

Subscription to the funded pension is mandatory for persons presently entering the labor market, i.e. persons born in 1983 or later. The funded pension was voluntary for those born between the years 1942 and 1983. Subscription was possible within seven years from 1 May 2001 until 31 October 2010. By submission of a subscription application, person assumes a binding obligation – a person who has once subscribed will never be able to give up the funded pension.

Each pillar II participant has his/her own individual pension account that stores records regarding contributions and accumulated savings. A pension account is a special type of securities account, in which there are only units of mandatory pension funds and data related to these units, as well as data about the unit-holder.

Pursuing the impact of financial crisis on the Estonian economy, temporary change of contributions has been adopted that lowered the amount of new contributions flowing into the mandatory pension funds. Through amendments to the Funded Pensions Act and the Social Tax Act (entered into force on 28 May 2009), temporary changes were adopted in connection with the contributions to pension pillar II for the years 2009 to 2017. Contributions to a funded pension were suspended in the period from 1 June 2009 to 31 December 2010. Those interested could have continued making contributions to funded pension themselves from 2010 based on an application. From 2011, the contributions continued in half-volume, i.e. the state contributed 2% and the savers themselves 1%. Customary contributions to pillar II (2% + 4%) were restored in 2012. To those who voluntarily continued their contributions in 2010 and 2011, the state paid an additional 6% during 2014 - 2017. Those who did not submit applications for continuing the contributions in 2010 could submit an application in 2013, if desired, to pay an increased contribution of 3% during 2014–2017, to which the state added 6%. Those persons shall have the right to submit an application to increase their contribution from 2% to 3% (in this case the scheme 3% + 6% shall be applied). The prerequisite for the latter is at least 5% nominal economic growth of the Estonian economy.

In case this prerequisite is not fulfilled, the state is entitled to postpone the increasing of the contribution rate.

Pillar III – Supplementary pension

Supplementary funded pension, or pillar III, is a part of the Estonia pension system and is governed by the same act as pillar II, the Funded Pension Act.

Supplementary pension has been introduced with the objective to help maintain the same standard of living and more flexibility in securing stream of income after one reaches the age of 55. State pension and pillar II pension are estimated to deliver a replacement ratio of approximately 45%. Supplementary pension has been designed to help achieved a recommended level of 65% replacement ratio of individual´s previous income in order to maintain the established standard of living.

Supplementary pension is based on a voluntary basis for all persons and on each person's voluntary decision to start saving either by contributing to a voluntary pension fund or by entering into a respective supplementary pension insurance contract with a life insurance company.

Amount of contributions is determined solely by the free choice of an individual and can be changed during the duration of accumulation phase. There is a possibility to discontinue contributions (as well as to finish the contract).

The supplementary funded pension contracts can be made with life insurers as pension insurance, or by acquiring pension fund units from fund managers. An individual can choose between three different pension products:

1. Pension insurance with guaranteed interest,
2. Pension insurance with investment risk (unit-linked),
3. Pension fund.

Pension Vehicles

Pillar II – Funded pension

The only allowed pension vehicles by the Funded Pension Act for mandatory pillar II are the mandatory pension funds. Mandatory pension funds differ in their investment strategy and are divided into four groups according to the investment risk they carry:

1. Conservative funds
2. Balanced funds
3. Progressive funds
4. Aggressive funds

Structure of savers, assets under management and market share for respective groups of mandatory pension funds is presented in the table below.

Table EST 2. Mandatory Funded pension vehicles market share

Type of mandatory pension fund	Assets under management (€ mln.)	Market share based on AuM (%)	Number of participants	Market share based on participants (%)
Conservative funds	207.48	7.29	42,354	6.85
Balanced funds	381.41	13.41	67,107	10.86
Progressive funds	1,884.21	66.23	360,907	58.40
Aggressive funds	371.94	13.07	147,612	23.89
TOTAL	**2,845.04**	**100**	**617,980**	**100**

Source: own calculations based on pensionikeskus.ee data, 2017 (data as of 31.12.2016)

Asset allocation of mandatory pension funds is legislatively regulated, where the quantitative investment limits are imposed on four different types of mandatory pension funds:

- max. 75% equity (changed from 50% in 2009), of which only 50% may be directly in shares (up to 75% in the case of equity funds);
- max. 40% real estate and real estate funds (changed from 10% in 2007);
- max. 50% venture capital funds (changed from 30% in 2007);
- max. 30% outside the EEA or OECD area.

The above-mentioned four main types of mandatory pension funds that members can choose from, are distinguished by their equity exposure.

Conservative mandatory pension funds are obliged to invest 100% of the assets into bonds, financial market instruments, deposits, investment funds, securities and deposits, and other similar assets. Conservative mandatory pension funds are not allowed to invest in equities and immovables, nor respective investment funds. Conservative strategy focuses on bonds and its objective is the preservation of capital and moderate growth primarily in shorter horizon.

Balanced mandatory pension funds invest in different types of assets under specific limitations:

- up to 25% of the assets of the funds can be invested in equities, equity funds and other instruments similar to equity;
- the remaining part of the assets of the funds is invested in bonds, money market instruments, deposits, immovables and other assets.

Progressive mandatory pension funds invest in different types of assets from the objective under quantitative limits:

- up to 50% of the assets of the funds are invested in equities, equity funds and other instruments similar to equity;
- the remaining part of the assets of the funds is invested in bonds, money market instruments, deposits, immovables and other assets.

Aggressive mandatory pension funds introduced in 2010 are eligible to invest the highest portion of the assets into equities. The following quantitative limits on equities are used:

- up to 75% of the funds market value may invest in equity funds, equity and other instruments similar to equity;
- the remaining part of the assets of the fund is invested in bonds, money market instruments, deposits, immovables and other assets.

In Estonia, more than 600,000 people have joined pillar II funds, which is almost 96% of the economically active population. Almost 80% of them have opted for pension funds with an active investment strategy pursuing more aggressive investment strategies tied with the significantly higher portion of equities in portfolio.

Even more interesting is the analysis of pension vehicles (preference of pension funds) based on the income level of participants. Wealthier and higher earnings individuals prefer conservative funds with less equity exposure. Lower income groups on the other hand tend to prefer riskier pension funds with more equity exposure and more market risk.

Comparing the pillar II market share development in 2016, more contribution in-flows could be seen in aggressive funds and less into conservative and balanced funds.

Pillar III – Supplementary pension

Under the regulation, two types of pension vehicles for supplementary pension (pillar III) are allowed:

1. Voluntary pension funds
2. Supplementary pension insurance contracts

For supplementary pension insurance vehicle, two product options are available:

- Pension insurance at a guaranteed interest rate;
- Pension insurance with investment risk (unit-linked).

Considering the size of pillar III based on the coverage of economically active population, the Estonian pillar III amounts to only about 17% of the economically active population.

There are no investment restrictions regarding asset classes for voluntary (supplementary) pension funds.

Table EST 3. Supplementary Pension vehicles market share		
Supplementary pension vehicles	Assets under management / Reserves (in Eur)	Market share based on AuM / reserves (in %)
Voluntary pension funds	141,680,111	37.59
Supplementary pension insurance contract	235,270,000	62.41
TOTAL	376,950,111	100.00

Source: Own calculations based on pensionikeskus.ee data, 2017 (data as of 31.12.2016)

Charges

Pillar II – Funded pension

Pension funds are offered by asset management companies, which are managed under the Investment Funds Act and as such, the funds are considered a typical UCITS funds with special regulation via the Funded Pension Act.

A saver contributing into the pension fund receives the fund units, which represent the unit-holder's share in the fund's assets. Each pension fund can have only one class of units. The nominal value of a unit at the beginning of the fund operation is €0.64. The rights and obligations attached to a unit with respect to a unit-holder will enter into force upon issuing a unit and will terminate upon redeeming a unit. A unit is deemed issued upon registration thereof with the register, and is deemed redeemed upon cancellation thereof with the register. Ownership of a unit is proved by an entry in the register.

As the pension funds are considered typical UCITS funds, fees and charges typical for UCITS funds are applied to the pension funds with some legislative restrictions.

According to paragraph 151 of the Investment Funds Act, the following charges can be applied to the expense of a mandatory pension fund:

- management fe
- exit fee (unit redemption fee)
- transactions costs

Considering the individual saver, additional charges are paid from the individual value of pension savings:

- unit redemption fee
- entry fee (unit issuance fee, resp. contribution fee)

A comparison table of the most current charges applied by the mandatory pension funds asset management companies and individual fees paid by a saver is presented below. There can be seen a slight decrease in management fees in 2016 compared to 2015.

Table EST 4. Mandatory Pension Funds´ Fees			
Fund / Charge type		**Management Fee 2015**	**Management Fee 2016**
Conservative funds	Pension Fund LHV XS	0.74%	**0.72%**
	Pension Fund Danske Pension Interest	0.65%	N/A
	SEB Conservative Pension Fund	0.95%	0.95%
	Swedbank Pension Fund K1	0.62%	**0.61%**
	Nordea Pension Fund C	0.85%	**0.84%**
	Pension Fund LHV S	0.98%	**0.96%**
Balanced funds	Pension Fund LHV M	1.31%	**1.28%**
	Pension Fund Danske Pension 25	1.35%	N/A
	Swedbank Pension Fund K2	0.97%	**0.94%**
	Nordea Pension Fund B	1.42%	**1.40%**
	SEB Optimal Pension Fund	1.30%	1.30%
Progressive funds	Pension Fund Danske Pension 50	1.72%	N/A
	Pension Fund LHV L	1.64%	**1.59%**
	Nordea Pension Fund A	1.51%	**1.50%**
	SEB Progressive Pension Fund	1.50%	1.50%
	Swedbank Pension Fund K3	1.03%	**1.00%**
Aggressive funds	Pension Fund LHV XL	1.64%	**1.59%**
	SEB Energetic Pension Fund	1.70%	1.70%
	Swedbank Pension Fund K4	1.03%	**1.00%**
	Nordea Pension Fund A Plus	1.60%	**1.56%**
	Pension Fund LHV Index	N/A	**0.39%**
	SEB Energetic pension fund index	N/A	**0.29%**
	Swedbank Pension fund K90-99 (Life-Cycle Strategy)	N/A	**0.49%**

Source: Own research based on the terms of pension funds, 2016

The rate of the management fee and the procedure for its calculation are established in the terms and conditions of the pension fund. The rate of the management fee is expressed as a percentage of the market value of the assets of the fund. In order to limit the overall charges applied to the pension funds, there has been a 3% cap on charges introduced on most of the funds. More volatile (aggressive) funds have higher cap on charges (up to 5% p.a.).

When considering the historical changes in charges, there is a significant transparency gap. Most of the asset managers do not disclose past charges and only recent charges applied to the pension funds are disclosed. Analyzing the prospectuses, terms as well as monthly reports of the pension funds, only Swedbank fully disclosed past charges effectively applied for managed mandatory pension funds. Other pension funds disclose only recent charges, respectively charges applied from a certain period. Using the data from available prospectuses, terms and monthly reports we were able to estimate the trend in charges using the simple averaging approach.

Table EST 5. Average fees in Estonian mandatory pension funds			
Fees / Year	Management fee	Subscription fee	Redemption fee
2002	1.42%	1.50%	1.00%
2003	1.42%	1.50%	1.00%
2004	1.42%	1.50%	1.00%
2005	1.42%	1.50%	1.00%
2006	1.42%	1.50%	1.00%
2007	1.42%	1.50%	1.00%
2008	1.42%	1.50%	1.00%
2009	1.42%	1.50%	1.00%
2010	1.35%	0.00%	1.00%
2011	1.35%	0.00%	1.00%
2012	1.36%	0.00%	1.00%
2013	1.31%	0.00%	1.00%
2014	1.36%	0.00%	1.00%
2015	1.23%	0.00%	1.00%
2016	1.08%	0.00%	1.00%

Source: Own calculations based on data from pensions´ Prospectuses, Terms and Monthly Reports, 2017

Management fees are applied on a periodical basis on the expense of the pension fund, which effectively decrease the value of pension fund unit. It should be noted that their effect during the saving cycle is therefore exponential, and should be calculated using formulas for compound interest. Management fee is deducted from the fund's assets market value on a daily basis and will be paid for services provided during a preceding month. Depository fee is borne by the management company and is not directly charged on the expense of a mandatory pension fund.

Subscription as well as redemption fees are types of charges that are applied on a one-off basis, when a contribution to the fund is recorded, respectively when the saver sells the pension units to the issuer. The effect of these charges is limited to the transaction and therefore there is only cumulative effect that can be calculated as a simple summation. Subscription as well as redemption fees are also tied to the ability of savers

to switch among the pension funds during the saving period. A fund can be replaced only with another fund of the mandatory funded pension. The choice of the pension fund can be changed in two ways:

1. Directing contributions to a new fund – the units of the current fund will be retained and will continue earning in the former fund. After choosing a new fund, your future contributions will be transferred to it, i.e. units of different funds will appear side by side in your pension account.
2. Changing the pension fund units – the units of one pension fund will be replaced with the units of a new pension fund selected.

From 1 January 2011 onward, there is no minimum limit for the units upon changing a fund (before 1 January 2011 the minimum requirement was 500 units). Since 1 August 2011, it is possible to transfer to a new pension fund all or only a part (e.g. 25%, 50% or 75%) of the assets collected in the old pension fund. Upon submitting an application for changing the pension fund units, saver´s contributions are not automatically directed to a new fund. If a saver wishes to direct his/her contributions to a new fund and replace the collected units with the units of a new fund, they are required to submit two applications:

1. Selection application,
2. Unit exchange application.

Other charges refer to transfer costs and fees directly related to transactions made on account of the fund and costs related to taking loans on account of the fund (including costs related to repurchase agreements and reverse repurchase agreements and other securities-borrowing transactions). The other charges can be viewed in a standard terminology as a trading and post-trading (clearing) costs except the charges associated with the depository services. However, these charges are not known, as they are neither disclosed nor visible to the general public. Other charges also include individual services provided to the savers based on a specific request and should be charged individually to the saver asking for such services. These services typically include: application to recall inherited pension fund units, application to transfer inherited pension fund units into

the pension account of the inheritor, application for a lump sum payment from a pension fund, application for a fund pension, application to change a fund pension, etc.

Pillar III – Supplementary pension

Supplementary pension is organized in two ways: insurance contract or supplementary pension fund. The way in which charges are disclosed to the client is significantly different for both.

For insurance contracts, no charges are disclosed publicly. The terms and conditions of insurance contract cover the topic of charges. However, no charges are disclosed or even if the charges are disclosed, the structure of fees is not transparent enough to allow the calculation of the total cost ratio. In most cases, during the insurance contract validity, the insurer is entitled to change contract fees and risk payments unilaterally, with the obligation to inform the policyholder of the changes at least 30 days before such changes become effective. If the policyholder does not agree with the changes, he is entitled to terminate the contract.

The situation is different for a supplementary pension fund. All funds disclose most actual charges, which are presented in the table below. Comparing to the year 2015, there has been a slight decrease in charges especially due to the introduction of low-cost index funds.

Table EST 6. Supplementary Pension Funds´ Fees

Fund	Type of the fee	2015	2016
LHV Supplementary Pension Fund	Management fee	1.00%	1.00%
	Redemption fee	1.00%	1.00%
	Entry fee	0.00%	0.00%
	Depositary fee	N/A	N/A
Nordea Pension Fund Equity 100	Management fee	1.50%	1.50%
	Redemption fee	1.00%	1.00%
	Entry fee	1.00%	1.00%
	Depositary fee	0.19%	0.19%
Nordea Pensionifond Intress Pluss	Management fee	1.20%	1.20%
	Redemption fee	1.00%	1.00%
	Entry fee	1.00%	1.00%

	Depositary fee	0.15%	0.15%
SEB Active Pension Fund	Management fee	1.50%	1.50%
	Redemption fee	1.00%	1.00%
	Entry fee	1.00%	1.00%
	Depositary fee	0.10%	0.10%
SEB Balanced Pension Fund	Management fee	1.00%	1.00%
	Redemption fee	1.00%	1.00%
	Entry fee	1.00%	1.00%
	Depositary fee	0.10%	0.10%
Swedbank Pension Fund V1	Management fee	1.20%	1.20%
	Redemption fee	1.00%	1.00%
	Entry fee	1.00%	0.00%
	Depositary fee	N/A	N/A
Swedbank Pension Fund V2	Management fee	1.30%	1.30%
	Redemption fee	1.00%	1.00%
	Entry fee	1.00%	0.00%
	Depositary fee	N/A	N/A
Swedbank Pension Fund V3	Management fee	1.40%	1.40%
	Redemption fee	1.00%	1.00%
	Entry fee	1.00%	0.00%
	Depositary fee	N/A	N/A
LHV Pension Fund Index Pluss	Management fee	N/A	0.39%
	Redemption fee		0.00%
	Entry fee		0.00%
	Depositary fee		0.00%
LHV Pension Fund Interest Plus	Management fee	0.95%	0.95%
	Redemption fee	1.00%	1.00%
	Entry fee	0.00%	0.00%
	Depositary fee	N/A	N/A

Source: Own research based on pension funds´ documentations 2017 (data as of 31.12.2016)

Taxation

Pillar II – Funded pension

Estonia is applying an EET taxation regime for pillar II with some specifications (deductions) to the payout regime taxation, where generally the "T" regime is applied. The acronym EET stands for "exempt – exempt –

taxed" and is often used to explain taxation regime for contributions (first letter of the acronym), investment returns (second letter of the acronym) and payout phase (third letter).

Taxation of the Fund

Income or profits of the Fund are not subject to taxes at the fund level.

Taxation of unit-holders

Contributions to the Fund usually consist of two parts:

1. 2% withheld from the wages and other remuneration of a resident natural person participating in the mandatory funded pension system; in certain cases from the remuneration paid to a member of the management or supervisory body of a legal person; from the business income of sole proprietors after deductions relating to business and permitted in the Income Tax Act have been made, but annually from an amount not more than 15 times the sum of the minimum monthly wages for the taxable period; in certain cases from the remuneration or fees paid to a natural person on the basis of a contract for services, authorization agreement or another contract under the law of obligations entered into for the provision of services, and
2. the amount added by the state, which equals 4% of the sum of the resident natural person's wages and other remuneration.

The above-stated 2% withheld from wages and other remuneration is tax deductible, i.e. not subject to income tax. Specifications apply to the procedure of contributions in the years 2014 to 2017.

Exchange of a fund's unit for another unit of a mandatory pension fund and redemption of a unit to enter into an insurance contract for funded pension (pension contract) is not taxed. Insurance contract for funded pension (pension contract) and pension fund units are not treated as financial assets for the purposes of income taxation and taxation of income on these cannot be postponed.

During the payout phase, income tax is charged on payments made from the mandatory pension fund to the unit holder, the successor of the unit-holder and on payments made to the policyholder, an insured person and a beneficiary pursuant to a pension contract provided for in the Funded Pensions Act. Thus, if a unit-holder reaches retirement age, mandatory funded pension payments will be taxed together with the state (NDC PAYG pillar) pension. Estonian income tax rate since 2008 is 21%.

The taxation period for natural persons is a calendar year. In Estonia, the annual basic exemption (non-taxable amount) per year is € 1,728.

A resident unit-holder, who receives a pension, may deduct from his or her taxable income, in addition to the basic exemption, the amount of a pension paid from a mandatory funded pension or a pension paid under a social security agreement. However, there is an upper limit set in a law. The amount exceeding the deductions is taxed with the income tax rate established by law.

Taxation of successors

Payments to a successor upon redemption of units are taxed with the income tax rate established by law. Transfer of units into a successor's pension account is not taxable.

Pillar III – Supplementary pension

The effective Income Tax Act stipulates EET regime (similar to pillar II) where:

- Resident natural persons have the right to subtract the amounts paid to acquire supplementary fund units from their taxable income. The amount that is deducted may be up to 15% of the income earned in the taxation period, but no more than € 6,000.
- Income or profits of the fund are not subject to taxes at the fund level.
- Payouts from a supplementary pension fund are subject to income tax as follows:

- 10% income tax if they are made under any of the following circumstances:
  a. after the unit holder reaches the age of 55, but not before five years have passed from acquisition of the units;
  b. in the event of the unit holder's full and permanent incapacity for work;
  c. when the fund is liquidated.
- In all other cases, payouts from the fund are subject to income tax valid at the time the payout is made.

- Payouts made by an insurance company to the policyholder from the assets saved in the fund as lifelong pension payments after the policyholder turns 55 years of age are exempt from income tax.

Pension Returns

Pillar II – Funded pension

Year 2016 brought consolidation to the market, where one of the pension managers quit the market. There are five pillar II private asset managers in Estonia. Scandinavian banks are playing leading roles not only in Estonia, but generally in all Baltic States. The two uncontestable leaders (Swedbank and SEB) absorb 60-70% of the market, with exceptionally strong positions in Estonia.

Five asset managers offer 20 pension plans in Estonia (see table below). The pension plans (funds) are divided into four groups in accordance with the investment strategy they use:

1. conservative (not investing in stocks);
2. balanced or small equity funds;
3. active or medium equity funds;
4. aggressive (investing in stocks mainly).

However, two new types of funds emerged in 2016: passively managed index funds with exceptionally low fees and one target date fund offering passive life cycle strategy.

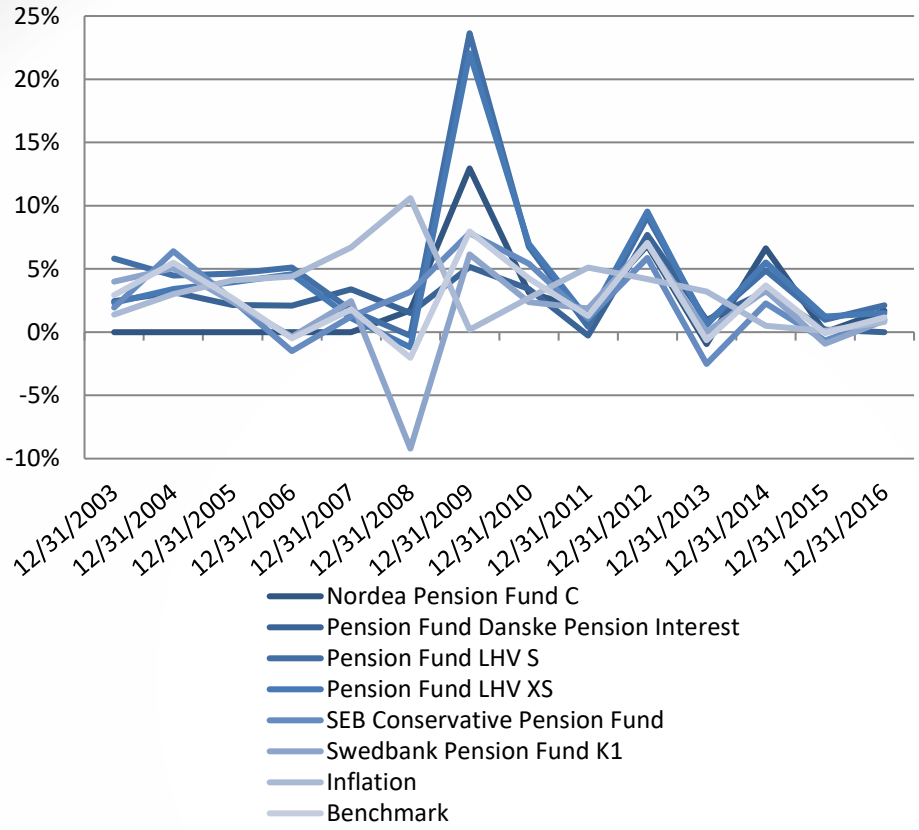
In Estonia the proportion of stocks in fund portfolios is set in increments of 25% for the four groups (zero; < 25; 25–50; 50–75). The most aggressive funds were introduced only from the year 2009. Also, some players (namely Nordea) only entered the market as of the year 2008.

It should be noted that the performance (returns and respective volatility) is closely tied to the structure of the portfolio and the level of active asset management. Active asset management should be able to lower the overall volatility of the returns while maintaining at least the same level of return as for a passive asset management approach. To which extent this is happening in Estonian mandatory pension funds can be seen in the below graphs presenting the returns (absolute and relative to the respective benchmarks).

All data presented on the pension funds´ returns are presented in net values, i.e. after all fees charged to the fund portfolio. The graphs contain also inflation on an annual as well as cumulative basis.

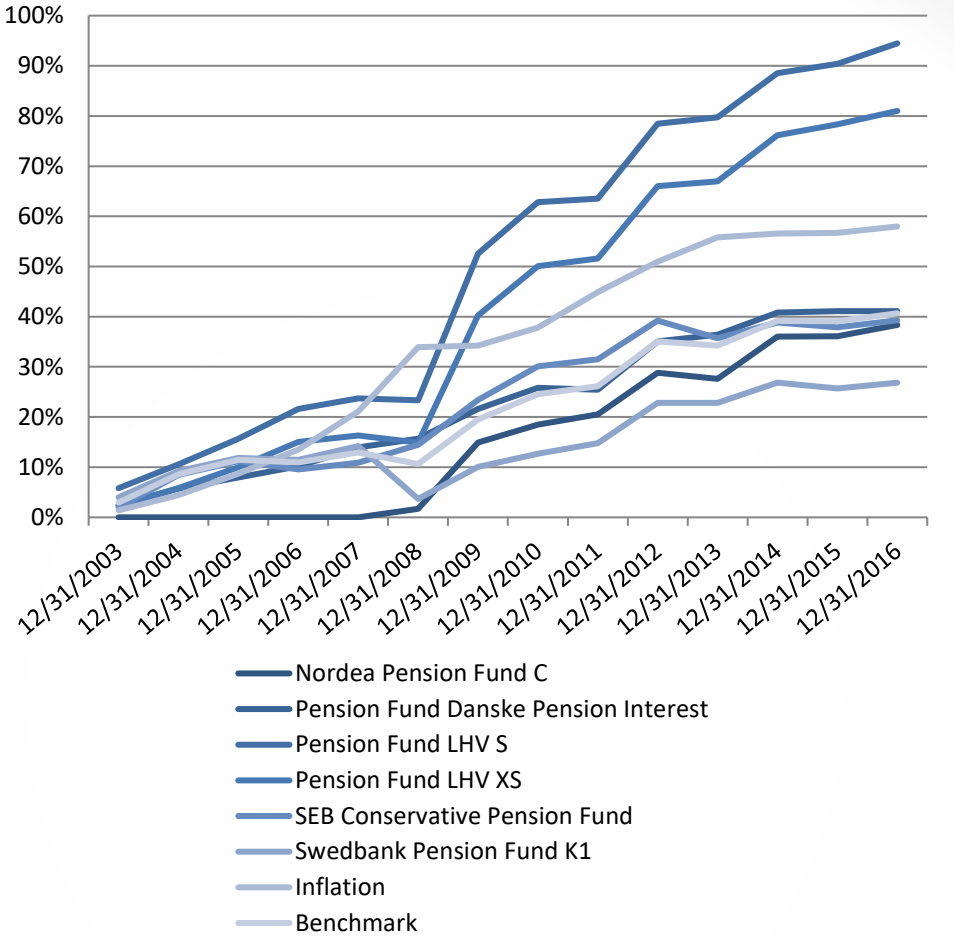
Conservative mandatory pension funds' performance on an annual as well as cumulative basis compared to their respective benchmark (EPI-00) and inflation is presented in the graphs below.

Graph EST I. Conservative Pension Funds´ Annual Performance



Source: Own calculations based on Pensionikeskus data, 2017

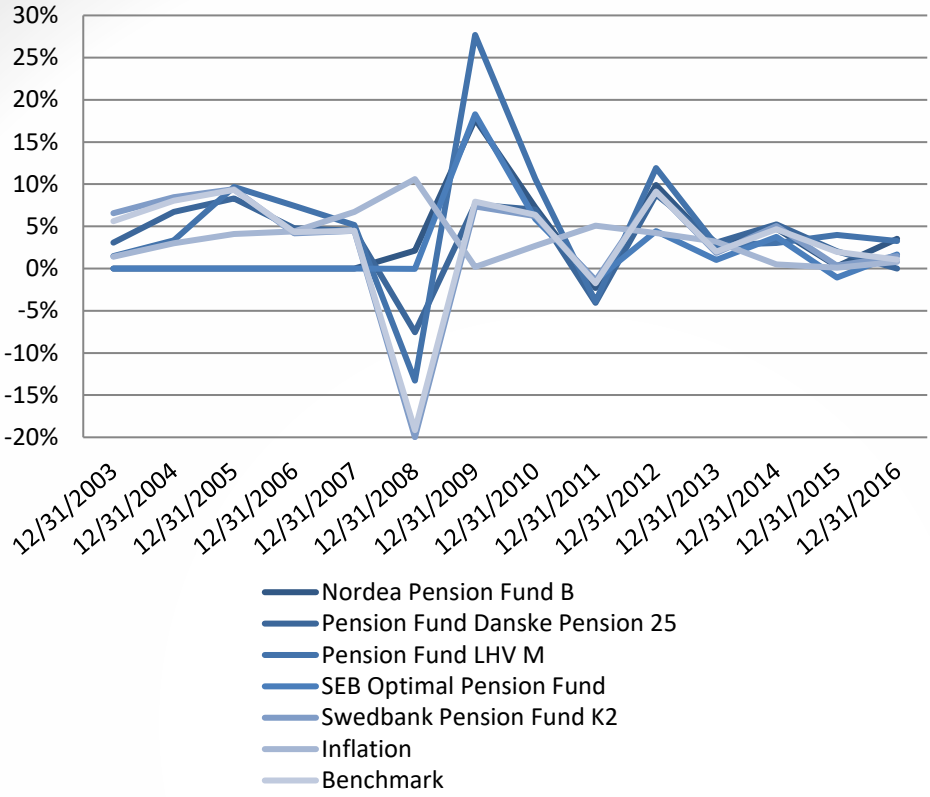
Graph EST II. Conservative Pension Funds´ Cumulative Performance



Source: Own calculations based on Pensionikeskus data, 2017

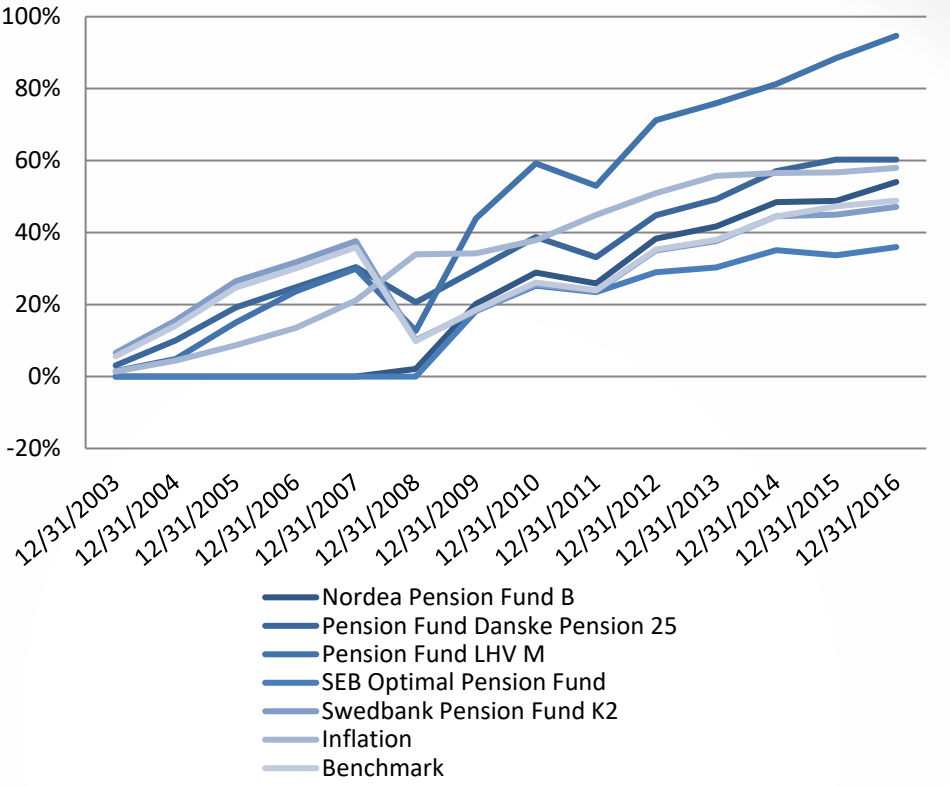
Balanced Mandatory Pension Fund´s performance (annual and cumulative) comparing to the respective benchmark (EPI-25) is presented in the graphs below.

Graph EST III. Balanced Pension Funds´ Annual Performance



Source: Own calculations based on Pensionikeskus data, 2017

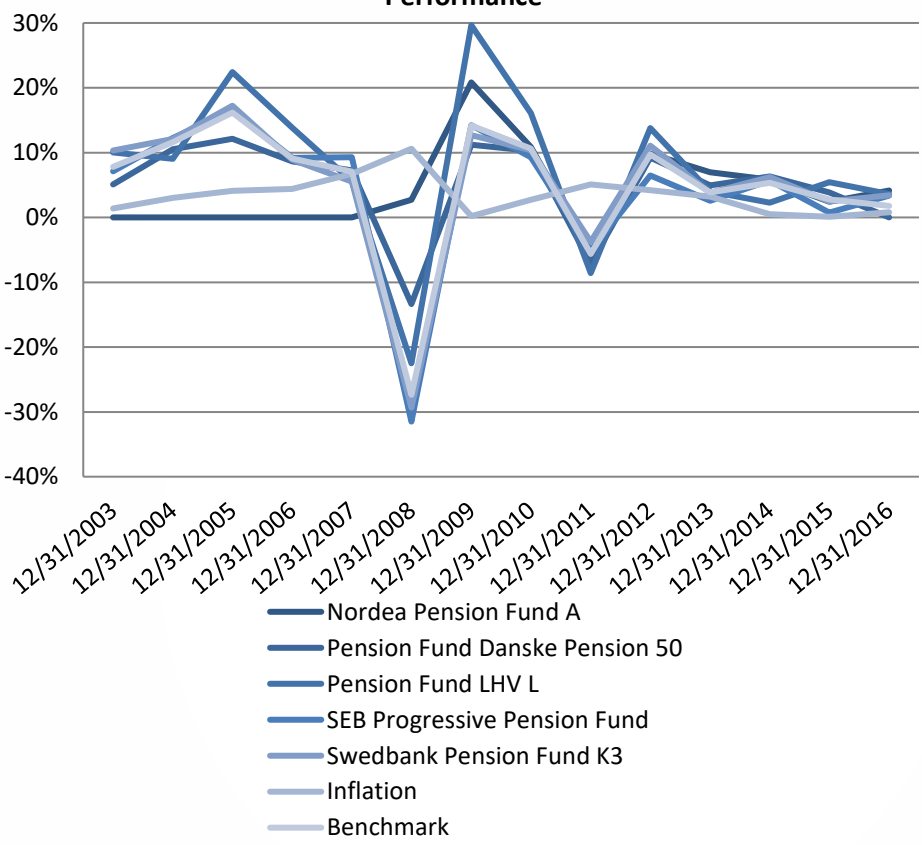
Graph EST IV. Balanced Pension Funds´ Cumulative Performance



Source: Own calculations based on Pensionikeskus data, 2017

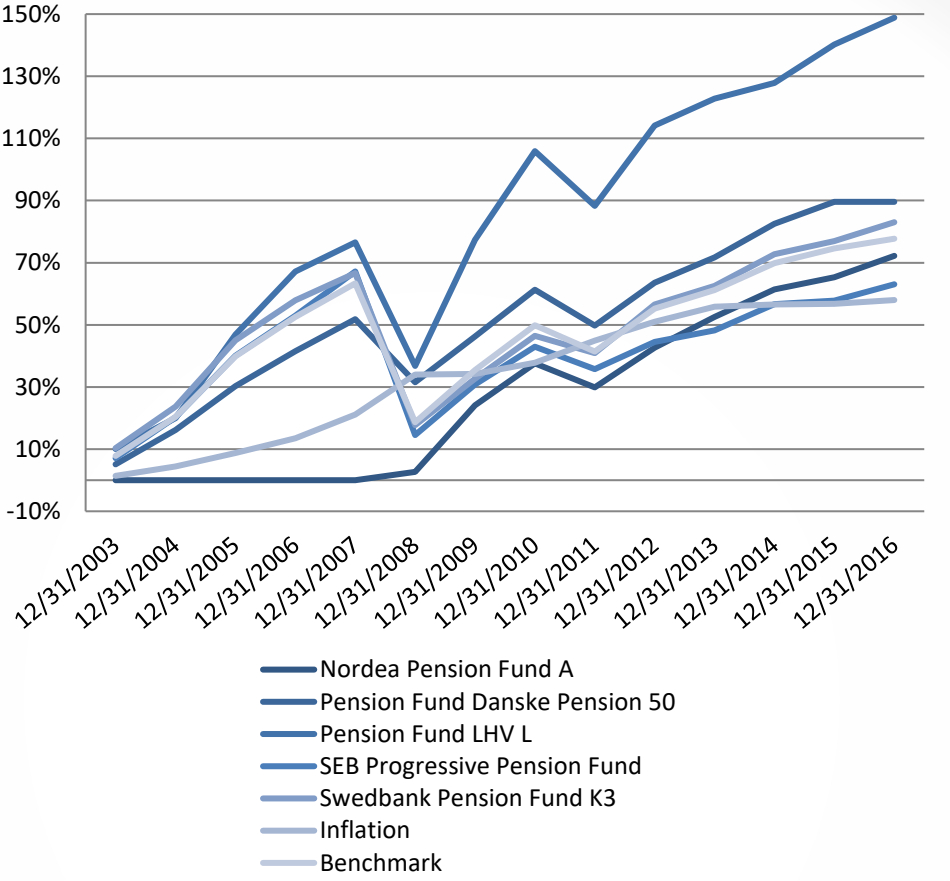
Progressive mandatory pension funds' performance on an annual as well as cumulative basis compared to their respective benchmark (EPI-50) is presented in the graphs below.

Graph EST V. Progressive Pension Funds´ Annual Performance



Source: Own calculations based on Pensionikeskus data, 2017

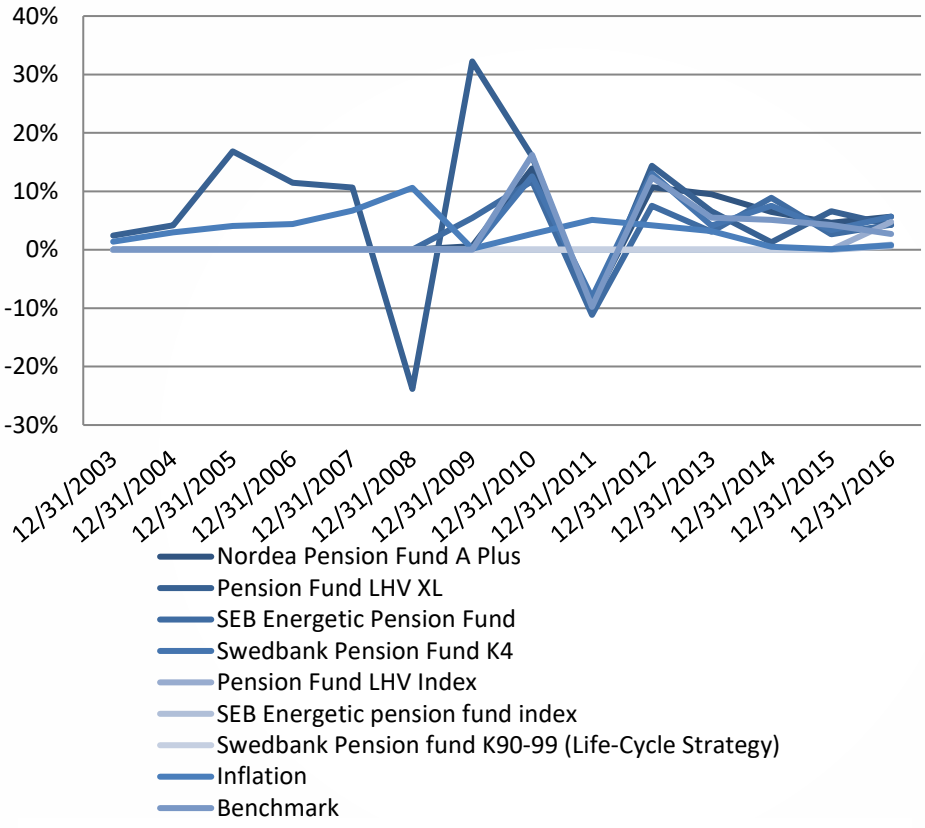
Graph EST VI. Progressive Pension Funds´ Cumulative Performance



Source: Own calculations based on Pensionikeskus data, 2017

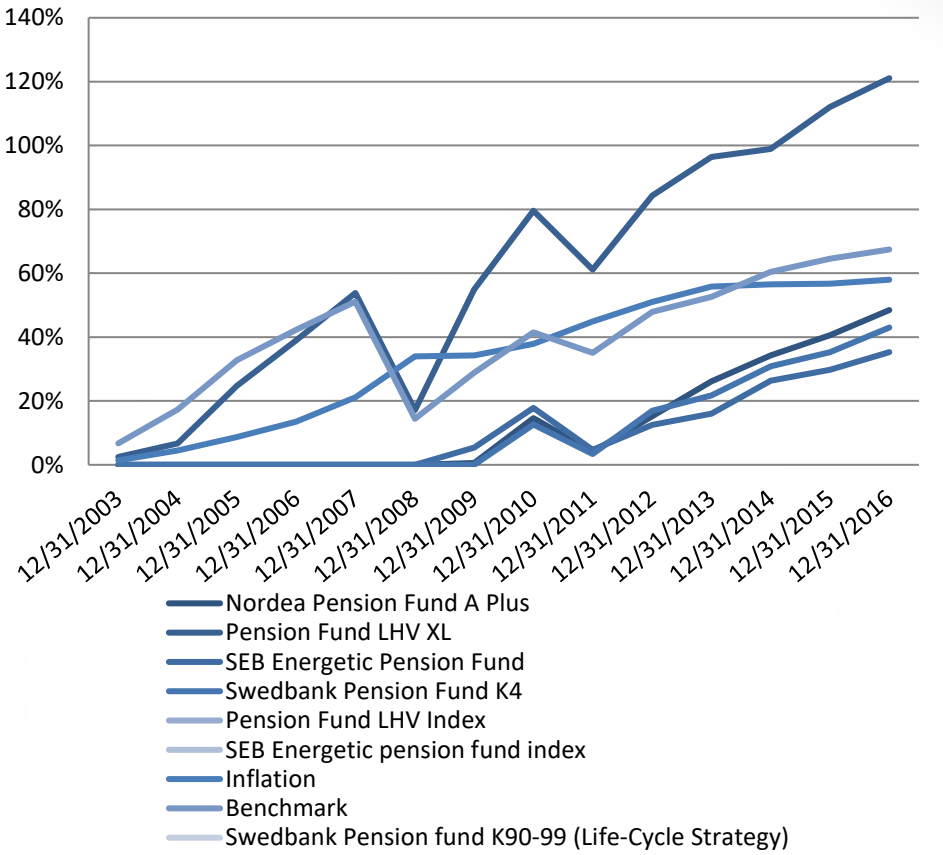
The last group of pension funds with the most volatile investment strategy and the highest share of equity investments (up to 75% of fund portfolio) are the aggressive pension funds. Aggressive mandatory pension funds' performance on an annual as well as cumulative basis compared to their respective benchmark (EPI-75) is presented in the graphs below.

Graph EST VII.Aggressive Pension Funds´ Annual Performance



Source: Own calculations based on Pensionikeskus data, 2017

Graph EST VIII. Aggressive Pension Funds´ Cumulative Performance

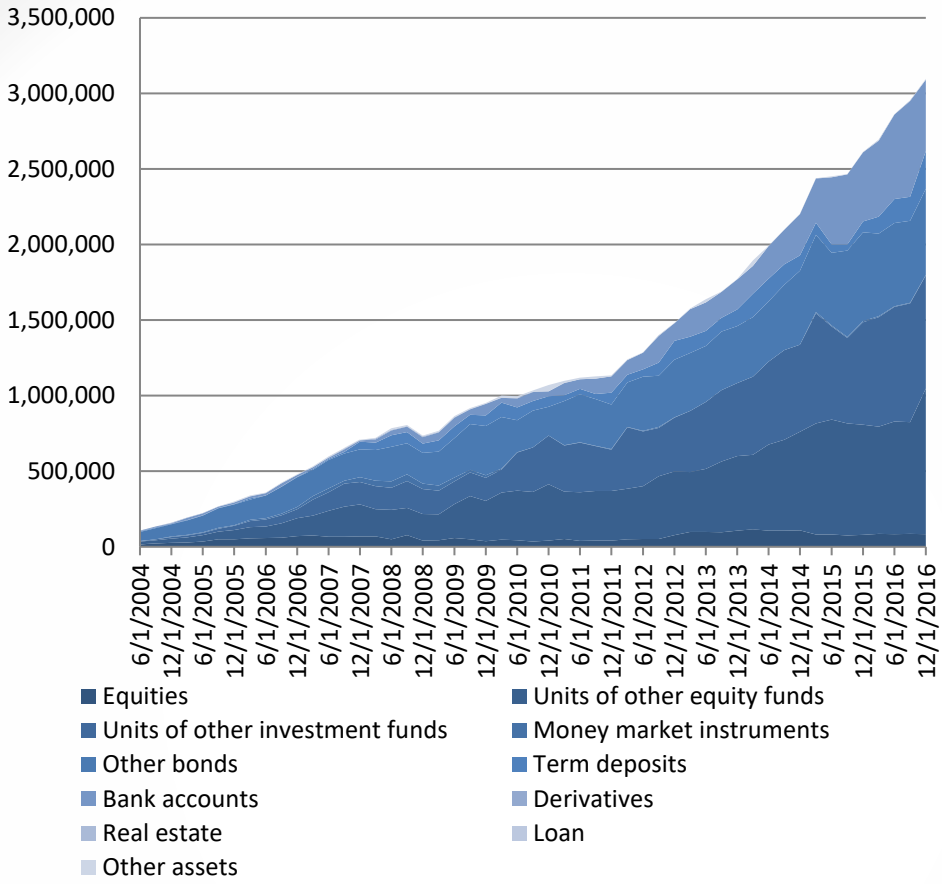


Source: Own calculations based on Pensionikeskus data, 2017

Analyzing the performance of pension funds, one can see that most of the pension funds have high correlation with their respective benchmarks. This suggests that most of the funds (excluding LHV funds) are passively managed.

Portfolio structure of all mandatory pension funds is presented in the graph below.

Graph EST IX. Portfolio structure of mandatory pension funds (in thousands €)



Source: *https://www.fi.ee/koond/eng/invest_koond10.php (Own calculations), 2017*

Analyzing the portfolio structure of mandatory pension funds in Estonia, one trend becomes apparent: replacement of direct investments into bonds and shares with the respective investment into structured products (UCITs) aimed at bond (equity) investments.

Nominal as well as real returns of mandatory pension funds in Estonia weighted by AuM are presented in a summary table below.

Table EST 7. Nominal and Real Returns of Mandatory Pension Funds in Estonia

2002	**Nominal return after charges, before inflation and taxes**	1.26%	**4.00%**	**Real return after charges and inflation and before taxes**	-2.34%	**0.36%**
2003		7.93%			6.54%	
2004		10.08%			7.05%	
2005		13.43%			9.31%	
2006		7.40%			2.95%	
2007		6.25%			-0.48%	
2008		-23.42%			-34.06%	
2009		12.49%			12.25%	
2010		9.39%			6.64%	
2011		-4.43%			-9.51%	
2012		9.66%			5.44%	
2013		3.27%			0.02%	
2014		5.05%			4.57%	
2015		2.49%			2.39%	
2016		3.38%			2.58%	

Source: Own calculations based on Pensionikeskus data, 2017

Considering the facts that the taxation in Estonia is mandatory, as well as supplementary pension scheme is applied to the pay-out phase only and the income of each individual is tested, calculating the after tax annual pension fund performance would lead to misleading results and only general assumptions of tax implications during the accumulation phase. Therefore, the after-income tax performance calculations have not been made in this study.

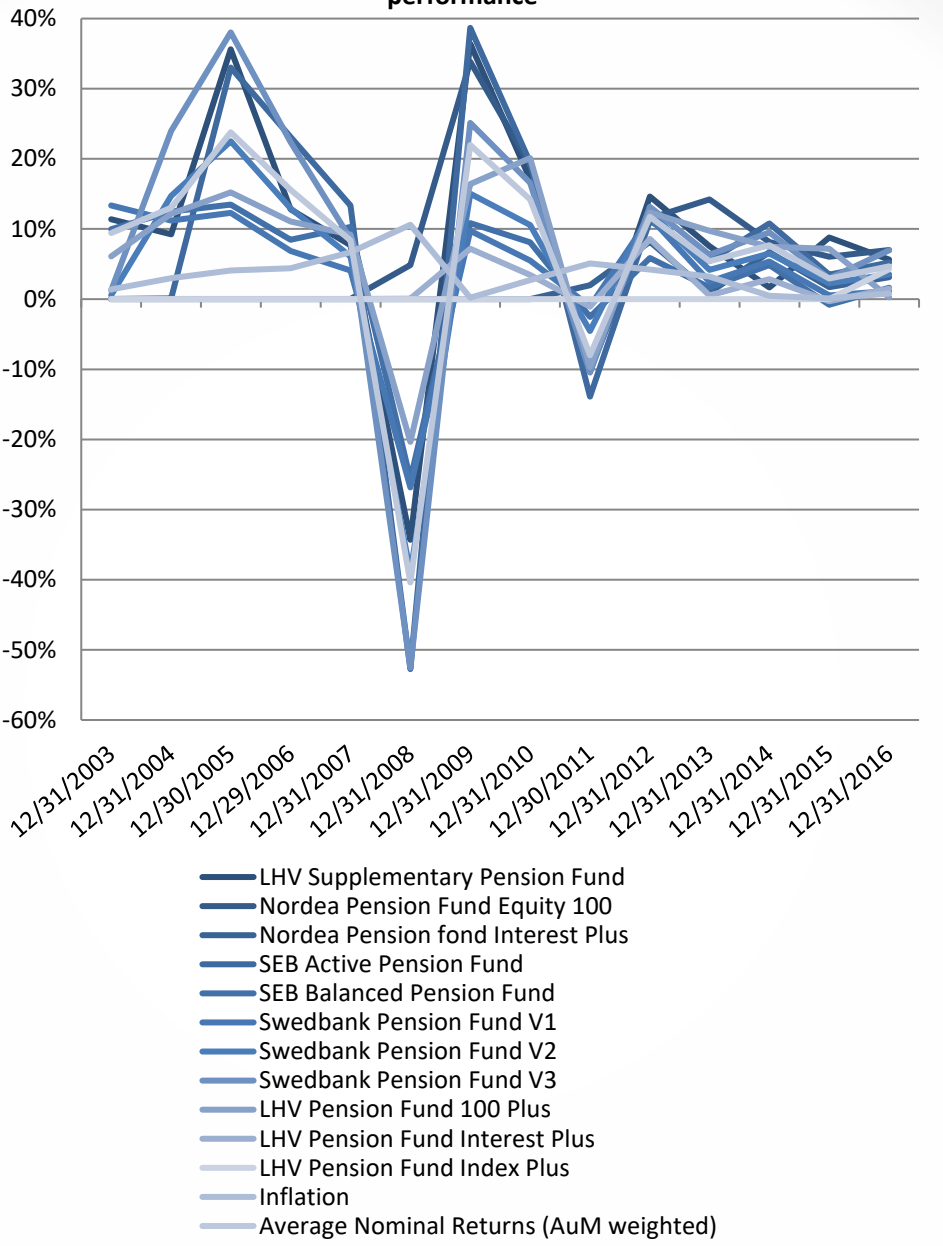
Pillar III – Supplementary pension

When analyzing the performance of supplementary pension vehicles, only the funds should be considered. Insurance based vehicles do not disclose this information on a periodical basis, as the market risk is shifted onto the insurer.

Supplementary pension funds do differ in their strategy, mostly based on the volatility of their portfolios. In most cases and compared to mandatory pension funds, the investment strategies of supplementary pension funds´ portfolio managers are far more aggressive. By large, the investment strategies do allow having up to 100% of assets allocated into equities and equity based structured products. Some asset management companies have reacted to this and started to also offer supplementary pension funds with conservative strategy.

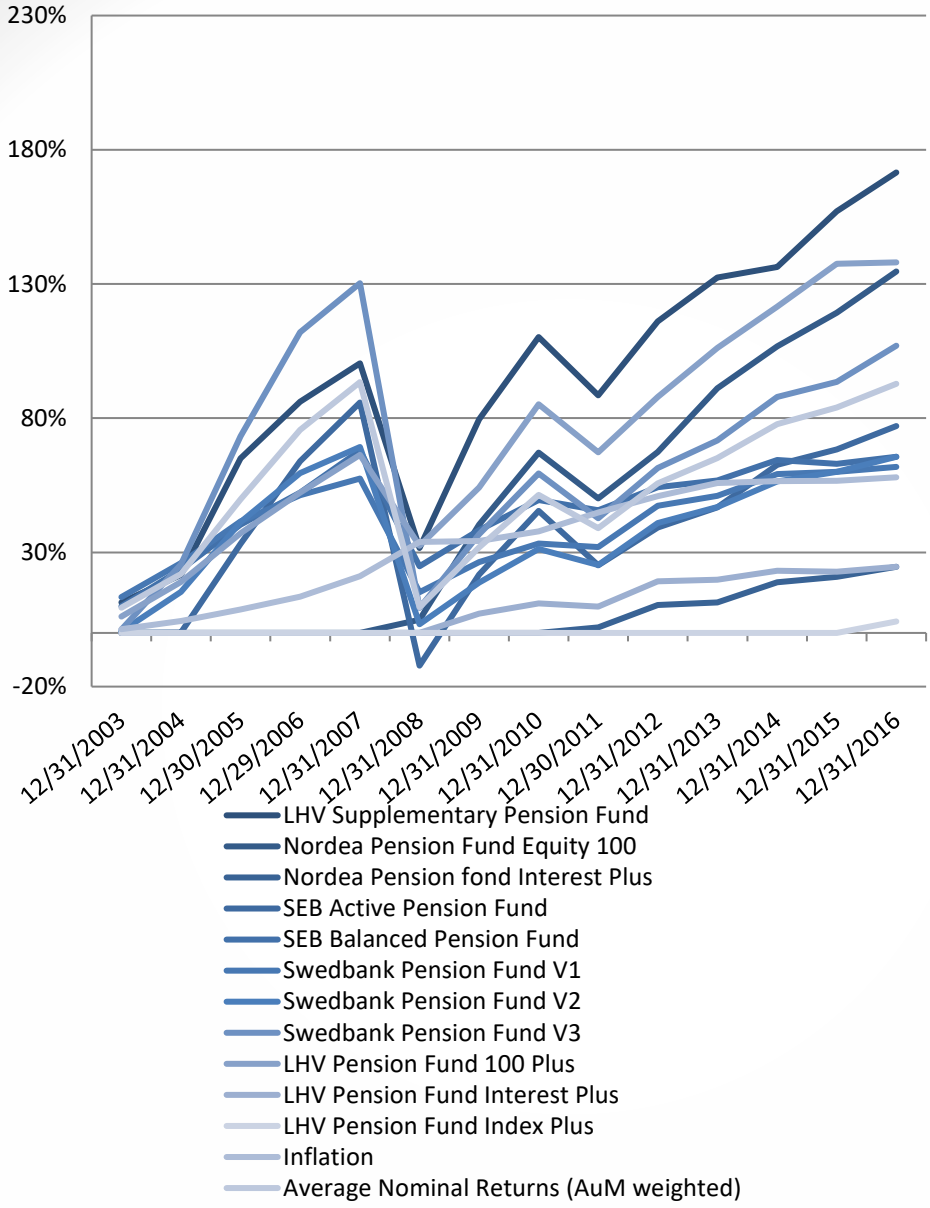
Danske Pension left the supplementary pension market in 2016. However, several passively managed funds emerged to offer lower cost structure products to the savers. The performance of supplementary pension funds on an annual as well as cumulative basis is presented in the graphs below.

Graph EST X. Supplementary pension funds´ annual performance



Source: Own calculations based on Pensionikeskus data, 2017

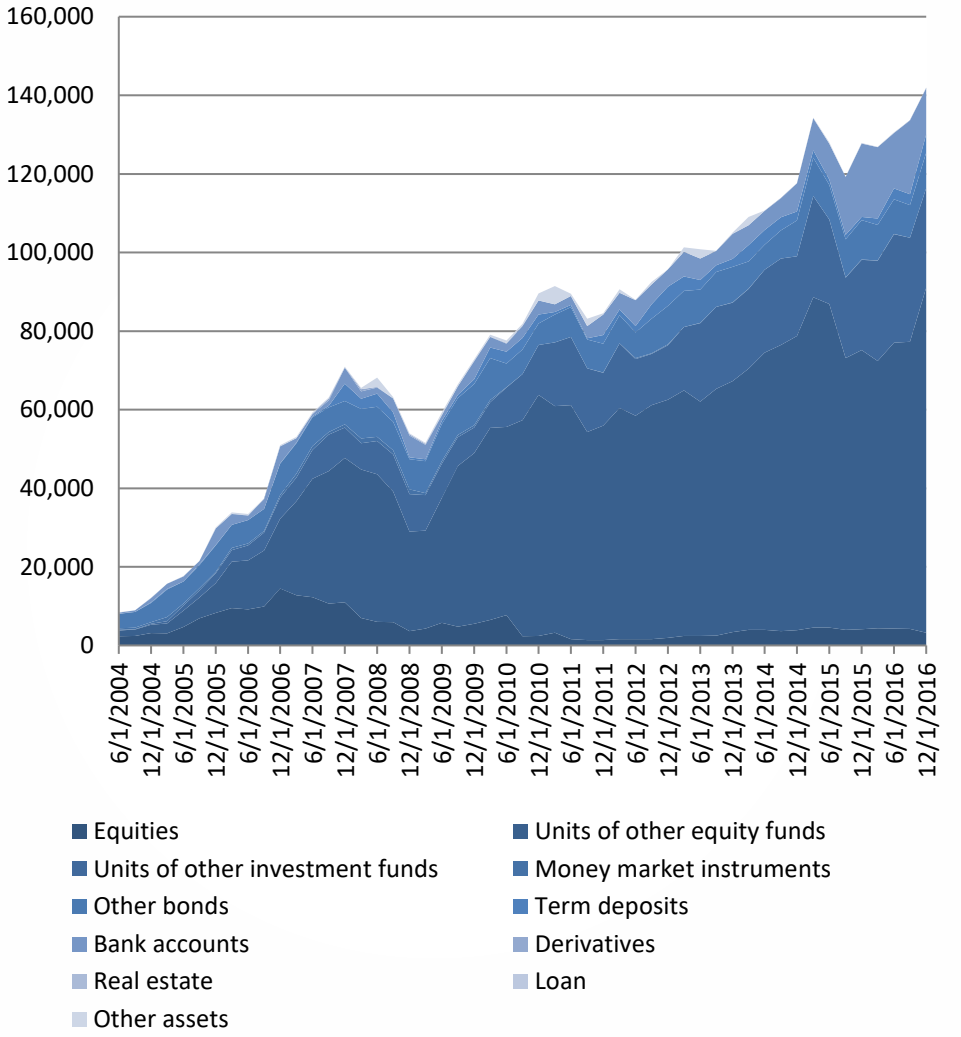
Graph EST XI. Supplementary pension funds´ cumulative performance



Source: Own calculations based on Pensionikeskus data, 2017

The structure of supplementary pension funds´ portfolios differ significantly and a larger proportion is invested in equity and/or equity based structured financial products (mainly equity based UCITs funds).

Graph EST XII.Supplementary pension funds´ portfolio structure (in thousands €)



Source: https://www.fi.ee/koond/eng/invest_koond11.php (own calculations), 2017

Similar to the mandatory pension funds, portfolio structure of supplementary pension funds tends to change in favor of structured products (UCITs funds, ETFs), confirming the trends of investing via financial intermediaries.

Table EST 8. Nominal and Real Returns of Supplementary Pension Funds in Estonia						
2002	Nominal return after charges, before inflation and taxes	8.19%	5.08%	Real return after charges and inflation and before taxes	4.59%	1.13%
2003		10.22%			8.83%	
2004		13.03%			10.00%	
2005		23.72%			19.60%	
2006		15.80%			11.35%	
2007		8.22%			1.49%	
2008		-40.40%			-51.04%	
2009		21.99%			21.75%	
2010		14.21%			11.46%	
2011		-7.47%			-12.55%	
2012		11.11%			6.89%	
2013		5.41%			2.16%	
2014		7.69%			7.21%	
2015		2.93%			2.83%	
2016		4.68%			3.88%	

Source: Own calculations based on Pensionikeskus data, 2017

Conclusion

Estonia, as an early pension system reformer, has introduced a typical multi-pillar pension system that combines state unfunded as well as mandatory and voluntary fully funded pillars. Different types of pension vehicles in pillar II as well as pillar III, allow savers to choose from a wide variety of investment strategies. Lower transparency in fee history results contrasts with the high transparency of performance disclosed on a daily basis. The exception are pillar III insurance contracts, where no information about performance or fees is publicly disclosed. This resulted in an inability to confront the nominal as well as real returns of insurance contracts with other options available to Estonian savers.

Performance volatility of most pension vehicles is relatively high, however Estonian savers tend to accept higher risk when it concerns their savings. Pillar III vehicles are a typical example of high volatile pension vehicles, however after the financial crisis, pension asset management companies started to offer also more conservative funds for pillar III savers.

Concerning the pension funds´ portfolio structure, one trend is clear. Portfolio managers are steadily replacing direct investments into bonds and equities with the structured financial products. Thus the question of potential future returns when using financial intermediaries should be raised. Most of the pension funds can be seen as passively managed, which raises the question of high fees. New trend arising in 2016 is the introduction of low-cost index pension funds, which could bring higher value to the savers due to lower fees compared to the peers.

Even if in most cases the net performance (adjusted for fees) is disclosed by pension funds, the overall level of fees is questionable. Comparing the level of fees, there is a significant risk undermining the ability to deliver above benchmark performance in future years.

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Pension Savings: The Real Return

2017 Edition

Country Case: France

Introduction

In 2016, the value of financial assets held by French households increased by 1.8%. Life insurance contracts and bank accounts still represent the two largest blocks of financial savings products in portfolios held by French households. Total outstanding life insurance contracts grew by 3.2% in 2016 and reached €1,718 billion, whereas deferred annuity plans[111] grew by 3.7% from €196 billion to €203 billion, which is still a very small portion of the financial assets of households:

Table FR 1. Financial assets of French households at the end of 2016

	% of total financial savings	2016/2015
Currency and bank deposits	30.1%	4.1%
Investment funds	6.1%	-15.0%
Life insurance	36.1%	3.2%
Pension funds	4.3%	3.5%
Direct investments (direct holdings of bonds and shares)	23.5%	3.7%
Total	**100.0%**	**1.8%**

Source: Banque de France, «National Financial Accounts»

[111] Deferred annuity plans include personal pension products (PERP), pension products for the self-employed ("contrats Madelin") or farmers, sectorial collective pension plans ("Préfon" for public employees, CRH for hospital employees), and company pension plans, with either defined benefits ("article 39") or defined contributions ("Article 83" and PERCO).

Pension Vehicles

Life insurance contracts

From 2013 to 2016, mathematical provisions related to unit-linked contracts rose more than those of "contrats en euros" (capital guaranteed contracts) and their share in total mathematical provisions increased slightly from 17% to 19%. This increase is due to both capital gains and net inflows (contributions less benefits). Unit-linked contracts accounted for 30% of net inflows to life insurance in France in 2013, 33% in 2014, 59% in 2015 and 82 % in 2016.

Table FR 2. Mathematical provisions (in € billion)

	2013	2014	2015	2016	2016/2013	2016/2015
Capital-guaranteed contracts	1195	1235	1269	1287	8%	1.4%
Unit-linked contracts	239	259	282	304	27%	7.8%
All contracts	**1433**	**1494**	**1549**	**1591**	**11%**	2.7%

Source: FFSA

The only recent innovation was the creation of a new type of life insurance contract, named "*Eurocroissance*", a contract that does not guarantee the invested capital in case of withdrawal within eight years minimum of subscription. This new type of contract is supposed to incite savers to accept a higher risk in the short-term for a potentially better long-term return, for example by investing more on the equity market. By the end of 2015, 59 % of insurers had a *Eurocroissance* contract on offer. But by the end of 2016 they had signed only 141,000 contracts for € 1.4 billion of mathematical provisions[112], probably at least partly due to the ultra low interest rates, making it challenging to expect a decent return. Since 2016 insurers are allowed to transfer unrealized capital gains from their general assets to the Eurocroissance contracts.

[112] Source : Autorité de Contrôle Prudentiel et de Résolution (ACPR)

Deferred annuity plans

Personal pension plans (PERP[113])

Thanks to higher contributions and paid benefits[114] that remain low, mathematical provisions in PERP personal pension plans increased from €7.5 billion in 2011 to €14.2 billion in 2015, and to €16.2 billion in 2016 (+13.6 %). However, the share of the PERP as part of the overall savings of French households remains very small.

The number of subscribers increased only slightly in 2012 (2.18 million plans, +1.5%), in 2013 (2.22 million; +2%), in 2014 (2.28 million; +3%), in 2015 (2.34 million; +2.5%), and in 2016 (2.40 million; +2.5%).

"Contrats Madelin" subscribed by self-employed

Mathematical provisions related to "*contrats retraite Madelin*" increased by 7.9 % in 2016 to 33.7 billion[115]. There were 1.217 million outstanding contracts at the end of 2016 (+2.8%). The "*contrats Madelin*" are widely used by self-employed workers because the PAYG (Pay-As-You-Go) system is less generous (and contributions lower) than for employees.

"Contrats Madelin agricole"

Technical reserves of "*contrats Madelin agricole*" (plan for persons working in the agricultural sector) increased by 4.1% in 2016, to €5.2 billion. 317,000 farmers had an open contract at the end of 2016.

Individual deferred annuity plans

Préfon, a deferred annuity plan open to all current and former public employees and their spouses, had 400,000 participants at the end of 2015 (+1.6% from 2014). Its assets under management reached €16 billion

[113] "*Plan d'épargne retraite populaire".* Figures source: FFA, French Federation of Insurance.
[114] The legal framework of the PERP was established in 2003.
[115] Source: FFA

(market value) at the end of 2015[116], up from €12.9 billion at the end of 2012.

Corem, a deferred annuity plan mainly subscribed to by civil servants, had 397,515 participants at the end of 2016 (unchanged from 2015 and up from 391,623 at the end of 2012). Its assets under management grew from € 7.6 billion at the end of 2012 to € 10.0 billion (market value) at the end of 2016[117].

CRH ("*Complementaire Retraite des Hospitaliers*"), a deferred annuity plan open to all public employees from the health sector and to their spouses, has 356,000 participants. Its technical reserves amount to €4 billion[118]. We could not find more precise public information.

Collective deferred annuities

In total, mathematical reserves grew by 5%, from €108.8 billion to €114.3 billion, from end 2015 to end 2016.

For insurance-regulated corporate defined contribution plans under "Article 83" of the French tax code ("PER Entreprises") mathematical reserves stood at €54.9 billion at the end of 2016.

For defined benefit plans ("Article 39" of the French tax code), mathematical reserves stood at €41.1 billion at the end of 2016.

Corporate long-term savings plans

The total assets of French defined contribution corporate savings plans (PEE[119] + PERCO) continued to grow in 2016 to 122.5 billion by the end of 2016 (+4 % over previous year). The number of members in those plans is

[116] As of August 2017, *Préfon* had not released its 2016 results.
[117] Combined participants and assets of Corem and "R1", a closed pension plan related to *Corem*.
[118] Source: *Guide d'information CRH* du CGOS – 2017.
[119] PEE: « *Plan d'épargne entreprise* » is a corporate savings plan where savings are typically blocked for a minimum of five years.

stable (more than 10 million people) but the average contribution increased and the plans again benefitted from favourable market trends in 2016.

The "Plan d'Epargne Retraite Collectif" (PERCO), which is exclusively dedicated to pension investments, is still less mature than other pension plans as it started in 2004. But it continues to grow rapidly. Assets under management amounted to 12.2 billion at the end of 2015, and to 14 billion at the end of 2016 (+13 %). 2.2 million employees had a PERCO at the end of 2016 (an annual growth of +9%) and 213,000 companies propose this type of plan to their employees.

PERCO is quite similar to the US Corporate pension plans ("401k") in its design. However, it is not invested in general purpose investment funds like UCITS, but only in specifically dedicated alternative investment funds (AIFs) called Fonds Communs de Placement d'Entreprise (FCPEs).

Charges

Flows of financial savings of French households dramatically decreased in 2011 and 2012: in 2012 the net financial savings amounted to €27 billion against €157 billion in 2010. They recovered in 2013 (€82 billion), 2014 (€121 billion), 2015 (€118 billion) and 2016 (€119 billion) but did not catch up with flows recorded before the financial crisis. Competition for attracting retail investment funds translated into performances of capital-guaranteed life-insurance contracts diminishing less than market interest rates.

Available data on average annual charges for savings products are scarce in France. Overall annual fees for equity funds in France were 1.8% on assets in 2013[120]. These charges alone appear quite high: the average ongoing fund charge for all UK domiciled active funds (both equity funds and all

[120] Source: La lettre de l'Observatoire de l'épargne de l'AMF - n° 13 - Juin 2015
http://www.lafinancepourtous.com/html/IMG/pdf/Lettre-AMF-juin-2015.pdf

other funds) was only 0.92 % in 2015 (1.38% for retail funds and 0.69% for institutional ones)[121].

Insurance capital-guaranteed with profit contracts ("fonds en euros") bear an average annual fee of around 0.8%[122], but that does not include underlying fees and profit sharing.

Insurance unit-linked contracts cumulate the units' (investment funds) charges and those linked to the contract. Unit-linked contract fees alone account for 0.95% in fees on average per annum on assets[123]. Therefore, for unit-linked insurance contracts invested in equity funds, the total average fees are estimated at 2.75% (1.8 + 0.95) per annum. More than half of investment funds economically held by French households are through unit-linked insurance contracts.

These average fees are very high: assuming the equity funds performed on average like the French equity market did (see below), an investment made at the end of 1999 and held for 15 years would have been charged with more than 40% in accumulated fees.

Taxation

For PERPs, "*Madelin*" contracts and Public Employee schemes (*Préfon, Corem, CRH*), contributions are deductible from taxable income up to 10% of total professional income with a deduction ceiling (€30,432 in 2016). Annuities are taxable like pensions with a 10% fixed haircut. They are also subject to a social contribution, currently of 8,432.

Since August 2012, the taxation of employers' contributions to corporate savings plans (PEE and PERCO) and defined contribution plans ("Article 83") increased from 8% to 20%.

[121] Source: UK Financial Conduct Auhtority – Asset Management Market Study, November 2016 https://www.fca.org.uk/publication/market-studies/ms15-2-2-interim-report.pdf
[122] Source : toutsurmesfinances.com, November 2016
[123] Source: dossiers de l'épargne n°152, 2014

The general rise in taxation of savings also impacted life insurance. The law of 29 February 2012 increased the rate of "social contributions" from 13.5% to 15.5%[124]. This new rate applies since 1 January 2012 to property income and financial capital gains, and from 1 July 2012 onward to interest, dividends and real estate capital gains. So, the minimum tax rate on life insurance income is now 23% (7.5% income tax +15.5% social contributions). This rate applies to any divestments of € 4,600 and above per annum for an individual, and € 9,200 for a couple. Below these thresholds, the minimum overall tax rate falls to 15.5%.

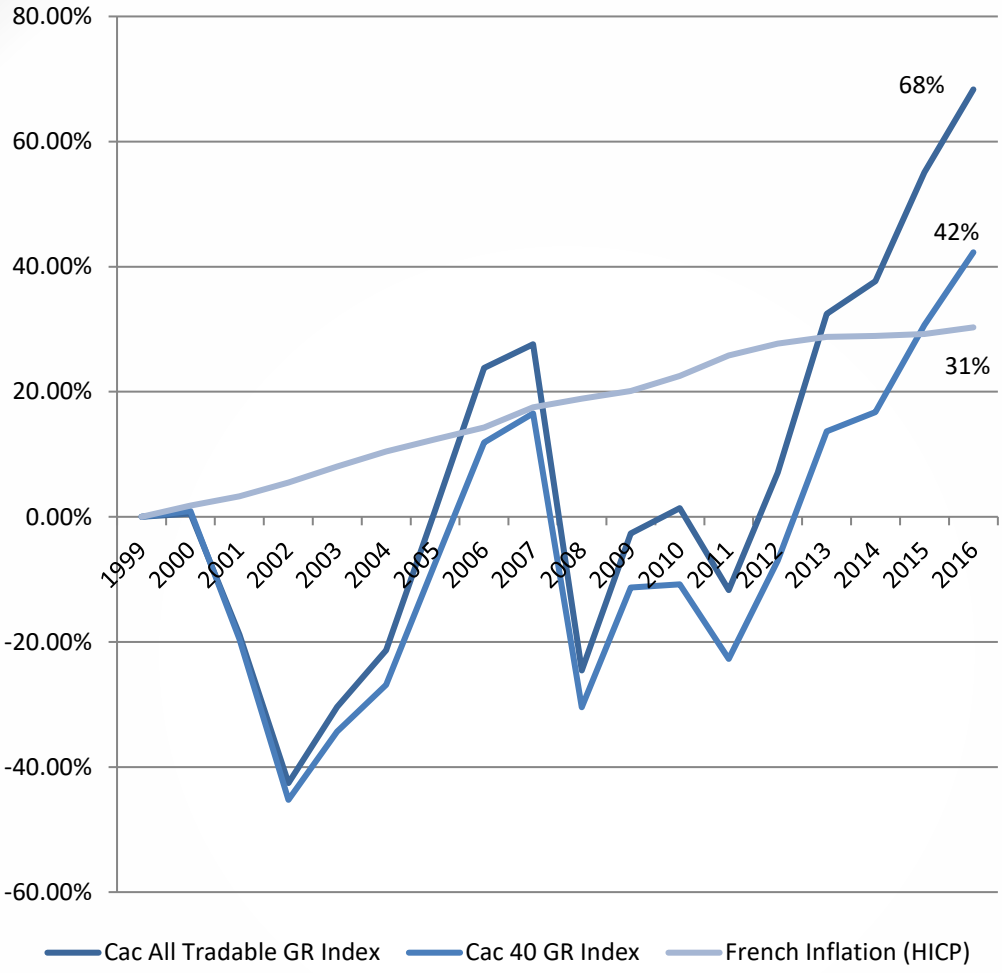
Pension Returns

Shares and bonds (direct investment in securities)

In 2016, the French equity market (dividends reinvested) returned +8.6% (CAC all tradable GR index). Over the last 17 years (end 1999 to end 2016), it returned as a whole (all shares) + 68.3 %, (+3.11% annual average) and the large capitalisations only (CAC 40 index, dividends reinvested as well) returned much less: +42.3% (+2.09% annual average), demonstrating the very strong over-performance of small and mid-cap equities. Inflation over the same period was +30% (+1.57% annual average). So, despite two sharp downturns (2000-2002 and 2007-2008), French equities delivered positive nominal and real returns over the whole period, but the real (after inflation) performance of the most liquid stocks is positive only since 2015.

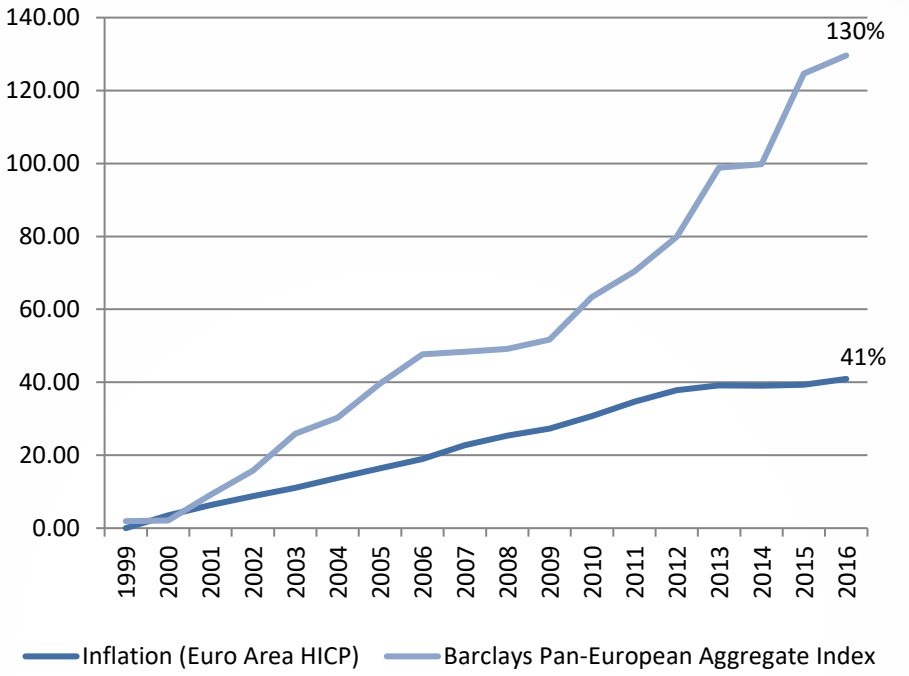
[124] Loi de Finance rectificative du 29 Février 2012 : LOI n° 2012-354 du 14 mars 2012 de finances rectificative pour 2012

Graph FR I. French Equity market performance: broad market vs. big caps market - 17 years (2000-2016)



Sources: Euronext, Eurostat

Graph FR II Euro area bond performance: - 17 years (2000-2016)



Sources: Barclays and Eurostat

Euro Bond markets continued to perform positively in 2016 (+1.91%), thanks to the quantitative easing policy of the European Central Bank. Overall capital markets delivered significantly positive returns[125] over the last seventeen years despite two major downturns in equity markets, but thanks also to the continuous decline of interest rates and its positive impact on the value of bonds.

[125] Of course these market returns are without charges and without taxes. The closest retail investment products would be index funds using the same indices over the same period. As a reference, annual charges on the Lyxor CAC40 ETF index fund are 0.25%, and 0.25 % as well on the Vanguard Euro Government Bond Index Fund.

Life insurance contracts – capital guaranteed

The real returns of guaranteed life insurance contracts declined quite sharply in 2016 in real terms due to the combined effect of another drop in interest rates and a modest resurgence of inflation. Such returns (+0.7%) should be assessed from a long-term perspective: the last data available from the wealth survey by INSEE indicates that outstanding life insurance contracts were open for 10 years on average and 32% were open for more than 12 years[126].

Over a 17-year period, real return after tax of guaranteed life-insurance contracts varied from a maximum performance of 3.1% in 2001 to a negative performance of -0.3% in 2011.

In the most favourable case, where savers do not redeem more than €4,600 per annum (see Taxation section above), real returns after tax are better (+0.8% in 2016 and +30% cumulated over the last 17 years).

[126] Christophe Benne, Alain Peuillet, "*L'assurance-vie en 2010: Une composante majeure du patrimoine des ménage*", INSEE Première n° 1361, July 2011.

Table FR 3. The returns of French life insurance contracts – capital guaranteed (%)				
	Disclosed return	**Real return before tax**	**Real return after tax**	**Real return after tax***
2000	5.3	3.5	2.7	3.1
2001	5.3	3.8	3.1	3.5
2002	4.8	2.6	2.0	2.3
2003	4.5	2.1	1.4	1.8
2004	4.4	2.1	1.5	1.8
2005	4.2	2.4	1.6	1.9
2006	4.1	2.4	1.6	1.9
2007	4.1	1.3	0.5	0.8
2008	4	2.8	2.0	2.3
2009	3.6	2.6	1.8	2.1
2010	3.4	1.4	0.7	10
2011	3	0.3	-0.3	-0.1
2012	2.9	1.3	0.7	0.9
2013	2.8	1.9	1.3	1.5
2014	2.5	2.4	1.8	2.0
2015	2.3	2.0	1.5	1.6
2016	1.9	1.1	0.7	0.8

* for redemptions below € 4,600 per annum

Source: FFA, Eurostat (ICPH index), BETTER FINANCE computation

Once again contradictory factors impacted real returns after tax in 2016:

- Nominal returns decreased again. This reflects the historically low interest rates. Capital gains or losses are not accounted for in the disclosed returns above.
- Inflation slowed down dramatically, from 2.7% in 2011 to 0.3% in 2015, but increased in 2016 to +0.8%.

In 2012, taxation increased by 200 basis points, as a result of the rise in social contributions from 13.5% to 15.5%. As taxation is applied to nominal returns, any rise in inflation increases the effective tax rate which reached 40% in 2016, and was almost 200% in 2011, as shown in the table below.

Table FR 4. French nominal and effective tax rates on capital guaranteed life insurance returns (%)			
	Inflation	Nominal tax rate	Effective* tax rate
2000	1.8	13.4	20.5
2001	1.5	13.4	18.8
2002	2.2	13.4	24.8
2003	2.4	13.4	29.4
2004	2.2	13.7	28.6
2005	1.8	18.5	32.3
2006	1.7	18.5	32.0
2007	2.8	18.5	60.1
2008	1.2	18.5	26.6
2009	1.0	19.6	27.6
2010	2.0	19.6	48.9
2011	2.7	21.0	194.0
2012	1.5	23.0	49.4
2013	0.8	23.0	33.1
2014	0.1	23.0	23.9
2015	0.3	23.0	26.2
2016	0.8	23.0	39.9

Effective tax rate = tax / real (net of inflation) income
Source: Eurostat (HICP index 2015 base), BETTER FINANCE computation

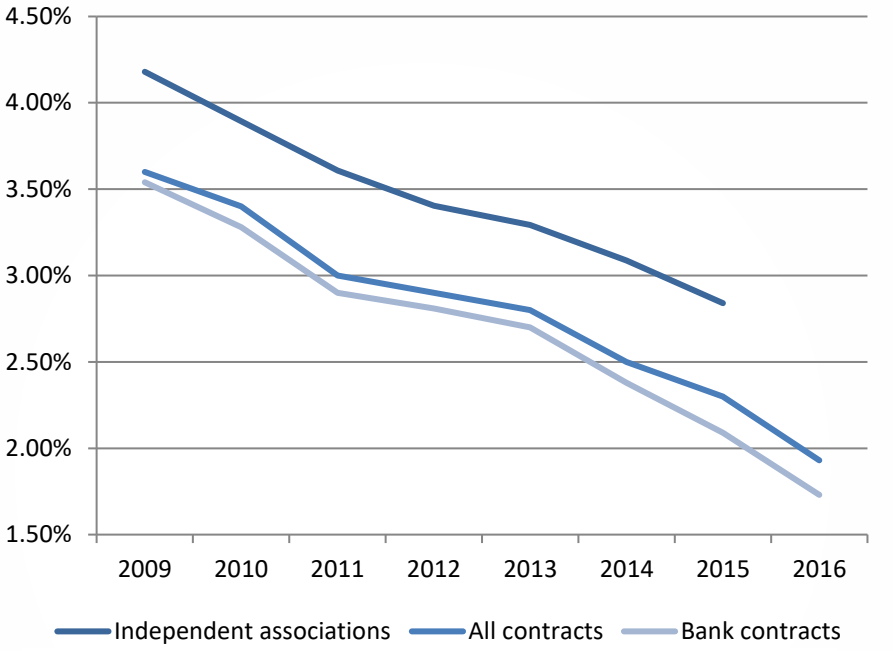
These average returns also mask important differences depending on the distribution network and governance: for the contracts distributed by banks, the 2015 average nominal return was only 2.09%[127], whereas the return of contracts subscribed by independent associations was 2.84%[128]. Considering that contracts distributed by banks represent 61% of the French with-profit life insurance market (€ 1,299 billion at the end of 2015), this return gap of 0.75% in 2015 constitutes an opportunity cost of nearly €6 billion for that year alone for savers getting their capital-guaranteed life insurance contracts from their bank instead of independent savers' associations. At the time of printing, the 2016 average return for contracts

[127] ACPR - Analyses et Synthèses nr. 70, July 2016.

[128] Sources: Faider, Facts & Figures. Independent associations representing life insurance contracts holders include AGIPI, AMAP, AMIREP, ANCRE, ASAC-FAPES and GAIPARE.

subscribed by independent associations was not available, but the trend is very similar considering that, for example, GAIPARE contracts returned 2.90% and those of ASAC-FAPES 2.89%, compared to the average return of banks' contracts of 1.73%.

Graph FR III. Nominal returns - all contracts versus independent life insurance associations



Sources: FAIDER (French Federation of Independent pension savers associations), FFA, ACPR

Life insurance contracts – unit-linked

Nominal returns were pushed upwards by the rise in stock prices from 2012 to 2016, against the background of declining inflation. Despite heavier taxation, real returns after taxes were +8% in 2012, +5.4% in 2013, +4.4% in 2014, +2.9% in 2015 and +1.4% in 2016. Despite the current long period of positive equity returns, unit-linked contracts still have a negative cumulative return since end 1999 (see next section and table FR 6).

Over a 17-year period of time, real returns after tax of unit-linked life-insurance contracts were very volatile. The worst performance was recorded in 2008 (-23.2%) and the best one in the following year (+13.2% in 2009).

Table FR 5. The returns of French life insurance contracts – unit-linked (%)

	Diclosed Return	Real return before tax	Real return after tax
2000	-2	-3.7	-3.7
2001	-9.5	-10.8	-10.8
2002	-15.2	-17	-17
2003	8.4	5.9	5.9
2004	6.4	4.1	4.1
2005	14.4	12.4	12.4
2006	8.8	7	5.5
2007	1.5	-1.3	-1.3
2008	-22.3	-23.2	-23.2
2009	14.4	13.2	13.2
2010	5.2	3.1	2.6
2011	-7	-9.4	-9.4
2012	11	9.3	8
2013	8.2	7.3	5.4
2014	5.9	5.8	4.4
2015	4.1	3.8	2.9
2016	2.9	2.1	1.4

Source: FFA, Eurostat (HICP index), own calculation (deduction of HICP price index variation from disclosed returns)

Life insurance contracts – 17 years returns (2000-2016)

In order to compute the real return achieved by an investor who would have subscribed to a life insurance contract at the end of 1999 and who would have withdrawn his funds 17 years later, one has to subtract the entry costs paid the year of subscription because these fees are not taken into account in the disclosed returns (annual fees on assets already are).

We estimate that entry costs in 2000 represented 2.76% of the investment, to be deducted from the real returns that year.

A saver would thus get a net real after tax return of +24.27%[129] for this 17 year period of investment on guaranteed contracts, and a negative one of -10.39% on unit-linked contracts. On a yearly basis, the rates of returns would be +1.29% and -0.64% respectively. It is worth noting that, although unit-linked contracts are more risky for subscribers, they did provide returns that were significantly lower than those of the riskless guaranteed contracts. Such a significantly lower – and negative - real performance over 17 years is primarily due to far higher fees (see the fees and charges section above), as capital markets as a whole (bonds and equities) provided a positive real performance over the same period (see graphs FR I and FR II). But the performance of unit-linked contracts is very sensitive to the period of reference.

Table FR 6. Real returns of all life contracts 2000-2016
(based on the relative weight of both categories in the overall mathematical reserves)

	17-year return	Average yearly return
Before tax returns		
Capital guaranteed contracts	38.69%	1.94%
Unit-linked contracts	-3.21%	-0.19%
All contracts (avg.)	**30.76%**	**1.59%**
After tax returns		
Capital guaranteed contracts	24.27%	1.29%
Unit-linked contracts	-10.39%	-0.64%
All contracts (avg.)	**17.86%**	**0.97%**

Source: FFA, own computations

[129] +29.71 % with the most favourable tax treatment, see table FR 3 above

PERP

A majority of PERPs are structured like ordinary life insurance contracts in the accumulation phase: a combination of capital guaranteed funds ("fonds en euros") and "units" representing investment funds. A minority of PERPs are structured like deferred annuities, similar to the main pension savings products for public employees (see next section below).

It was again impossible to find global return data on PERPs. The insurance industry body (FFA) publishes the average return of ordinary capital guaranteed ("fonds en euros") and unit-linked life insurance contracts, but not that of PERPs. Based on the disclosed nominal returns of PERPs accounting for 78% of total PERP assets at the end of 2015[130], the weighted average nominal return of the capital guaranteed PERPs ("fonds en euros") was 2.22% in 2015, significantly down from the 2014 level of 2.54%, and slightly lower than the return of ordinary capital guaranteed life insurance contracts. In addition, this does not take entry fees into account, which are probably at least as high as for life insurance (2.76% on average in 2000 for those). Like for ordinary life insurance contracts, capital guaranteed PERPs sold by banks (62% market share) had lower returns (2.09%) than the overall average in 2015, as in 2014 (2.45%). By contrast, PERPs from mutual insurers enjoyed higher returns than the overall average (2.92% in 2015 and 3.09% in 2014).

Deferred annuity plans for public employees (Préfon, Corem, CRH)

One difficulty in assessing real returns of deferred annuity plans is that up to 2010, it was not mandatory for those plans to disclose investment returns, Préfon being one example. Following action by BETTER FINANCE's French member organisations, a 2010 Law[131] made this a legal requirement from 2011 onward. However, since then Préfon only discloses an

[130] Source: ACPR - Analyses et synthèses nr. 69 – July 2016. http://acpr.banque-france.fr/fileadmin/user_upload/acp/publications/analyses-syntheses/201607_AS69_taux_revalo_contrats_collectifs_modif.pdf

[131] Law n° 2010-737 of 1 July 2010 - art. 35 (V), which modified Article L441-3 of the French Insurance Code.

accounting return (taking into account only realised gains on sales of assets besides interest and dividend income) and does not disclose an economic return (taking into account the annual evolution of the market value of all assets in the portfolio).

Préfon

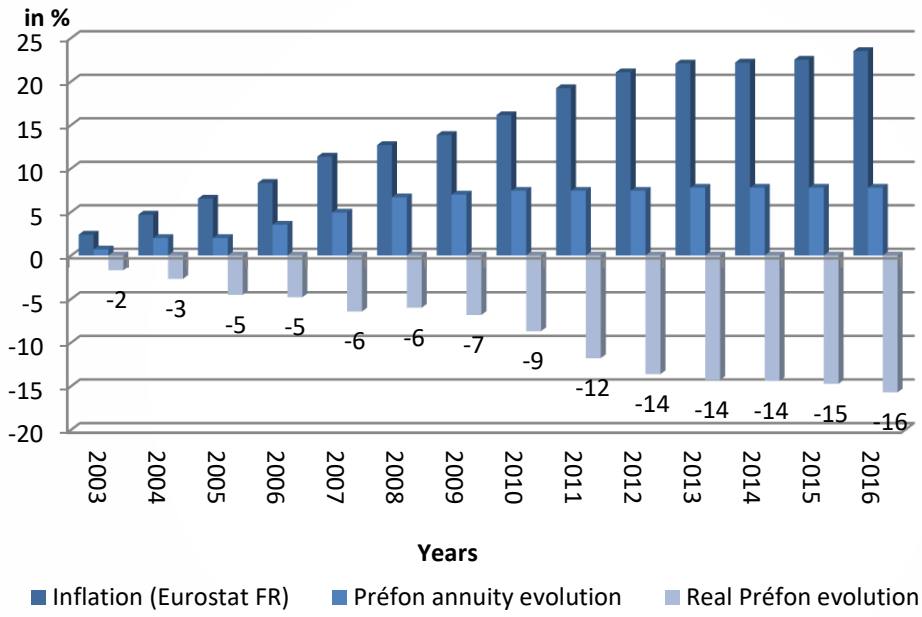
Préfon published an accounting return (net of fees) on its investment portfolio for 2015 of 3.51% versus 4.13% in 2014. However, as mentioned above, the accounting return does not take into account the changes in the market value of assets. 2016 figures were not released at the time of print (August 2017). In addition, most of the investment return is currently set aside in order to replenish reserves. In 2010, the French Supervisor (ACPR) decided this was still not sufficient and forced Préfon's insurers to contribute €290 million of their own funds as of 31 December 2013) to help Préfon balance its assets and liabilities[132]. End of 2015, this contribution from the insurers climbed to €543 million[133]. In addition, the value of the participants' accumulated savings is communicated individually to them only since 2012, and unfortunately with more than one-year delay (we would like this essential information to be released much sooner), and just as an "estimate"[134]. It is therefore impossible to compute a real rate of return individually and for all participants with the data currently made available by the Plan.

Another difficulty for deferred annuity products is to translate the impact of investment returns and other factors such as the capital conversion rate into annuities, the discount rate and the evolution of annuities paid on the actual long-term return for the pension saver. One proxy return indicator is the one computed and published by the French association of pension fund participants ARCAF. It has been collecting the annual rate of pension rights and annuities increases before tax for several years (see graph FR IV). Since

[132] "*Les Echos"* 27 December 2010. This information was not disclosed by *Préfon* to the participants.
[133] Source : Rapport de gestion Préfon Retraite 2016 (2015 year)
[134] Besides, this "transfer value" does not include the 5% transfer fee Préfon charges for any transfer occurring within the first 10 years of the contract.

the end of 2002, Préfon participants have lost 16% of the real value of their pensions (before tax[135]). The publicized objective of Préfon to maintain the purchasing power of pensions has not been fulfilled since 2002, and given the amount of the provisions that insurers had to contribute from their own funds since 2010, it is unfortunately unlikely that Préfon will reduce this loss of the real value of pensions any time soon. This key performance information is not disclosed to new participants[136].

Graph FR IV. Préfon annuities real value, compounded evolution in %



Source: ARCAF 2017

This return indicator, however, does not include the discount rate embedded in the conversion ratio of annuities to accumulated savings. But this discount rate varies from one year to the other, varies also according to the actual retirement age, and is not disclosed. Also, this indicator is only

[135] Savings into Préfon (like into PERPs and into Corem) are income tax deductible, but the annuities are taxable. Both savings and annuities bear social levies ("prélèvements sociaux").
[136] ARCAF, http://www.EpargneRetraite.org, 2016.

valid if one exercises his liquidation rights at age 60. For example, if one does this at the age of 62, the initial annuities would have been reduced by 7.3% since 2013.

It is difficult to compute the evolution of the Préfon annuities paid after tax, since they are taxed at the marginal income tax rate on pensions and salaries, and since contributions have been deducted from the taxable income for income tax purposes (but not for social levies).

Corem

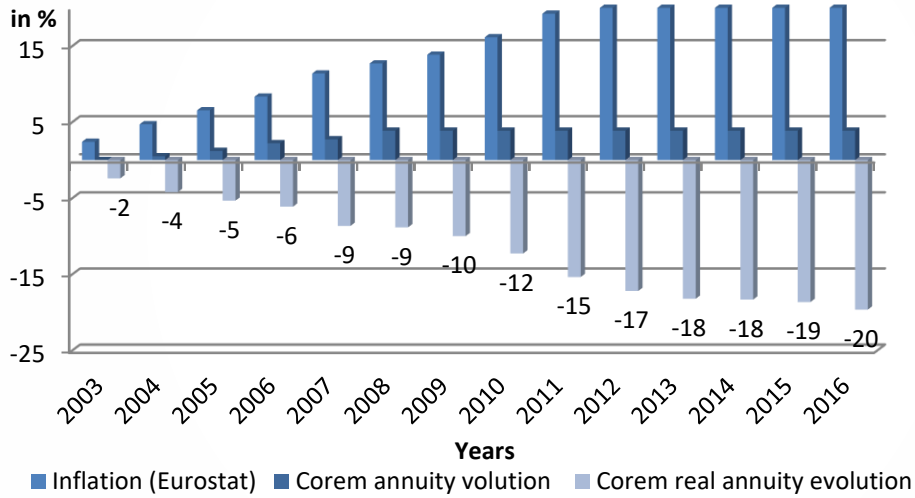
Corem publishes the annual accounting return on its investments, but does not specify if these are gross or net of fees. The accounting return for 2016 was +4.04% slightly down from +4.27 % in 2015. However, this accounting return does not take into account the changes in the market value of assets. In addition, and more importantly, all the investment return of the Corem assets is set aside in order to replenish reserves. It is therefore impossible to compute a collective real rate of return.

The deferred annuity mechanisms of Corem are similar to those of Préfon, with the same difficulties in estimating the real return for the pension saver. Therefore, we also use the proxy return indicator here, as computed by ARCAF. The Corem is in deficit; the main – undisclosed – tool of its recovery plan in place since 2002 is not to increase the nominal value of annuities served. As a result, the annuities served by CREF have lost 20% of their real value before tax (purchasing power) over the last 14 years (see graph FR V). These figures are before tax. This key performance information is not disclosed to new participants. In November 2014, the Plan announced new measures to try to reduce its reserve gap by further reducing the returns for participants (62 years of age to get full annuities instead of 60, and lowering of the minimum guaranteed return on pension contributions from 2.3% to 1.5% from 2015 on). The situation however is still very difficult as its reserve gap (difference between its assets and the present value of its pension liabilities) reached €2.9 billion at the end of 2014 as measured

using French common prudential rules[137]. At the end of 2015, Corem obtained permission (?) from the French Government to use a minimum discount rate of 1.50 % (instead of 0.59 % according to the previous rule) to compute the present value of its liabilities, helping it to reduce its reserve gap to €1.3 billion at the end of 2016. This exception seems dangerous with regard to the current level of long-term interest rates in France, which are much lower (0.72% for 10 year French Government bonds as of 3 August 2017).

Since 2016, the COREM rules allow it to reduce the value of annuities, also in nominal terms, under certain conditions.

Graph FR V. Corem annuities real value, compounded evolution in %



Source: ARCAF 2017

Overall, BETTER FINANCE estimates the loss of purchasing power over the last thirteen years (2002-2016) of participants to French Public Employee

[137] Until 2017, *Corem*'s recovery plan allows it to exceptionally use a discount rate of 3% and an older mortality table to compute the present value of its pension liabilities instead of the regulatory 0.78% at the end of 2014 and 1.5% end of 2015. Using the 3% discount rate, *Corem* assets cover 107.5 % of its liabilities at the end of 2015.

Pension Schemes to be at minus 16.2% (-1.2% per annum), based on the relative asset portfolio size of Préfon and of Corem.

CRH

CRH does not disclose any annual report or financial data publicly. Even its pre-contractual publications do not disclose past performance. Because of an on-going restructuring that started in 2008, the real returns of this plan are probably low and below inflation.

Defined contribution corporate plans

Table FR 7. French corporate savings plans - Average 16 years returns before tax 2000-2016

Fund ("FCPE") category	Equity	Bond	Money market	Diversified	All funds
17Y Nominal return	27.10%	69.15%	29.16%	47.80%	47.22%
Yearly average	1.42%	3.14%	1.52%	2.32%	2.30%
17Y Real return	-3.41%	30.15%	-0.91%	13.25%	12.93%
Yearly average	-0.20%	1.56%	-0.05%	0.73%	0.72%

Source: AFG/Europerformance

We combine information provided by "Europerformance" on the performance of each category of funds with data from AFG on their total outstanding relative weight[138] to estimate the overall returns of corporate savings.

Real returns of corporate DC (Defined Contribution) plans before tax over a 17-year period, from the end of 1999 to the end of 2016, were positive overall: the yearly average real performance before tax of the aggregate of all funds was +0.7%, which makes French DC plans the second best

[138] Data published by AFG relate to "FCPE L214-39". These funds are diversified funds which do not invest in the own shares of the concerned company ("company stock"). There is another category of corporate savings funds, the "FCPE L214-40" dedicated funds which can invest without limit in the own shares of the concerned company but there are no data available on the returns of these "FCPE L214-40" funds. The "FCPE L214-39" assets represented 60% of all FCPE assets at the end of 2015.

performing pension savings product after life insurance capital guaranteed contracts, and way ahead of life insurance unit-linked contracts.

The overall returns before tax are influenced predominantly by the surprisingly heavy weight and slightly negative return of money market funds (31% of assets; -0.9%, and the still negative real return of DC equity funds (despite a +10.6% real return in 2015 alone). Equity funds, which account for about 18% of total outstanding assets (excluding company stock), heavily underperformed equity markets over the last 17 years: +17% nominal versus +68% for French equities for example; see graph FR I above). Also DC Bond funds (also around 18% of assets) returned a +69% in nominal terms over the period versus +129% for the European bond market (see graph FR II).

Like for unit-linked insurance contracts, the primary factor for this underperformance of DC equity and bond funds could be the level of fees charged.[139] Unlike the US corporate DC pension plans ("401k"), the French ones do not invest in general purpose mutual funds, but in special purpose alternative investment funds (AIFs) called FCPEs, specially dedicated to these plans. Consequently, French savers are faced with an additional offering of investment funds (about 2500 FCPEs in addition to the about 3500 UCITs funds already domiciled in France), and the average size of these AIFs is quite small. Another factor is that equity FCPEs are not 100% invested in equities.

A limitation of such a calculation is that performance indices provided by "Europerformance" only relate to diversified funds inside the corporate savings plans. They do not take into account the part of corporate long-term savings which is invested in shares of the concerned company ("company stock"), accounting for 38% (€ 48.4 billion end of 2016) of all corporate savings plans.

[139] The average management fees represented between 1.6 and 2% of managed assets for European equity FCPEs on average in 2013/2014 according to the « Observatoire de l 'épargne de l'AMF » (Nr. 14, July 2015) but it is difficult to know whether this includes fees on underlying funds in the case of FCPE funds of funds.

Return of regular identical investments over 17 years

Also – same rule whenever possible for the whole research report – the computed returns relate to a one-time investment at the end of 1999 and kept up to the end of 2016. Typically, many pension savers will tend to invest regularly every year or every month. With the help of the French trade association AFG, we computed the annualized returns from 2000 to 2016 for the same amount invested every year over the last 17 years. This provides a higher annualised before tax return of 0.9% instead of 0.7%. Also, this return is less volatile with time of course, as it is spread over many years instead of only one.

After tax returns are often higher

Finally, after tax returns of French corporate long-term savings plans are difficult to compute globally, but they can often be higher than before tax ones, as their taxation is the most favourable of all long-term and pension savings products in France: redemptions are exempt from income tax and are only subject to "social" levies of 15.5% of net gains. Also, most of these savings come from non-taxable profit sharing income contributed by employees ("*intéressement*"and "*participation*") and employers' matching contributions.

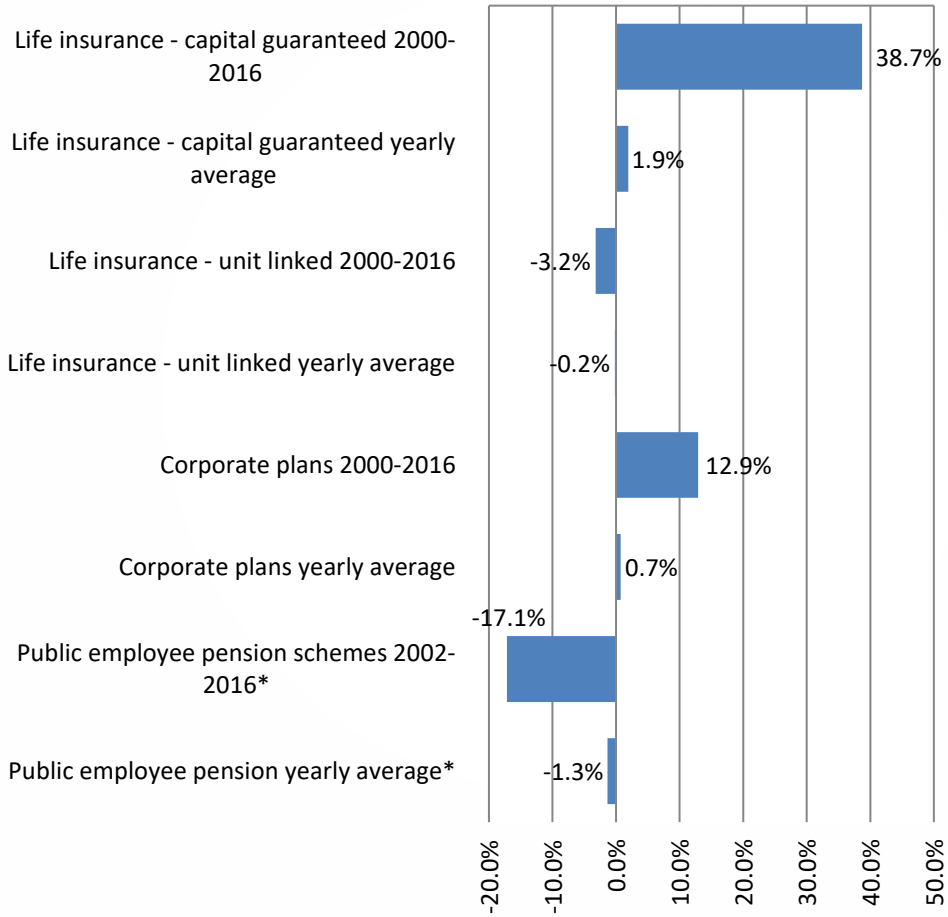
Conclusions

After a year of negative real returns before tax in 2011 for the main long-term and pension savings product in France, subsequent years were more favourable to pension savers. Against the background of bullish stock markets and lower inflation, unit-linked life insurance contracts showed a positive real performance every year for the last four years. However, their 17-year performance is still negative. The real performance of capital-guaranteed life insurance contracts ("contrats en euros") was positive every year from 2011 to 2015, and was still +1.1% in 2016, despite the general and continued decrease of interest rates.

The performance of capital-guaranteed contracts is obviously reduced when taxation is taken into account. Taxation of savings increased by 200 basis points in 2012, as "social contributions" rose from 13.5% to 15.5%.

Over a 17 year period, from the end of 1999 to the end of 2016, capital-guaranteed life-insurance contracts show an average positive yearly after tax performance of +1.3% in real terms and the unit-linked contracts a negative yearly return of -0.6%. Corporate DC plans delivered +0.7% on an annual basis before tax. After-tax return would typically be higher due to a favourable tax treatment.

Graph FR VI. French Pension Savings Real Returns before tax, 2000-2016



** Purchasing Power of Pensions Before Tax*
Source: BETTER FINANCE

Pension Savings: The Real Return

2017 Edition

Country Case: Germany

Introduction

The German pension system can be divided into three pillars:

- Pillar I: Mandatory State Pension Insurance
- Pillar II: Voluntary Occupational Pensions
- Pillar III: Voluntary Personal Pensions

In 2007, the German government raised the statutory retirement age from 65 to 67. A transitional phase to attain the retirement age of 67 for individuals with less than 45 years of contributions was started in 2012, including a gradual increase of the working life of one month per year until 2029. For individuals with 45 years of contributions, the pension age was lowered to 63 years in July 2014 but has started to increase again since 2016, to reach 65 in 2028. The average effective age of labour market exit was about 62.7 years in 2014, both below the nominal pension age and the OECD average[140].

The Mandatory State Pension Insurance *("gesetzliche Rentenversicherung"*), structured as a Pay As You Go (PAYG) scheme that goes back more than 110 years, is the largest social security scheme in Germany covering approximately 53 million people[141]. German public spending on old-age benefits is among the highest in OECD countries. In 2016, all persons subject to social security charges contributed 18.7% of their gross income to the scheme, with contributions divided equally between employer and

[140] OECD (2015)
[141] Bundesministerium für Arbeit und Soziales (2016)

employee[142]. At 50% in 2014, the net pension replacement rate for average-wage workers was considerably lower than the OECD average at 63%[143]. One of the worst demographic shifts in Europe – increasing life expectancy while fewer children are being born – is forcing younger generations to assure an adequate retirement income through private savings.

In the early 2000s, the German government implemented an important pension reform to promote private pension savings through subsidies and tax incentives, as well as social security contribution savings in the case of occupational pension plans. In 2002, company pension plans (pillar II), that have traditionally been provided on a voluntary basis by employers, were transformed into an employee's right to have a part of its earnings paid into a company pension plan under a deferred compensation arrangement. The same year, the Riester reform was introduced to boost personal pension savings and in 2005, the Rürup pension was introduced to further complement personal pension plans.

Pension Vehicles

Private pensions are divided into Voluntary Occupational Pensions and Voluntary Personal Pensions. About half of today's retirees receive income from a private pension; however the proportion, currently at 7% (occupational pension) and 8% (personal pension) of a retiree's gross income, is currently rather low[144].

Voluntary Occupational Pensions

For a long time, occupational pension plans have typically been provided by employers on a voluntary basis. Since January 2002, employees have the

[142] All social security contributions are usually (and historically) divided equally. There might be exceptions, e.g. in the case of marginal employment ("Minijobs"). The variable contribution cap ("*Beitragsbemessungsgrenze*") for 2017: €76,200 for the old "*Bundesländer*" ("*Beitragsbemessungsgrenze West*") and €68,400 for the new "*Bundesländer*" ("*Beitragsbemessungsgrenze Ost*").

[143] OECD (2017), Net pension replacement rates (indicator). doi: 10.1787/4b03f028-en (Accessed on 14 June 2017). https://data.oecd.org/pension/net-pension-replacement-rates.htm

[144] Bundesministerium für Arbeit und Soziales (2016)

right to occupational pensions through deferred compensation, which means that future salary or special payments, such as vocational benefits or salary increases, for up to 4% of a variable contribution cap[145] can be converted to entitlements to a pension, if not regulated differently by a labour agreement. While employers have to comply with the demand for occupational pensions and execute them, they have free choice when it comes to structuring the retirement provision, leaving little to no choice to beneficiaries. There are five types of occupational retirement schemes that can be divided into two sub-pillars: one direct pension promise - book reserves - and four external types of occupational pension schemes - support funds, direct insurance, "*Pensionskassen"* and pension funds.

The five different financing methods to some extent compete with each other while it is also possible to combine two or more types. Both employers' and employee's contributions to occupational pensions are voluntary, although employers have to at least offer a direct insurance pension scheme, so that employees may benefit from tax advantages (deferred taxation) and social security contribution savings if they chose to contribute. When there is a binding labour agreement, occupational pensions are generally organised for whole industrial sectors and there is no employee's right to demand divergent occupational pension provision. Many collective agreements also oblige employers to participate financially in occupational pensions and withdraw the employer's right to choose the retirement scheme. Indeed, employer-funded pensions represent the largest share of occupational schemes, though an increasing number of deferred compensation arrangements can be found. If the occupational pension is structured as a deferred compensation and contributions are thus exempted from taxation and social security contributions, this will in return lower claims from the statutory pension insurance.

Occupational pensions in Germany are managed as defined benefit (DB) plans, either traditional or hybrid ones, that can take the form of

[145] *"Beitragsbemessungsgrenze";* there are differences between "*West*" and "*Ost*" due to the difference of the general level of salaries, but the variable contribution cap is always 4%. The "*Beitragsbemessungsgrenze Ost*" will gradually be aligned from 2018 until 2025.

contribution oriented DB plans with an annual minimum return guarantee, or contribution oriented DB plans with minimum guarantee of the sum of nominal contributions at the retirement. The German labour law requires employers to guarantee employee's given pension promises. All occupational pensions also have to cover at least one biometric risk, such as longevity, disability or death[146].

Book reserves ("Direktzusage")

Book reserves are direct pension provisions that the employer realises on the company's balance sheet in order to pay an occupational pension once the employee reaches the retirement age. In recent years, an increasing number of employers resort to external funding of the provisions through Contractual Trust Arrangements (CTA). It is obligatory by law to protect claims from book reserves through the "*Pensions-Sicherungs-Verein*" (PSVaG) in the case of an employer's insolvency. Reserves via CTAs are protected from creditors in the case of insolvency through legal independence. Book reserves are usually designed as pure benefits given by employers, though deferred compensation arrangements are generally possible, too. If an employee leaves the company, it is not possible to continue the retirement provision through private funding, though by then deferred benefits are maintained. Book reserves are the most widely utilised type of occupational pension plans in terms of assets under management.

Support funds ("Unterstützungskasse")

Support funds, one of the oldest forms of occupational pension schemes, are institutions funded by one or several companies to provide retirement provisions for employees. The latter have no direct legal claim to benefits from support funds but only from their employers. Support funds invest the deposited money to pay a company pension at a later date. If there is not enough money in the support fund to meet retirement commitments, employers have to compensate for the difference. The PSVaG protects employee's benefits in the case of an employer's insolvency.

[146] http://www.aba-online.de/glossar.html (Accessed on 14 June 2017).

Direct insurance ("Direktversicherung")

These types of occupational pensions are life insurance contracts that an employer concludes with an insurance company for its employees. Only last-mentioned or surviving dependents have claims to benefits from direct insurances. The insurance contracts can be continued with personal contributions if the employee leaves the company or, under specific conditions, be transferred to the new employer. If an employee solely contributes to a direct insurance, exemptions from taxation and social security contributions can be granted[147], or, the employee can alternatively make use of the Riester support if the contributions are made from individually taxed income.

Regulated by German occupational pension law, both the individual transfer of occupational pension claims and the application of Riester support under the above-mentioned prerequisite also applies to Pensionskassen and pension funds.

"Pensionskassen"

Pensionskassen are institutions, formed by one or several companies, which take the form of special life insurance companies. They are legal entities that continue to pay benefits even in the case of an employer's insolvency, and are supervised by the German Federal Financial Supervisory Authority ("*Bundesanstalt für Finanzdienstleistungsaufsicht*"; BaFin). In contrast with direct insurances, employees become direct insurees and often even members of the Pensionskasse. The traditional form ("*regulierte*") of Pensionskassen offers classic life annuity contracts that may invest a maximum of 35% of the capital in equity. They are allowed to implement divergent actuarial interest rates and even to change the applicable mortality table. The new ("*deregulierte*") Pensionskassen, in place since 2006, must act as life insurers with guaranteed interest rates and specific calculation standards.

[147] For direct insurance, Pensionskassen and pension funds: 4% of the contribution cap "Beitragsbemessungsgrenze West" (BBVG-RV West) + €1,800 are tax exempted; 4% of the BBVG-RV West are exempted from social security contributions.

Pension funds ("Pensionsfonds")

Pension funds, introduced on 1 January 2002 as a new type of occupational retirement scheme, are legal entities that grant employees a legal right to pension benefits. In contrast to Pensionskassen and direct insurances, pension funds are not subject to quantitative investment rules, hence their risk is generally higher. Pension funds are supervised by BaFin and entitlements of members and beneficiaries are protected by the PSVaG in case of insolvency of the sponsoring employer. Retirement payments can be fulfilled as lifelong annuities but there is also the possibility to have a lump sum pay-out at the beginning of the retirement phase.

Overall, the growth in entitlements to occupational pension plans mainly took place from 2001 to 2005 and has lost momentum in recent years. Since 2005, entitlements only increased for direct insurances, Pensionskassen and pension funds raising the absolute number to about 15 million. It should be noted that an individual can have several entitlements lowering the number of effectively concerned employees, and surveys of the German Federal Ministry of Labour and Social Affairs have shown that individuals are often poorly informed about their occupational pension provision[148].

[148] Bundesministerium für Arbeit und Soziales (2016).

Table DE 1. Entitlements to active occupational pensions (in millions)								
	2001	**2003**	**2005**	**2007**	**2009**	**2011**	**2013**	**2015**
Book reserves and support funds	3.9	4.0	4.7	4.5	4.5	4.6	4.8	4.7
Direct insurance	4.2	4.2	4.1	4.2	4.3	4.7	4.9	5.1
Pension funds		0.1	0.1	0.3	0.3	0.4	0.4	0.4
Pensionskassen	1.4	3.2	4.1	4.5	4.5	4.6	4.8	4.8
Total	**9.5**	**11.5**	**13**	**13.5**	**13.6**	**14.3**	**14.9**	**15**

Source: Bundesministerium für Arbeit und Soziales (2016).

Riester support is rarely used within the framework of occupational pension schemes. It is registered in only 1-2% of cases[149].

While pure defined contribution (DC) plans cannot be found in Germany to date, a law introducing DC pension plans without guarantees, set up by collective bargaining agreements, passed legislation in the summer of 2017. This so-called "*Betriebsrentenstärkungsgesetz*" likewise allows for auto-enrolment of employees in a pension plan with voluntary opting-out within a specified time frame and incorporates measures to strengthen occupational pensions for low income workers through e.g. allowances and tax incentives. The reform could become operative as early as January 2018[150].

Voluntary Personal Pensions

Over the last few years, German governments have undertaken significant communication efforts to advertise personal provisions for old age to supplement the statutory pension insurance. Since 2002, Riester pension savings are promoted by the government through two different channels: subsidies and taxation reliefs. In 2005, the Rürup pension was introduced to specifically support the self-employed through tax exemptions.

[149] Bundesministerium für Arbeit und Soziales (2012)
[150] http://dip21.bundestag.de/dip21/btd/18/112/1811286.pdf (Accessed on 14 June 2017)

Riester pensions

Riester[151] products are formally certified personal pension plans with the objective of building up a funded retirement pension supplement. They are subject to deferred taxation and subscribers receive subsidies from the German state, whose amount depends on personally invested contributions. Subsidies are at their maximum if the total contributions to a Riester product (that is, personally invested contributions plus subsidies) reach at least 4% of the individual's previous year's income. The subsidies add up to €154 per adult plus €300 for each child born since 2008 and €185 for those born before 2008. The minimum contribution is €60 per year with accordingly fewer subsidies. Subscribers that are younger than 25 years of age receive a bonus of €200 at the moment of subscription to a Riester product. Though little used in this context, the Riester support is also applicable to occupational pension plans for the following three types: direct insurances, Pensionskassen, and pension funds. Riester subsidies and tax allowances are personal and can only be passed on to a spouse's Riester contract in the case of death.

Riester pension benefits can be paid out starting at the age of 62, or at the age of 60 for contracts concluded before 2012. The subscriber obtains the right to convert the invested capital into a life annuity or a programmed withdrawal of which up to 30% of the accumulated savings can be paid out as a lump sum. Furthermore, one fifth of the accumulated savings is reserved for life annuities starting at the age of 85[152].

The following types of investments are eligible as Riester products:

- Bank savings plan ("*Banksparplan*"): These contracts are typical long-term bank savings plans with fixed and variable interest rates.
- Pension insurance contract ("*Rentenversicherung*"): These Riester plans, offered by insurance companies, exist in two forms. There are typical pension insurance contracts consisting of guaranteed returns and a participation in profits. Additionally, there are also hybrid contracts

[151] Named after former Federal Minister for Labour and Social Affairs: Walter Riester
[152] Bundesministerium für Arbeit und Soziales (2014)

where a fraction of the retirement savings is invested into investment funds. They consist of a guaranteed part and a unit-linked part that depends on the performance of investment funds.

- Investment fund savings plan ("*Fondssparplan*"): Savings are unit-linked, invested into investment funds chosen by the subscriber from a pool of funds proposed by a financial intermediary. The intermediary has to at least guarantee that the invested money plus the state's subsidies are available at the moment of retirement. In the case of premature withdrawals, a loss of capital is possible.
- Home loan and savings contract ("*Wohn-Riester/Eigenheimrente*"): These contracts take the form of real estate savings agreements. This most recent type of Riester scheme is based on the notion that rent-free housing at old age is a sort of individual retirement provision comparable to regular monetary payments.

At the end of 2016, about 16.5 million Riester contracts had been subscribed to. After steady increases in earlier periods, considerably fewer contracts have been subscribed to annually since 2012. Suggested explanations include the financial crisis and the current low interest rate environment along with less favourable media coverage of Riester products reinforcing general doubts[153] concerning funded retirement savings. It should be noted that an individual can subscribe to several Riester contracts at the same time, so a direct inference of the number of individuals possessing a Riester contract is not possible. However, state subsidies (allocations and income tax reliefs) are only possible for up to 4% of individual gross income (maximum €2,100 per year). In fact, a small number of non-subsidised Riester contracts exist. This is independent from the fact that many Riester policy holders "forget" to ask for state subsidies, and that others do not get the complete allocations. About two-thirds of Riester contracts take the form of pension insurance contracts making it by far the most important type of Riester investment despite a subscription decline in 2015 and 2016. Only the number of investment fund savings plans and home loan agreements increased over the course of these two

[153] Evidence of this can be found in Hagen, Kleinlein (2012)

years. Especially home loan agreements registered substantial growth over the last years due to a booming real estate market in a low interest environment. According BaFin information, every fifth Riester contract is currently put on hold, meaning that savers suspended their contributions[154].

Table DE 2. Number of Riester contracts (in thousand)

	Pension insurance contracts	Bank savings plan	Investment fund savings plan	Home loan and savings contract	Total
2001	1,400	N/A	N/A	N/A	1,400
2002	2,998	150	174	N/A	3,322
2003	3,451	197	241	N/A	3,889
2004	3,557	213	316	N/A	4,086
2005	4,524	260	574	N/A	5,358
2006	6,388	351	1,231	N/A	7,970
2007	8,194	480	1,922	N/A	10,596
2008	9,285	554	2,386	22	12,248
2009	9,995	633	2,629	197	13,454
2010	10,484	703	2,815	460	14,462
2011	10,998	750	2,953	724	15,426
2012	11,023	781	2,989	953	15,746
2013	11,013	805	3,027	1,154	16,000
2014	11,030	814	3,071	1,377	16,293
2015	10,996	804	3,125	1,564	16,489
2016	10,903	774	3,174	1,691	16,542

Source: http://www.bmas.de/SharedDocs/Downloads/DE/Thema-Rente/riesterrente-IV-2016.pdf;jsessionid=D8EDF9A373C48895A15A535F4E1E8C1A?__blob=publicationFile&v=1 (Accessed on 14 June 2017).

[154] http://www.bmas.de/DE/Themen/Rente/Zusaetzliche-Altersvorsorge/statistik-zusaetzliche-altersvorsorge.html (Accessed on 14 June 2017)

Rürup Pensions

Introduced in 2005, the Rürup[155] pension (or "*Basisrente*") is the most recent form of pension provision and, next to occupational pension plans and Riester pension plans, the third type of private pension that is supported by the German state through tax exemptions. The Rürup pension actually has similar characteristics to the statutory pension insurance. Contributions are used for monthly life annuities starting with the retirement phase at the age of 62 (or at the age of 60 for contracts concluded before 2012) and there is no possibility to pay out lump sums. The benefits are personal thus non-transferable and cannot be disposed or capitalised either. Contributions are exempted from taxation up to a high deduction cap. Rürup pensions, that were specially designed for self-employed persons and freelancers who could not benefit from state supported pension savings until then, are beneficial for high revenues because of the high tax exempted savings amount. They take the form of pension insurance contracts that are, in contrast with the Riester ones, irredeemable, and from which invested money cannot be claimed before the retirement phase. It is also possible to subscribe to Rürup insurance contracts that invest into investment funds through savings plans. Such contracts can be designed with or without capital guarantees[156].

At the end of June 2016, about 2 million Rürup contracts have been subscribed to. Following a vigorous increase since their introduction in 2005, growth has slowed down in 2012, similar to the development observable for Riester contracts for supposedly similar reasons[157].

[155] Named after German economist Bert Rürup

[156] http://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Steuern/Weitere_Steuerthemen/Produktinformationsblatt/2016-12-12-Produktinformationsblatt-Basisrente.html (Accessed on 14 June 2017)

[157] Bundesministerium für Arbeit und Soziales (2016)

Table DE 3. Number of Rürup contracts (in thousands)	
2005	148
2006	296
2007	608
2008	863
2009	1,080
2010	1,277
2011	1,490
2012	1,655
2013	1,763
2014	1,883
2015	1,973
Q1 2016	1,991
Q2 2016	2,007

Source: Bundesministerium für Arbeit und Soziales (2016).

Life insurance and pension insurance contracts

Retirement provision in Germany is also carried out through classic pension insurance products or life insurance products, possibly ones that are unit-linked. However, if not certified within the framework of the Riester pension, the Rürup pension or as an occupational pension plan, these contracts do not benefit from initial tax deductions or allowances. Nonetheless, they do play an important role in personal retirement provisions with about 66.8 million contracts concluded at the end of 2016[158]. These contracts have a very diverse nature. They usually start paying out at the moment of retirement though there are also contracts that pay immediately after conclusion ("*Sofortrente*"). It is possible to redeem both via lump sums and annuities.

[158] http://www.gdv.de/zahlen-fakten/lebensversicherung/renten-und-kapitalversicherungen/ (Accessed on 14 June 2017)

While the pension law of summer 2017 mainly aims at strengthening occupational pensions, personal pensions are likewise impacted as the basic allowances for Riester contracts are set to increase from €154 to €175 as early as 2018.

Charges

Information on the multifaceted types of charges for private pension products are rather hard to obtain and often non-transparent for individuals, which complicates the decision making process.

Within the 2nd pillar, due to the DB character of pension schemes, employers have an interest in cost-efficient pension provision and the competition among different financing methods creates pressure on costs. In the case of book reserves and support funds, an employer has to meet the specified retirement commitments agreed upon; therefore charges will not be discussed within this scope for these two types of occupational pension.

One of the main advantages of occupational pension schemes is that charges are usually lower than for personal pension plans because they are spread over larger groups. Employers often receive quantity discounts or customised rates with lower administrative charges. This is especially the case if rates are defined for entire industry sectors.

The operating expenses (administrative charges) for both Pensionskassen and pension funds supervised by BaFin are expressed as a percentage of the funds' total assets[159]. We did not find any data on acquisition costs which are opaque in the case of occupational schemes and even prohibited by law for traditional Pensionskassen.

[159] We did not find any charges data shown separately for occupational direct insurances.

Table DE 4. Operating expenses as a % of total assets for Pensionskassen and pension funds	
	Administrative charges
2002	0.254
2003	0.756
2004	0.980
2005	0.585
2006	0.427
2007	0.314
2008	0.276
2009	0.257
2010	0.237
2011	0.219
2012	0.211
2013	0.208
2014	0.196
2015*	0.211

**Data for 2015 is preliminary.*

Source: OECD (2017), Global Pension Statistics (Accessed on 22 May 2017).

Table DE5 details information on charges for all types of life insurance contracts.

Table DE 5. Life insurance expense ratios		
	Acquisition charges (as % of total premiums for new policies)	**Administrative charges (as % of mean capital investments)**
2000	5.6	0.40
2001	5.5	0.39
2002	5.4	0.38
2003	5.0	0.37
2004	4.5	0.35
2005	5.6	0.35
2006	4.9	0.33
2007	5.2	0.31

2008	4.9	0.30
2009	5.2	0.29
2010	5.1	0.27
2011	5.0	0.25
2012	5.0	0.25
2013	5.1	0.24
2014	5.0	0.23
2015	4.9	0.22
2016	4.8	0.21

Source: http://www.gdv.de/zahlen-fakten/lebensversicherung/ueberblick/#kostenquoten (Accessed on 4 July 2017).

Charges for Riester products are often the topic of negative media coverage. It is frequently stated that the charges consume almost all of the state's subsidies. Especially challenging for individuals is the complicated cost structure and the lack of transparency of Riester contracts. For instance, there are internal costs like acquisition costs, distribution costs and administrative costs that are derived from differing and sometimes ambiguous determination bases, as well as external costs if parts are invested into investment funds. As of late, charges on capital withdrawals in the retirement phase are at the centre of criticism. This opacity has created a curious situation where even providers with favourable charges are unable to properly set themselves apart from the expensive ones. From a legal standpoint, until 2016 the German legislator only dictated that acquisition costs of Riester products have to be spread over at least five years to alleviate the initial cost burden.

Calculations in the early 2000s by the German government estimated the total charges to be 10% of the yearly savings premium, and this has become the standard for Riester charges calculations ever since[160]. Own research shows that estimations of total charges of, on average, 10% to 12% of the

[160] Rürup–Kommission (2003)

yearly savings premium can be assumed. However, one can observe an enormous cost span reaching from 2.5% to 20% for insurance contracts[161].

With regard to the less-used Rürup contracts and their shorter history, information is even harder to obtain. Since a long time, there has been very little transparency regarding the cost structure as there was no obligation by law for detailed disclosures. In contrast to Riester products, there is no obligation to spread the initial acquisition and distribution charges over a defined period[162] but application of the same conditions as for Riester products is common. The total charges for Rürup pensions expressed as percentages of the yearly savings premium are estimated by practitioners to be a little lower than for Riester pensions. Other personal retirement provisions, such as classic pension insurance and life insurance contracts, are likewise often stated to have slightly lower total charges than Riester products.

Since 1 January 2017, in order to increase transparency and comparability, every consumer receives corresponding product information sheets before the subscription to a Riester or Rürup contract. These information sheets are standardised and contain, along with a complete list of individual charges, actual costs illustrating the average yearly reduction in yield ratio which should allow for a better comparison among products of the same risk type. The reduction in yield calculation is based on stable contributions over the entire duration of the contract and is performed by the pension provider. Any deviation to the taken assumptions, e.g. changing of the underlying investment vehicle or contribution gaps and early termination, changes the reduction in yield projection. As entered into force as from this date, charges arising from the change of the Riester or Rürup provider for contracts concluded after 1 January 2017 are subject to hard caps, such as distribution cost application to only 50% of the transferred subsidised capital[163].

[161] Gasche, Bucher-Koenen, Haupt, Angstmann (2013)
[162] ZEW (2010)
[163] http://www.bundesfinanzministerium.de/Monatsberichte/2017/04/Inhalte/Kapitel-3-Analysen/3-6-Das-neue-Produktinformationsblatt.html (Accessed on 14 July 2017)

Average effective costs are not available for the periods under review within this study. Hence for our calculations, we only consider two types of charges at our disposal: acquisition and administrative charges. For the years of 2016 and 2017, Assekurata[164] calculated average effective costs of about 0.8%[165] per year which would lead to a heavier burden in terms of charges than what our calculations can capture.

Taxation

A reorganisation of retirement savings taxation has been ordered by a Federal Constitutional Court decision dating back to 2002. This revision came into effect in 2005 resulting in taxation that is based on a model that divides the different forms of retirement savings according to three groups.

The statutory pension insurance and the Rürup pension belong to the first group. Funded pension schemes like occupational pensions and the Riester pension belong to the second group. The third group covers the standard pension insurance or life insurance products due to their additional function as investment products.

Contributions to products from the third group always have to be paid from taxed income. The products from the first two groups are subject to deferred taxation. Contributions up to a deduction cap are exempted from taxation and generally subject to tax in its entirety during the pay-out phase.

While products from the second group have already been partially subject to deferred taxation before 2005, this has not been the case for products from the first group. A transitional phase towards complete deferred

[164] "ASSEKURATA Assekuranz Rating-Agentur GmbH" (www.assekurata.de) is a private company specialized in the quality assessment of insurance companies from a customer's perspective providing rating and analysis services. For instance, ASSEKURATA is the only rating agency incorporating policy holder's opinions on their insurers gathered from customer surveys directly into their verdicts. ASSEKURATA, as a licensed European rating agency, is supervised by the European Securities and Markets Authority (ESMA). Calculations by Assekurata are renowned and utilised by governmental, corporate and consumer structures.

[165] Assekurata (2017)

taxation started in 2005 and since then, every year higher amounts of contributions can be deducted from taxation and consequently the amount of retirement pay-outs subject to taxation rises. In 2025, pension savings for up to €20,000 for individual insurees and €40,000 for couples will be exempted from initial taxation. 60% of the maximal amount was tax deductible in 2005 which means the percentage rises 2% each year until the maximum is attained in 2025. The 50%-contribution by employers is already tax exempted, so in 2016 32% of an employee's total contributions to retirement savings were tax exempted.

The percentage of retirement pay-outs subject to taxation was 50% in 2005. Since then, for each year following, the percentage of retirement pay-outs subject to taxation for new retirees rises at a rate of 2% which means that in 2020, new retirees will pay taxes on 80% of their retirement pay-outs. From 2020 onwards, the rate will rise at 1% annually and consequently retirees from 2040 onwards will have to pay full taxes on their retirement pay-outs[166].

Voluntary Occupational Pensions

For occupational pension plans in 2013, and for commitments starting from 2005 on, the following taxation rules apply for the individual types of occupational pension schemes:

Book reserves and support funds

Book reserve and support fund contributions through deferred compensation are fully tax exempted, while up to 4% of a variable contribution cap is exempted from social security contributions. Benefits are taxed as income at the personal rate.

Direct insurances, Pensionskassen and pension funds

Direct insurances, Pensionskassen and pension funds are treated identically according to taxation legislation. In 2017, contributions through deferred compensation were tax exempted for up to €4,848 (4% of the 2017

[166] Deutsche Rentenversicherung (2017)

contribution cap (€1,800) and exempted from social security contributions for up to €3,048 (4% of the 2017 contribution cap)[167]. Investment income is tax exempted while benefits are subject to taxation.

Voluntary Personal Pensions

Riester pensions

Since 2008, total contributions to a Riester product of maximum €2,100 are exempted from initial taxation even if this amount is more than 4% of the previous year's income. An automatic review by fiscal authorities within the framework of the income tax statement assures further fiscal relief on the difference originating from tax deductions exceeding the state's subsidies. During the savings accumulation period, investment income is likewise tax exempted while benefits are taxed in the retirement phase but exempted from social security contributions.

Rürup pensions

Contributions to Rürup pensions will be exempted from taxation for up to €20,000 per adult in 2025. In 2005, 60% of this ceiling was exempted from taxation and during a transitional phase, the percentage rises at a rate of 2% each year.

Table DE 6. Tax exemptions for Rürup contributions

Year of contribution	2005	…	2016	…	2020	…	2025
Tax deductible	60%	…	82%	…	90%	…	100%

Source: Bundesministerium der Finanzen (2016).

Benefits from Rürup pensions are taxed in the retirement phase at the personal income tax rate. In 2005, 50% of the benefits were subject to deferred taxation. Until the year 2020, the taxable part of each year increases by 2%. From then on, the proportion will increase by 1% each year until finally, from the year 2040 on, benefits will be fully taxed[168].

[167] If the limits have not already been reached by employers' contributions.
[168] Bundesministerium der Finanzen (2016)

Table DE 7. Taxation of Rürup benefits							
Year of benefit	**2005**	**…**	**2016**	**…**	**2020**	**…**	**2040**
Tax deductible	50%	…	72%	…	80%	…	100%

Source: Bundesministerium der Finanzen (2016).

Life insurance and pension insurance contracts

Other retirement savings products that are not particularly promoted by the German state are taxed as follows for all contracts subscribed to since 1 January 2005:

Contributions are no longer tax deductible as special expenses and have to be made from taxed income. Benefits are taxed at the personal income tax rate on the corresponding earnings (the difference between contributions and total pay-outs) in the retirement phase. Furthermore, one has to differentiate between whether the insurance benefit is carried out as a one-time lump sum payment or if a lifetime annuity payment is chosen. In the case of lump sum pay-outs, if the contract runs at least 12 years and the insuree is older than 60 (or 62 years for contracts subscribed to after 31 December 2011), only 50% of the earnings are subject to taxation. If these conditions are not met, the full earnings are taxed. In the case of life annuities, even further tax reliefs are possible depending on the age of the first retirement pay-out, as defined in the tax table. For instance, if the retiree is 60, 22% of the earnings are subject to taxation and at the age of 65, only 18%.

German capital market returns

Like we have done for certain major EU capital markets in this Report, we will look at the returns of the German stock markets to judge how well capital markets performed over the period we are considering.

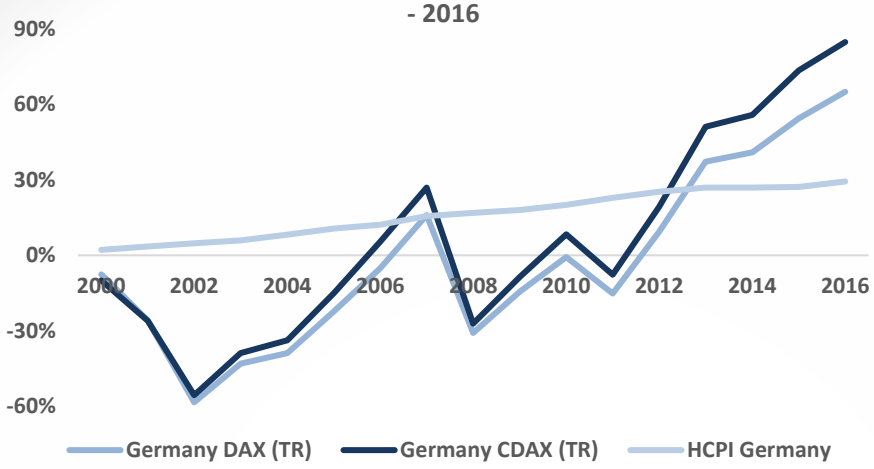
To this end, we based ourselves on the most widely used indexes for German stocks: the DAX (Deutscher Aktienindex), covering 30 major companies trading on the Frankfurt Stock Exchange as a blue chip stock market index, and the CDAX, containing all German equities listed on the

Frankfurt Stock Exchange in the General Standard and Prime Standard (425 companies at the end of 2016) as a “broad” index. Data for both indices are presented as total returns in order to properly illustrate the overall performance with that of other pension savings products.

It is not surprising to observe that, like for the rest of the countries in this report for which we made a similar analysis, the performance of the “broad” index was superior to the performance of the “narrow” index, with a cumulative difference of about 20% over a 17-year time span. Both indices managed to considerably outperform inflation as well, while this over-performance mainly took place during the last four years. The distinct outperformance for the whole period from 2000 to 2016 can partly be explained by the fact that German inflation has traditionally been very low and quasi stalled during the last four years.

Comparing the annualised real performances of both indices (1.6% for the DAX and 2.2% for the CDAX) with the after tax performance of state sponsored packaged products is nearly impossible since the periods for which we have data available are different. Moreover, the portfolios of these products include bonds (which in this concrete period from 2000 to 2016 performed better than stocks, contrary to what tends to happen in the long run) and foreign stocks.

Graph DE I. Cummulated German equity market performance: broad market (CDAX) vs. big caps (DAX): 2000 - 2016



Source: DAX-Indices, Eurostat

Pension Returns

Pension return calculations are not performed for book reserves and support funds. These are individual commitments to employees that will not increase or decrease depending on asset performance. The commitments are protected by the PSVaG, hence employees could estimate the exact amount they can expect in the retirement phase. Furthermore, we do not have performance nor charges data available for the 2nd pillar direct insurances thus we cannot perform real return calculations for this occupational financing vehicle either.

In general, there are no taxes on dividends, income or capital gains to take into account during the accumulation phase of the real return calculations. However, the calculations are considerably complicated by the fact that Exempt-Exempt-Taxable (EET) and Taxable-Exempt-Exempt (TEE) taxation formulas (or intermixtures) can still be found depending on the effective date of the pension promise and the type of vehicle. Consequently, the after tax calculations are simplified and exclusively simulated as deferred

taxation for the occupational Pensionskassen and pension funds, as well as personal Riester and Rürup insurance contracts. For that matter, the average retiree income tax rate is estimated from customised data provided by the German Federal Ministry of Finance for the year of 2012 as the most recent information available[169], and set at 18%.

The classic pension insurance is not subject to deferred taxation but is however (partly) taxed during the capital accumulation phase (see Taxation chapter). Furthermore, performance data is available for a longer time span so the results cannot be directly compared to Riester and Rürup insurance contracts.

These drawbacks should be kept in mind when interpreting real returns, as well as the impact of subsidies, such as allowances.

Voluntary Occupational Pensions

Pensionskassen and pension funds

The following table shows real return calculations for 2nd pillar aggregate Pensionskassen as well as pension funds supervised by BaFin.

Table DE 8. Pensionskassen and pension funds' average annual rate of investment returns (in %)

	Nominal return* before charges, inflation, tax	Nominal return after charges and before tax, inflation	Real return after charges, inflation and before tax
2002	2.81	2.55	1.30
2003	4.58	3.79	2.67
2004	4.94	3.91	1.72
2005	4.89	4.27	2.00
2006	4.60	4.15	2.74
2007	4.16	3.84	0.75
2008	1.62	1.34	0.24

[169] Data on income tax for a given year can only be completed three years later and is subsequently reprocessed by State Statistical Offices. The data also includes joint tax assessments.

2009	4.76	4.49	3.48
2010	4.94	4.69	2.92
2011	3.01	2.79	0.45
2012	4.82	4.60	2.59
2013	4.29	4.08	2.72
2014	4.61	4.41	4.41
2015**	3.25	3.04	2.83
Annual average	4.09	3.71	2.19

** Nominal return after investment management costs*

*** Data for 2015 is preliminary.*

Source: OECD (2016), OECD Main Economic Indicators database (Accessed on 14 June 2017); Global Pension Statistics (Accessed on 14 June 2017); Eurostat; Own Research.

To simulate the impact of taxation on the real return of Pensionskassen and pension funds, the average income tax rate for retirees has been applied to the 70% of the pay-outs that were subject to deferred taxation in the year of 2015.

Table DE 9. The real return of Pensionskassen and pension funds

	Real return after charges, inflation, tax (14-year average) / 2002-2015
Pensionskassen and pension funds	1.82%

Source: Bundesministerium der Finanzen; Own Research

Since German pension funds and Pensionskassen are currently exclusively offered as DB or hybrid plans (see Pension Vehicles chapter), employees bear minor risks when investments perform poorly[170].

[170] OECD (2016)

Voluntary Personal Pensions

Information on the performance of personal pension plans is hard to obtain and there are considerable controversies surrounding the proper estimation method, notably for Riester insurance contracts.

Calculations of real returns for Voluntary Personal Pensions are only executed for insurance contract types since information on returns and charges is not consistently available for other types of personal pension plans. Nonetheless, this provides an important insight into the most important part of promoted personal pension plans since about two-thirds of all Riester pensions are designed as pension insurance contracts, as are all Rürup pensions.

The following real return estimations are based on average return rates calculated by Assekurata. One has to keep in mind that the calculations made by Assekurata are based on voluntary participations. For instance, in 2016, 83 providers were asked to participate in the survey with 21 providers not responding, which amounts to a participant's market share of 86%. This may lead to a bias based on voluntariness. The return rates provided by Assekurata are composed of a guaranteed interest part ("*Höchstrechnungszins*" or "*Garantiezins*"), set and capped by the German Federal Ministry of Finance, and a surplus sharing part ("*Überschussbeteiligung*")[171]. Furthermore, the return figures provided are related to the investment part of the gross premium which is only about 60% to 90% of the total premium depending on not only deductions of distribution and administrative charges, but also risk premium[172].

[171] Terminal bonuses and participation in valuation reserves are not included in these calculations as they are difficult to compare and not equally applied. Terminal bonuses are usually paid on the maturity of the policy or on death. Similarly, valuation reserves only apply to about 5% of policy holders (See http://www.gdv.de/2014/03/bewertungsreserven-kurz-erklaert/, accessed on 14 June 2017). One has to keep in mind that they account for, on average, 20% of the total return. (See http://www.finanztip.de/kapitallebensversicherung/, accessed on 14 June 2017).

[172] In life insurers' advertisements, the return percentage figures that are published are always linked to the investment part of the premiums and, very often, the insurers do not

Though already introduced in 2002, data on investment return rates has only been available since 2005 for Riester pensions, just like for Rürup pensions which were introduced that year. Return rates for classic pension insurances are available for a 17-year period. For our real return estimations, we assumed that acquisition charges are spread over five years for all insurance contract types. Consequently, the charge burden in the first five years is more severe.

Riester pension

Table DE 10. Riester pension insurances' average annual rate of investment returns (in %)

	Nominal return before charges, inflation, tax	Nominal return after charges and before tax, inflation	Real return after charges, inflation and before tax
2005	4.24	2.82	0.58
2006	4.18	2.79	1.39
2007	4.18	2.81	-0.24
2008	4.36	2.99	1.87
2009	4.27	2.92	1.92
2010	4.19	3.91	2.15
2011	4.05	3.79	1.43
2012	3.92	3.66	1.66
2013	3.56	3.31	1.97
2014	3.35	3.11	3.11
2015	3.11	2.88	2.68
2016	2.78	2.56	0.85
Annual average	3.85	3.13	1.61

Source: Assekurata; Eurostat; GDV; Own Research

One has to note though that for Riester products, subsidies which are not included in these calculations can play an important role in determining

differentiate between the gross premium and the investment part of the premium which is misleading from a consumer's perspective.

their performance. This is especially the case for low earners or for families with many children. Average and high earners benefit significantly from tax exemptions.

Rürup pension

Table DE 11. Rürup pension's average annual rate of investment returns (in %)

	Nominal return before charges, inflation, tax	Nominal return after charges and before tax, inflation	Real return after charges, inflation and before tax
2005	4.31	2.89	0.65
2006	4.20	2.81	1.41
2007	4.21	2.84	-0.22
2008	4.37	3.00	1.88
2009	4.27	2.92	1.92
2010	4.21	3.93	2.17
2011	4.07	3.81	1.45
2012	3.90	3.64	1.64
2013	3.57	3.32	1.98
2014	3.36	3.12	3.12
2015	3.13	2.90	2.70
2016	2.81	2.59	0.88
Annual average	3.87	3.15	1.63

Source: Assekurata; Eurostat; GDV; Own Research

As discussed in the Pension Vehicles chapter, the contributions to Rürup pensions are, in contrast to Riester pensions[173], not guaranteed and cannot be recalled or capitalised, which can lead to the following difficulty: Rürup pensions were specifically introduced for self-employed people and freelancers whose incomes may vary considerably from year to year, in particular in times of crisis. If contributions can no longer be maintained,

[173] Contributions (gross premiums) and state subsidies for all kinds of Riester contracts are guaranteed.

and with lifelong contracts, ongoing administrative charges can gradually diminish invested retirement savings. Hence, consumer advice centres[174] usually only advice Rürup pensions if consumers are professionally established and if the payments of contributions are secured in the long run[175].

In order to simulate real returns after tax, the average income tax rate estimation for retirees has been applied to 72% of the pay-outs that were subject to deferred taxation in the year 2016.

Table DE 12. The real return of Riester and Rürup pensions

	Real return after charges, inflation, tax (12-year average, in %)
	2005-2016
***Riester* pension**	1.26
***Rürup* pension**	1.28

Source: Bundesministerium der Finanzen; Own Research

Personal pension insurance

The classic pension insurance is not subject to deferred taxation and data is available for a longer time span so one has to be careful with the comparison of investment returns within the 3rd pillar. Since contributions have to be paid from taxed income, classic pension insurances are generally less favourable than Riester or Rürup pensions with regard to the tax burden. However, the complexity of taxation in all three stages (contribution phase, accumulation phase[176] and pay-out phase) could not be taken into account for this study and consequently after tax simulations are only executed for pension products with deferred taxation schemes.

[174] Such as Verbraucherzentrale Hamburg e.V.
[175] Gasche, Bucher-Koenen, Haupt, Angstmann (2013)
[176] The contribution and the accumulation phase in reality can be considered to be the same since the beneficiary is contributing normally for the entire duration of his professional career, but for the purpose of our study we are considering money-weighted returns and therefore we distinguish between the moment when the contribution is made, the period of the investment and finally the moment when the investment is redeemed.

The following table shows real return calculations for 3rd pillar pension insurance contracts.

Table DE 13. Pension insurances' average annual rate of investment returns (in %)

	Nominal return before charges, inflation, tax	Nominal return after charges and before tax, inflation	Real return after charges, inflation and before tax
2000	7.15	5.63	3.40
2001	7.10	5.59	4.17
2002	6.12	4.64	3.37
2003	4.84	3.39	2.27
2004	4.43	3.00	0.83
2005	4.31	3.94	1.68
2006	4.24	3.90	2.48
2007	4.25	3.93	0.84
2008	4.39	4.08	2.95
2009	4.28	3.98	2.97
2010	4.20	3.92	2.16
2011	4.07	3.81	1.45
2012	3.91	3.65	1.65
2013	3.61	3.36	2.02
2014	3.40	3.16	3.16
2015	3.16	2.93	2.73
2016	2.86	2.64	0.93
Annual average	4.48	3.85	2.29

Source: Assekurata; Eurostat; GDV; Own Research.

The very favourable nominal returns from the early 2000s raise the annual average of classic pension insurances. Return figures from 2005 onwards, resemble those of Riester and Rürup pensions.

Conclusions

The performance of Pensionskassen and pension funds in real terms has been positive over the whole period from 2002-2015, with an annualised average return of 1.8% after taxation. Even the difficult years of 2007, 2008 and 2011 still recorded modest positive real returns. German Voluntary Occupational Pensions are currently exclusively offered as DB or hybrid plans but pension reforms, including the introduction of DC pension vehicles as early as January 2018, are under way. It remains to be seen if the abandonment of traditional guarantees, which has already created much debate and uncertainty among employees and providers, can boost participation in occupational pensions, in particular for SMEs.

The real annualised average returns of Voluntary Personal Pensions have also delivered positive results, about 1.6% for Riester and Rürup pension insurances over a 12-year span, and 2.3% for classic pension insurances over a 17-year span. Only the Riester and Rürup pensions recorded a year with negative real performances in 2007 (-0.2% each) due to the impact of high initial charges. The after tax simulation for the State sponsored Riester and Rürup pension insurances recorded annualised real average returns of 1.3% each. Old-age provisions through Voluntary Personal Pensions have somewhat stalled over recent years and a considerable share of subscribed Riester pensions is put on hold for the time being. Persistent low interest rates, as reflected in the steadily falling guaranteed interest rate (from 2.75% in 2005 to 0.9% in 2017), contribute to rendering new contracts of these pensions less profitable. While more and more providers already undercut these minimum return guarantees, a definite abolishment of this regulated interest fraction is still under discussion. The other important return part of pension insurances, the surplus sharing, has likewise been plummeting over the last years, if nothing else to fulfil commitments of former contracts with higher guarantees. Voluntary Personal Pensions, especially the bureaucratic and expensive Riester pensions, continue to be at the centre of controversy, with new legislative stimuli coming through higher allowances in 2018.

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Pension Savings: The Real Return

2017 Edition

Country Case: Italy

Introduction

The pensions macro context

Italy spends 16.3% of its GDP on state pensions, while the average OECD level is at about 8.2%.[177] Pensions, therefore, represent a massive ratio of GDP in the country. Italy faces a huge demographic challenge. The number of retirees, unemployed or out of the labour force is equal to more than four fifth of the number of employed people (economic dependency ratio). The population aged 65 years or more will represent 70% compared to the population aged 15-64 in 2050, the highest percentage across developed countries, on an equal footing with Japan.[178]

Employment rates also compare unfavourably to other OECD countries, with 51.1% of the population aged 55-64 working in 2016, while the average employment rate for OECD countries was 59.6%.[179]

Given this context, the urgency to reform the pension system was clear. In 2011, the minister of Welfare and Social Policy under the Monti government, Elsa Fornero, put into place a huge pension reform (law n.214) to set the system back to equilibrium. Under the new system, pension eligibility is based on working years rather than age. Earlier retirement is possible but with penalties. Given the increase in retirement age, the expected replacement rate of currently active workers, who work a full-time career without interruption, is about 70%[180] and is still one of the

[177] Source: OECD.
[178] Fornero E., 2017.
[179] Source: OECD, 2016.
[180] OECD, Pension at a glance.

highest in Europe; this compares well with previous replacement rates, although it was obtained through a substantial increase in the pension age. Within this context, with a substantial replacement rate obtained through high mandatory contributions (33%) and a high retirement age, the income drop at retirement is not as worrisome as in other countries, such as in the UK. There, the mandatory contribution rate is set at 10% and, correspondingly, the replacement rate is about 30%. It is worth remembering that mandatory contributions are directed solely to the statutory and compulsory system.

Given this strong component of mandatory contributions, we would expect both complementary pensions and private savings to play a small role, which should, in turn, be driven by a foreseen reduction in income levels, such as during retirement. While the former savings in pension funds are tiny, private savings are still consistent. If all pension contributions and home ownership were transformed into an annuity, the corresponding stream of generated incomes at retirement would be very high.

From a broader perspective, all savings, and not only pension savings, should be accounted for to measure income adequacy at retirement, without forgetting that one of the main actors in this broader picture is home ownership.

The Italian Pension System

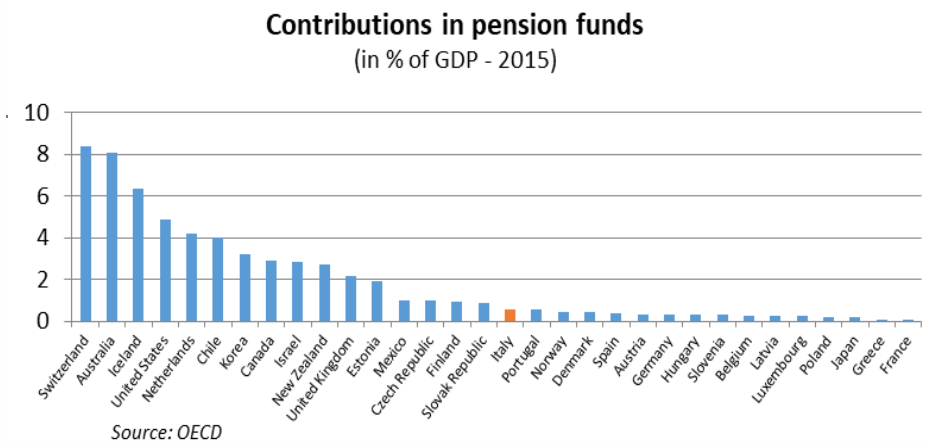
The Italian Pension System is composed of a i) compulsory (now Notional Defined Contribution) pension system and ii) a voluntary private and funded pension system, including the pension schemes at the individual and collective levels.

In Italy, the first pillar, the State Pension, represents the main pension vehicle. Since the structural reform implemented by Minister Dini in 1995, the Italian pension system has been re-designed according to the Notional Defined Contribution system, in order to guarantee the stability of public finances.

Given the predominance of the public pension system in the country, it is not surprising that complementary pensions have little chance to take off. The possible effect of the crowding out of private pension by public pensions has been studied extensively. However, there is little consensus on the issue. If anything, displacement is very small or even negative.[181] However, it is anticipated that more demanding requirements in terms of age and contributions to benefit from the public pension could lead to an increased recourse to complementary pensions that would provide flexibility at the age of retirement.

Based on the percentage of total resources channelled into pension schemes, Italy could be said to be the most "*prepared*" country for retirement, with a percentage of pension contributions equalling approximately 33% of gross earnings, which is the highest percentage of mandatory savings for retirement purposes in Europe. The public pension system is thus sustainable, even though the Italian Constitutional Court stated in April 2015 that the suppression of indexation of pensions on inflation included in the "*Fornero* law" was unconstitutional, a ruling that will add unforeseen costs to the first pillar estimated at €500 mln.

Graph IT I. Contributions in pension funds (in % of GDP- 2015)



[181] Rossi, 2009.

The TFR, Severance Payment

Severance payment, which is paid upon work termination, represents a peculiar vehicle for pension asset accumulation, also known as *Trattamento di Fine Rapporto* (TFR). The TFR is computed on an annual basis and is equal to 6.91% of remuneration. The TFR rate of return was 1.5% in 2016. It is mandatorily saved and returned upon termination of employment (such as retirement, the most common form).

The TFR can also partially be drawn (70%) before the end of the contract, but only under very special circumstances of need, which include health problems, first-house purchase and parental leave. Moreover, the stability law of 2015 enabled employees in the private sector to receive their severance payment in advance with a State guarantee on bank loans to companies. This innovation which was decided on an experimental basis from March 2015 to June 2018, reduces the money available to employees at retirement.

The tax rate of pension benefits that come from TFR varies between 9% and 15%, depending on the length of enrolment in the pension fund.

The TFR represents a huge savings pot and its management underwent heavy changes from January 2007 onwards. Since then, each worker can opt to accumulate their TFR by joining a supplementary pension system. If a worker does not make any such decision, tacit consent applies for the TFR to be transferred to a sector fund; funds are transferred to collective pension funds, if there are any for that specific sector.

This change represented a small cultural revolution for the Italian pension structure, where pensions had previously been provided by the public sector, with no active role for workers in choosing how much to invest. Workers have mandatorily contributed a conspicuous amount of their income, through the first pillar state system, with no say as to where and how to invest their savings. With the TFR law, workers are now offered the possibility to join pension funds.[182] The severance indemnity stock of

[182] Cannata and Settimo, 2007.

workers who did not opt for pension funds, if belonging to companies with more than 50 employees, is transferred to INPS (National Institute for Social Security), which manages the severance payment according to the law. For those who work in firms with less than 50 employees and who did not opt for pension funds, their TFR remains in the firms they work for, acting, de facto, as a loan to the firm.

If employees decide to opt for the pension funds, they can choose among open pension funds, closed pension funds or PIPs (Individual Pension Plans). An important aspect of this arrangement is that, if opting for PIPs, workers can decide the amount they contribute, a new element in the Italian framework, with no discretion in terms of pension contributions.

Current Pension System

The current pension system is based on a Notional Defined Contribution system, while in the past it was a generous Defined Benefit system. The Italian pension system has been reformed intensively. The year 1995 has been taken as the threshold for moving from defined benefit towards a defined contribution system, due to one of the most important laws that restructured the pension system, the Dini reform (law n. 335/1995). Indeed, all workers that entered the market after 1995 have been accruing their pension entitlement according to a defined contribution method, while, before 1995, pension entitlements were computed according to an earnings-related system.

The three pillars of the Italian pension system can be summarised as follows:

- The first (state and mandatory) pillar is made up of two tiers. The zero tier consists of a social pension ensuring a minimum level of income for the elderly. The first tier covers employed people and is, for the current new generations, a notional defined contribution system, as explained above.
- The second pillar is made up of supplementary occupational schemes. These can be closed occupational pension funds (managed by social

partners) or open pension funds consisting of collective affiliations (managed by financial institutions).[183] The TFR is also part of the second pillar. TFR is a deferred indemnity. Each year the employer has to put aside (by law) part of the worker's salary which will be returned to the employee upon termination of the employment contract.

- Finally, the third pillar is made up of voluntary contributions to pension schemes, Individual Pension Plans (PIPs), as well as by contributions to open funds for individual affiliations.

Pension Vehicles

Complementary pension funds

Complementary pension funds were introduced in 1993 and are composed of contractual funds, open funds and individual pension plans provided by life insurance companies.

In Italy, the percentage represented by private pension funds out of total GDP is rather small, one of the main reasons being that the first pillar dimension makes it very difficult for private funds to take-off. 33% of contributions from gross income are compulsorily put into first pillar pension contribution, which leaves little space for personal pension fund development.

Individual pension funds can represent the main vehicle for pension accumulation, athough when state pension contributions are high, it comes natural to expect that private pension funds will not play a predominant role in shaping retirement savings. This is likely to be the case for Italy.

At the end of 2016, the total number of workers enrolled in personal pensions amounted to 7.8 million.[184] As in previous years, but at a slower pace, PIPs subscriptions contributed to the increase in membership. Until 2014, the number of new members flowing into pension plans was not increasing fast and was driven by insurance companies and banks.

[183] Guardiancich, 2010.
[184] COVIP, annual report 2016.

In 2016, the number of closed funds members also increased following the implementation of new automatic enrolment programmes: Fondapi (SMEs), Byblos (Graphic, Editorial, Paper Manufacturers), Preverdi (construction industry), and Cooperlavoro in the cooperative sector. However, it should be noted that these programmes only marginally increased assets managed by the pensions industry, as only employers contributions are compulsory, not those from employees. It is worth noting that about 200,000 individuals have very few savings stored in complementary pensions, around €100.

The vast majority of members of complementary pension funds are employed in the private sector (about 4 million).

The budget law of 11 December 2016 allows members of complementary defined contribution pension funds who are close to retirement age to receive early retirement income from part or the whole of their accumulated savings (*Rendita integrativa temporanea anticipata* or RITA). Eligible employees are those who benefit from a similar provision in the first pillar pension (*Anticipo finanziario a garanzia pensionistica* or APE). RITA will be at experimental stage until the end of 2018. It is anticipated that this new flexibility will be an incentive to save in pension funds.

Table IT 1. Number of subscribers in Complementary Pension Funds (*in thousands €*)

	2013	**2014**	**2015**	**2016**
Closed Pension Funds	1951	1944	2419	2597
Open Pension funds	985	1053	1150	1259
Pre-existing Closed Pension Funds	655	654	645	654
New PIP	2134	2454	2601	2869
Old PIP	505	505	434	412
Total	**6230**	**6610**	**7249**	**7791**

Source: Covip, annual reports 2013, 2014, 2015, 2016

The main features of complementary pensions are:

1. Voluntary membership
2. Funded

3. Managed by banks, financial institutions, insurance companies
4. Supervisory authority: COVIP (Commissione di Vigilanza sui fondi Pensione)

When looking at the portfolio composition of the complementary pension system as a whole, "*safe*" assets constitute the majority. Treasury bonds are still the main investment although their share of the total portfolio declined from 49.1% to 46.5%. The relative weight of corporate bonds continues to increase. The share of direct holdings of equities is 16.3%. COVIP calculated that, taking into account equities held through investment funds, the exposure to equities was 24.8%.

Table IT 2. Asset allocation of pension funds (end of 2016, in %)	
Treasury bonds	46.5
Corporate bonds	14.5
Equities	16.3
Mutual funds	13.5
Real estate	1.9
Alternatives	0.9
Cash	6.4
Total	100

Source: COVIP

Law no. 703 that regulates pension funds' asset allocation was approved at the end of 2014. It allows for more flexibility, moving from a quantitative approach to a principle-based one. However, short selling remains prohibited and funds should allocate a minimum of 70% to listed products.

Below we describe the different types of complementary forms of pensions.

Contractual funds or Closed funds *(Investment portfolio at end of 2016: € 46 billion)*

Contractual funds are also called closed funds since only certain groups of people can join. As an example, among employees, subscription is reserved to those whose contracts are regulated by a collective agreement. As for

the self-employed, contractual agreements are usually provided by professional associations, and only their members can subscribe.

They are defined contribution schemes and the contribution amount is established by the fund's bylaws.[185]

All complementary pension funds are independent legal entities, with their own capital. The governance is based on the principle of equal representation among employers and employees.

The Board of Directors is responsible for the investment strategies and chooses the investment manager, as well as the depositary bank and the designated entity dealing with administration.

The fund must report at least on an annual basis. Given the long-term nature of funds, the manager's mandate is usually five years or even longer for certain types of assets.

At the end of 2016, assets managed by contractual funds amounted to € 46 billion.[186]

Since the end of 2016, employees in the automobile sector and the highway sector are automatically affiliated to a pension fund. Employers in the automobile sector contribute 1% of the salary and 0.5% in the highway sector.

Open funds *(Investment portfolio at end of 2016: € 17.1 billion)*

In contrast to closed funds, membership is not restricted to certain groups. In addition, the fund is not a legal entity and it can be established for collective or individual members, or both.

Like contractual funds, open funds are defined contribution funds.

Like for closed funds, a depositary bank is required and administration costs can be outsourced.

[185] Paci et al, 2010.
[186] COVIP annual report, 2016.

At the end of 2016, assets managed by open funds amounted € 17.1 billion.

PIP, individual pension funds *(Investment portfolio at end of 2016: € 24 billion)*

PIPs are subscribed to on an individual basis only, as insurance contracts within the legal framework of complementary pension funds.

Within PIPs policies, two types of insurance contracts are offered: with-profit or unit-linked. A combination of the two is possible to get a more flexible risk-profile.

The with-profit policies guarantee a minimum interest rate (guaranteed and consolidated in the company's accounts) which is added to a quota related to the financial performance. The unit-linked policies do not have a guarantee. Their performance depends on the value of the unit where contributions are invested.

Public employees

Public employees deserve a special mentioning, as the law introducing pension funds excluded them. Up to now, coverage of public employees is limited. Contractual pension funds are only possible for school personnel (Espero) and National Health personnel and regional or local authorities (Perseo and Sirio).

All these forms of pension funds are supervised by the Commissione di Vigilanza sui Fondi Pensione (Commission of Vigilance on Individual Pension funds - COVIP).

The legislation establishing new pension funds dates back to 1993. However, pre-existing pension funds are the most numerous and they benefit from a more favourable treatment than the new ones. As they were created before the 1993 law, they were semi-autonomous in their management, and they still benefit from this treatment. They can collect money directly from subscribers without intermediaries.

Life Insurance *(Total mathematical provisions at the end of 2014: € 657 billion)*

Despite being a potential great channel for savings and a replacement of traditional pension vehicles, the life insurance market in Italy is larger than the private pensions market but smaller than in other European countries. Jappelli and Pistaferri (2008) show that a reform of tax breaks, which could have dramatically increased the demand for life insurance, actually had no effect. Another recent paper by Bottazzi et al. (2009) finds that households have responded to the cut in pension benefits mostly by increasing real estate wealth, particularly households that are able to more accurately estimate future social security benefits. On the other hand, they do not observe an increase in the propensity to purchase private pension funds and life insurance after the reform.

Charges

COVIP calculates a synthetic indicator of cost for a member who contributes €2,500 every year with a theoretical annual return of 4%. The calculation methodology of the indicator has recently been revised by COVIP in order to eliminate distortions between the categories of funds. Since 2014, the tax rates on investment revenues depend on the assets included in their portfolio (see below). In compliance with a decision of March 2015, the cost indicator is now calculated gross (no longer net) of the tax paid by pension funds on their revenues.

The average cost indicator in 2016 was stable as compared to 2015 but maximum and minimum figures slightly increased.

There is a huge variation in pension fund costs. In closed pension funds, the indicator cost is about 1% for two years of participation, while it drops to 0.3% after 35 years of participation. As for PIP, the cost indicator drops from 3.9% to 1.8%. It has to be reminded that small differences in the cost will reflect into effects of considerable magnitude. Ceteris paribus, PIP (open funds) will have a final return that is 23% (17%) lower than that of closed pension funds.

The cost indicator decreases over time (duration of membership), with initial fixed costs being progressively amortised.

There are wide differences within each category of funds, depending on the distribution channels of the products and the fees paid to distributors. Scale economies translate into lower costs for closed funds while no such impact can be observed on new PIP and open funds, according to a review of individual figures by COVIP.

Table IT 3. Average costs at the end of 2016 (in %)*

	2 years	5 years	10 years	35 years
Closed Funds	**1**	**0.6**	**0.4**	**0.3**
Min	*0.5*	*0.3*	*0.2*	*0.1*
Max	*3*	*1.4*	*0.9*	*0.6*
Open Funds	**2.3**	**1.5**	**1.3**	**1.2**
Min	*0.9*	*0.7*	*0.5*	*0.1*
Max	*5.1*	*3.4*	*2.8*	*2.4*
PIP (new)	**3.9**	**2.7**	**2.2**	**1.8**
Min	*1*	*0.9*	*0.6*	*0.4*
Max	*6.5*	*4.9*	*4.1*	*3.5*

Source: COVIP Relazione annual, 2016
* Simple arithmetic averages within each category. Costs differ depending on the number of contribution years.

Taxation

The regime of taxation chosen by Italy is essentially an ETT (exemption, taxation, taxation), corresponding to the following three stages: contribution, accumulation and payment.

In stage 1, contributions paid in benefit from a favourable tax treatment. Contributions can be deducted from the taxable income up to € 5,164.57 per year (the computation includes employer's contributions).

Stage 2, accruals are taxed. 11.5% of tax was applied on the accrued income paid by the insurer or by the pension fund until 2014. From 1 January 2015,

the rate has increased to 20%. However, tax payable on income derived from public bonds is limited to 12.5%. The difference in taxation rates of bonds and shares is an incentive to change the asset allocation towards the former, a trend that will probably lower the returns of pension products in the future. But the budget law of 31 December 2016 foresees that assets invested in European shares or European investment funds (up to 5% of the fund's total assets) are exempted from income tax.

In order to avoid double taxation, benefits are taxed with respect to the shares not taxed during the accumulation phase. Hence, contributions that have not been deducted, and thus already taxed, will not be taxed again.

Stage 3, corresponding to benefits is taxed. Benefits taxation varies from 9 to 15% according to the duration of membership. Income received before retirement age as part of the RITA scheme (see above) is taxed at 15%, reduced by 0.3% for each year over the fifteenth year of participation in supplementary pension schemes, with a maximum reduction limit of six percentage points. If years of enrolment in the supplementary pension scheme include years prior to 2007, those years can be taken into account up to a maximum of 15.

Pension Returns

Below we illustrate returns broken down by type of activity. Returns are calculated net of taxes paid by the pension funds on investment revenues.

Returns of all categories of funds fell sharply in 2015 as a consequence of historically low interest rates paid on bonds. Better returns were recorded by funds predominantly invested in equity. 2016 saw a slight upturn in the case of unit-linked PIP and stability in the case of other investment vehicles.

Table IT 4. Nominal returns net of charges and taxes on investment revenues by type of funds												
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Closed Funds	**7.5**	**3.8**	**2.1**	**-6.3**	**8.5**	**3**	**0.1**	**8.2**	**5.4**	**7.3**	**2.7**	**2.7**
Guaranteed Bonds	-	-	-	3.1	4.6	0.2	-0.5	7.7	3	4.6	1.9	0.8
Only Bonds	2.1	2.6	2.2	1.6	2.9	0.4	1.7	3	1.3	1.2	0.5	0.2
Mixed	6.9	2.7	2.1	-3.9	8.1	3.6	1.1	8.1	5	8.1	2.4	3.2
Balanced	7.9	5.6	2.4	-9.4	10.4	3.6	-0.6	9.2	6.8	8.5	3.3	3.2
Equity	14.9	8.2	1.3	-24.5	16.1	6.2	-3	11.4	12.8	9.8	5	4.4
Open Pension Funds	11.5	2.4	-0.4	-14	11.3	4.2	-2.4	9.1	8.1	7.5	3	2.2
Guaranteed	2.9	1	1.9	1.9	4.8	0.7	-0.3	6.6	2	4.3	0.9	0.7
Pure Bonds	3.3	-0.2	1.6	4.9	4	1	1	6.4	0.8	6.9	1	1.3
Mixed	6.4	1	0.3	-2.2	6.7	2.6	0.4	8	3.6	8	2.2	1.4
Balanced	11.4	2.4	-0.3	-14.1	12.5	4.7	-2.3	10	8.3	8.7	3.8	2.7
Equity	16.2	3.7	-1.6	-27.6	17.7	7.2	-5.3	10.8	16	8.7	4.3	3.2
PIP new												
With Profits - Separate Management				**3.1**	**3.1**	**3.2**	**3.2**	**3.2**	**3.2**	**2.9**	**2.5**	**2.1**
Unit-linked				**-21.9**	**14.5**	**4.7**	**-5.2**	**7.9**	**10.9**	**6.8**	**3.2**	**3.6**
Bonds				2.4	3.7	0.6	0.8	4.9	-0.3	3.3	0.6	0.4
Balanced				-8.3	7.8	2.5	-3.5	6.4	5.8	8.2	1.8	1.5
Stocks				-32.4	20.6	6.7	-7.9	9.6	17.2	7.1	4.4	6

Source: *COVIP Annual Reports*

Closed funds

Table IT 5 estimates the total net returns for closed pension funds.

Column (2) records the nominal returns after charges and taxes on investment revenues calculated by COVIP (see table 4)

Column (1) reflects nominal returns before charges. It adds the synthetic cost indicator for a 35-year subscriber to column (2), as reported by COVIP. Until 2014, the cost indicator was calculated net of taxes on investment revenues ("*imposta sostitutiva*") but the latter was not disclosed in COVIP

statistics. Hence, we added 11.5% to the cost indicator of the positive nominal return before charges (11.5% was the tax rate on investment returns until 2014). From 2015, the cost indicator was calculated gross of these taxes, hence a correction is no longer needed.

Column (3) is equal to column (2) minus the Inflation Rate (as CPI index variation in percentage). Column (4) is the net return, equal to column (3), once 15% of the return has been taken out of the nominal return after charges. The tax can be reduced for each year after the 15th by 0.3%, for a maximum of 6 percentage points of reduction in taxation of the benefit.

We calculate the average annual rate of investment returns over the whole period 2000-2016 and over the period 2008-2016 because the legislative framework of pension funds was overhauled in 2007.

Between the end of 1999 and the end of 2016, the annual real return of closed funds after deduction of inflation, charges and taxes was 0.60%. Over the most recent sub-period 2008-2016, it went up to 1.16%.

Table IT 5. Closed pension funds' average annual rate of investment returns (in %)

	Nominal return	Nominal Return, after charges	Real Return , net of inflation and charges, before taxes on benefits	Real Return net of inflation, charges and taxes on benefits
2000	3.9	3.6	1.0	
2001	3.7	3.4	1.7	
2002	-3.2	-3.4	-5.9	
2003	5.3	5.0	2.1	
2004	4.9	4.6	2.2	0.60
2005	7.8	7.5	5.2	
2006	4.1	3.8	1.6	
2007	2.3	2.1	0.1	
2008	-6.2	-6.3	-9.5	
2009	8.8	8.5	7.6	

2010	3.2	3.0	1.4	
2011	0.3	0.1	-2.7	
2012	8.5	8.2	4.7	
2013	5.7	5.4	4.0	
2014	7.6	7.3	7.1	
2015	3.0	2.7	2.7	
2016	3.0	2.7	0.8	
Annual average 2000-2016	3.62	3.35	1.33	
Annual average 2008-2016	3.67	3.41	1.66	1.16

Source: Own calculations based on COVIP, Eurostat

Open funds

We now proceed to calculate the returns for Opens Funds, using the same methodology as for closed funds.

Between the end of 1999 and the end of 2016, the real return of open funds after deduction of inflation, charges and taxes has been negative (-0.42% per year on average). It was positive (+0.78% per year on average) for the sub-period 2008-2016.

Table IT 6. Open pension funds' annual average rate of investment returns (in %)				
	Nominal return	Nominal return, after charges	Real return, net of inflation and charges, before taxes	Real return, net of inflation, charges and taxes
2000	4.2	3	0.4	
2001	-4.7	-5.6	-7.8	
2002	-12.3	-13.1	-15.4	
2003	6.9	5.7	2.8	
2004	5.5	4.3	2	
2005	12.9	11.5	9.1	
2006	3.6	2.4	0.2	
2007	0.7	-0.4	-2.4	
2008	-13.2	-14	-16.9	
2009	12.7	11.3	10.4	-0.42
2010	5.4	4.2	2.6	
2011	-1.3	-2.4	-5.2	
2012	10.4	9	5.6	
2013	9.4	8.1	6.7	
2014	8.8	7.5	7.3	
2015	4.2	3	3	
2016	3.4	2.2	0.3	
Average annual 2000-2016	3.05	1.89	-0.14	
Average annual 2008-2016	4.14	2.94	1.21	0.78

Source: Own calculations based on COVIP, Eurostat.

Individual Pension Plans

Individual Pension Plans have the highest costs on the pension product market in Italy. The charges applied to IPPs were 1.8% for long term subscribers in 2015.

The performance of the PIPs differs according to types. With-profit policies have a comparable performance to closed funds while unit-linked PIPs have a negative average performance on the market comparable to open funds. However, performances are very volatile and this could be associated with the relative short timeframe considered, and which, in fact, corresponds to the financial crisis years. Moreover, given the shorter time frame, the high variability might lead to misleading conclusions. In 2016, the returns of unit-linked PIPs were stable as compared to 2015 and they were superior to those of with-profit PIPs.

Table IT 7. PIP With Profits: Average annual rate of investment returns (in %)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	Annual average 2008-2016
Nominal return	4.7	4.7	4.8	4.8	4.8	4.8	4.5	4.3	3.9	4.12
Nominal Return, after charges	3.1	3.1	3.2	3.2	3.2	3.2	2.9	2.5	2.1	2.65
Real Return , net of inflation and charges, before taxes	-0.4	2.3	1.6	0.3	-0.1	1.9	2.7	2.5	0.2	1.09
Real Return net of inflation, charges and taxes					0.77					

Source: Own calculations based on COVIP, Eurostat

Table IT 8. PIP Unit Linked: Average annual rate of investment returns (in %)										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	Annual average
Nominal return	-20.7	16.2	6.3	-3.8	9.5	12.6	8.4	5.1	5.1	3.74%
Nominal Return, after charges	-21.9	14.5	4.7	-5.2	7.9	10.9	6.8	3.2	3.2	2.12%
Real Return , net of inflation and charges, before taxes	-24.5	13.6	3.1	-7.9	4.5	9.5	6.6	3.2	3.2	0.63%
Real Return net of inflation, charges and taxes					-0.01%					

Source: Own calculations based on COVIP, Eurostat.

Conclusion

The Italian Pension System has a strong State connotation, which is likely to displace Complementary Pension Funds. 7.8 million individuals are enrolled into pension funds. The mandatory contribution rate amounts to 33%. Since the system is pre-funded, the contributions to the pension system will become the future pension incomes. This constitutes a plausible explanation for why the development of the second and third pillar is taking a long time to take off. First experiences of automatic enrolment implemented by labour agreements in 2015 and 2016 did not fundamentally change this framework, as employers' contributions were still low and few employees voluntarily contributed to the new schemes.

The Pension Funds can be of three types. Closed Occupational Pension Funds (managed by Social Partners), Open Funds (Managed by Financial Institutions) and Individual Pension Plans (PIP), split into with-profits policies and unit-linked policies.

We calculated the return rate associated to open funds, closed funds and PIPs. The average fund has exhibited a huge variability over the years considered. We calculated an estimate of a net return rate over the 2000-2016 year range on closed and open funds and PIPs.

With-profit PIPs showed the highest returns (an average of + 0.77%) but the history (since 2008) is shorter than for closed and open funds. Unit-linked PIPs performance was slightly negative. Since 2000, closed funds recorded a positive average return (0.60%), while open funds recorded a negative one of -0.42%.

Compared to 2015, the investment performance of all categories of funds deteriorated in 2016.

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Pension Savings: The Real Return

2017 Edition

Country Case: Latvia

Introduction

Latvia is currently operating a multi-pillar pension system based on three pension pillars. The reform of the Latvian pensions system followed the World Bank's recommendations on creating a pension system with unfunded pay-as-you-go (PAYG) and funded pension pillars. Since 2001, the Latvian multi-pillar pension system includes:

- Pillar I: state compulsory PAYG pension scheme,
- Pillar II: mandatory state funded pension scheme, partially financed by social insurance contributions diverted from pillar I;
- Pillar III: voluntary private pension scheme.

The introduction of the multi-pillar pension system has targeted its overall functionality on a different approach to each pension pillar operation, but with the overall objective of ensuring an adequate pension for individuals under the demographic risks of an aging society, as well as the pension system's overall future financial stability.

The reform of the Latvian pensions system started in 1995, when the decision was taken to implement the three pillar pension system. Firstly, the shift from the old Soviet-styled PAYG pension system to the Notional Defined Contribution (NDC) pension scheme (NDC PAYG pillar I) was carried out. The new law on state pensions was adopted by the Parliament in November 1995 and came into force on 1 January 1996. The state

mandatory-funded pension scheme (pillar II) started operating in July 2001. The private pension funds (pillar III) are operating since 1998.[187]

The Latvian pension system, from the point of view of individuals, therefore combines two aspects: personal interest in building wealth (based on a level of contributions and the length of the saving period) and intergenerational solidarity.

The Latvian NDC PAYG based pension pillar I has been effectively introduced by a partial reform in January 1996 and represents a mandatory scheme for all economically active persons, who make social insurance contributions calculated from a monthly salary (income). Paid contributions are used for the payment of old age pensions to the existing generation of pensioners. Pillar I is organized as a NDC scheme, where notional value of career contributions is recorded on each contributor`s personal account. Prior to the pension take-up, the pension capital recorded on individual NDC account is recalculated in accordance with the laws and regulations at the time when the individual accesses his/her pension.

Pension pillar II is in fact a state-organized 1bis pillar, meaning that part of individually paid social contributions are channeled to pillar II and recorded on individual pension accounts. Monthly contributions are invested into individually chosen investment plans (pension funds) managed by private pension fund management company. Pillar II was launched in July 2001 and completed the multi-pillar based pension reform in Latvia.

Pension pillar III (or voluntary private pension scheme) was launched in July 1998 and is organized as a private voluntary pension scheme. It accumulates individual contributions, as well as employer contributions made on the behalf of individual employee, to the selected voluntary pension fund.

[187] Groduma, M. 2002. Social insurance in Latvia: Seeking balance between financial stability and equity. In: "European regional meeting. New and revised approaches to social protection in Europe. Budapest, 13 - 15 November 2002. [Online] Available: http://www.issa.int/html/pdf/budapest02/2groduma.pdf

Table LV 1: Multi-pillar pension system in Latvia		
Pillar I	**Pillar II**	**Pillar III**
State Pensions	**State Funded pensions**	**Voluntary private pensions**
Mandatory	Mandatory	Voluntary
NDC PAYG	Funded	Funded
Financed by social insurance contributions	DC	DC
Benefits paid via State Social Insurance Agency	Financed by social insurance contributions	Privately managed two types of pension plans:
Publicly managed	Individual pension accounts	1. open (individual),
	Privately (and publicly) managed pension funds	2. closed (quasi occupational)

Source: Own elaboration, 2017

Pillar I – State Pension Insurance

State old-age pension (pillar I) should guarantee the minimum income necessary for subsistence. It is based on the NDC PAYG principle of redistribution, i.e. the social tax paid by today's employees covers the pensions of today's pensioners, however the NDC systems records the amount of paid contributions for each individual.

The state old-age pension is paid out of the social insurance contributions. Total level of social insurance contributions is 34.09% of gross salary for employees (employers contributes 23.59% and employees 10.5%; self-employed persons pay 27.52%). Of the total contribution in 2016, 14% funded the pillar I NDC pension and 6% was redirected to the individual's account under pillar II. The remaining portion of contributions financed

social security, such as disability pension, sickness and maternity benefits, work injury benefits, parent's benefits, and unemployment benefits.

Statutory retirement age in 2016 is 62 years and 9 months for both men and women. However, the law stipulates a gradual increase of the retirement age by three months every year until the general retirement age of 65 years will be reached in 2025. Early pension is possible in Latvia, if two conditions are met: 1) age 60 and 9 months (gradually rising by three months a year until 2025), and 2) at least 30 years of coverage.

Old-age pension is based on the insured's contributions, annual capital growth adjusted according to changes in the earnings index, and average life expectancy. Old age pension is calculated by taking into account two parameters:

1. K - accumulated life-time notional pension capital, which is an accrued amount of paid contributions since the introduction of the NDC system in 1 January 1996 until the pension granting month. However, during the transition period to a full NDC system, these two aspects are also taken into account:
    a) average insurance contribution wage from 1996 until 1999 (inclusive);
    b) insurance period until 1 January 1996;
2. G - cohort unisex life-expectancy at the time of retirement.

The annual old-age pension (P) is calculated as follows:

$P=K/G$

It can be said that the Latvian NDC PAYG pillar I has been shifted in a direction where 20% of all retirees receive a pension lower than € 213 (equal to 40% of the average net salary of the working population). However, considering the level of contributions for pension insurance (16% of salary), the average income replacement ratio of old-age pensions is rather low. The average income replacement ratios for old-age pension in Latvia are shown in the table below.

Table LV 2. Latvian NDC PAYG pillar statistics					
Indicator / Year	**Average Old-age pensions**	**Average Gross Monthly Wages**	**Gross Replacement Ratio**	**Average Net Monthly Wages**	**Net Replacement Ratio**
2003	92	274	33%	196	47%
2004	101	300	34%	214	47%
2005	115	350	33%	250	46%
2006	137	430	32%	308	44%
2007	158	566	28%	407	39%
2008	200	682	29%	498	40%
2009	233	655	35%	486	48%
2010	250	633	40%	450	56%
2011	254	660	38%	470	54%
2012	257	685	37%	488	53%
2013	259	716	36%	516	50%
2014	266	765	35%	560	48%
2015	273	818	33%	603	45%
2016	280	859	33%	631	44%

Source: Own calculations based on Central Statistical Bureau of Latvia (http://data.csb.gov.lv), 2017

http://data.csb.gov.lv/pxweb/en/Sociala/Sociala__ikgad__ienemumi/II0010_euro.px/?rxid=16744538-cfbc-4791-959d-41ac400179ee

A Minimum old-age pension mechanism has been introduced in Latvia. The minimum amount of the monthly old-age pension cannot be less than the state social security benefits (€ 70.43 monthly in 2016) with an applied coefficient tied to the years of service (insurance period):

1) persons with insurance period up to 20 years - 1.1;
2) persons with insurance period from 21 to 30 years - 1.3;
3) persons with insurance period from 31 to 40 years - 1.5;
4) persons with insurance period starting from 41 years - 1.7.

The minimum old-age pension is calculated using the basic state social security benefit multiplied by the respective coefficient that is tied to the number of service (working) years (see table below).

Table LV 3: Minimum Old-age Pension in Latvia	
Years of service (Insurance period)	Minimum old-age pension (in €)
Insurance length up to 20 years	70.43
Insurance length from 21 to 30 years	83.24
Insurance length starting from 31 to 40 years	96.05
Insurance length starting from 41 years	108.85

Source: Own elaboration based on Ministry of Welfare data, 2017 (http://www.lm.gov.lv/text/2112)

Pillar II –State Funded Pensions

Pillar II of the pension scheme was launched on 1 July 2001. As of that date, a portion of every individual's social contributions are invested into the financial market and accumulated on their pillar II personal account. Everyone who is socially insured is entitled to be a participant in the pillar II scheme, as long as the person was not older than 50 years of age on 1 July 2001. Participation in the 2nd tier is compulsory for those who had not reached the age of 30 on 1 July 2001 (born after 1 July 1971).

Gradually all employees will participate in pillar II. Individuals who were between the ages of 30 and 49 (born between 2 July 1951 and 1 July 1971) at the time where the scheme was launched, could and still can join the system voluntarily. Administration of pillar II contributions are made by the State Social Insurance Agency, which collects and redirects 20% old-age pension insurance contributions between the NDC and FDC pillar pension

scheme individual accounts. According to the Law on State Funded Pension, the State Social Insurance Agency also performs additional tasks connected to the pillar II administration.

According to this law, the Ministry of Welfare performs the supervision of the funded pension scheme and has the right to request and receive an annual account from the State Social Insurance Agency regarding the operation of the funded pension scheme.

Total redistribution of old-age pension contributions between pillar I and pillar II of the pension scheme are shown in the table below.

Table LV 4. Redistribution of the old-age pension contributions between pillar I and pillar II

Years	Pillar I (NDC)	Pillar II (FDC)
2001-2006	18%	2%
2007	16%	4%
2008	12%	8%
2009-2012	18%	2%
2013-2014	16%	4%
2015	15%	5%
2016 and ongoing	14%	6%

Source: http://www.vsaa.lv/en/services/employees/funded-pension-scheme, 2017

Contributions into pillar II were raised continually with adopted reforms, however during the financial crisis, the contributions into pillar II were reduced to 2% with gradual re-growth since 2012. It should be mentioned that the largest part of contributions (8% of salary) had flown into the pension fund in 2008, right at the top and before the crash of financial markets. This has significantly influenced the performance of funds, which is analyzed in the section regarding pension returns. Investing is performed by a third party: licensed fund managers.

Upon retiring, pillar II participants can make the choice to either add the accumulated pension capital to pillar I and receive both pensions together, or to entrust the capital accumulated in pillar II to the insurance company of their choice and buy a single annuity.

Several changes have been made in the management of accumulated savings on personal accounts of pillar II participants. Until 1 January 2003 there was only one public fund manager for the funds of pillar II, the State Treasury, which invested the funds exclusively into the Latvian state bonds and into the deposits of the largest and safest Latvian banks. As of 1 January 2003 the private fund managers were involved, but today participants of pillar II are in the position to choose their fund manager themselves. The private fund managers offer to invest the pension capital also into corporate bonds, shares and foreign securities. Participants of the system are entitled to change their fund manager once a year and investment plans within the frame of one fund manager can be changed twice a year. Performance of private fund managers is supervised by the Finance and Capital Market Commission.

Pillar III – Voluntary private pensions

Voluntary private pension scheme, or pension pillar III, was launched in July 1998, and it gives the opportunity to create additional voluntary savings in addition to the state-guaranteed 1st and the 2nd pension pillar. Contributions that individual and/or the employer regularly pay into the pension fund are invested in different securities, depending on the chosen investment strategy.

The Law on Private Pension Funds foresees that Latvian commercial banks, insurance companies and legal persons have the right to establish a private fund. The money is invested by private pension funds with the aim not only to maintain but also increase the value of savings over a long time period. There are generally two types of voluntary private pension funds in Latvia:

1. open pension funds (16 operational in Latvia in 2016);
2. closed pension funds (only one operating in Latvia in 2016).

Pension scheme participants can subscribe to a pension scheme by entering directly into a contract with an open pension fund or via their employer. Pension scheme participants could participate in a pension scheme through the intermediation of their employer if the employer has entered into a collective contract with an open or closed pension fund. Collective contract with a closed pension fund may be entered into only if relevant employer is also one of the founders (stockholders) of the same closed pension fund. Legal relationships between employer and employees arising in connection with the implementation of a pension scheme, and the participation of employees therein are regulated by the employment contract or collective work agreement. Acknowledging the fact that employers might enter into collective agreement with employees and establish the pension scheme, voluntary private pension funds might be recognized as a collective pension schemes.

Where an employer has entered into a collective participating contract with an open or closed pension fund and more than 100 employees have joined the pension fund, the employer and employees who participate in the pension scheme shall jointly establish a pension scheme committee with equal representation of the employer and employees.

According to the Law on Private Pension Funds, accumulated pension capital in private pension funds can be accessed by individuals when reaching the age of 55. In order to receive the pillar III accrued pension, an individual must submit an application to the respective pension fund. Supervisory authority for all voluntary private pension funds in Latvia is the Financial and Capital Market Commission.

Pension Vehicles

Pillar II – State Funded Pensions

Pension funds are the only pension vehicles allowed by the Law of State Funded Pensions for state-funded pension scheme. The law states that a funded pension scheme is a state-organized set of measures for making contributions, administration of funds contributed and payments of pensions which - without increasing the total amount of contributions for old age pensions - provides an opportunity to acquire additional pension capital by investing part of the pensions' contributions in financial instruments, and other assets in accordance with the procedures specified in the Law.

Currently (as of 31 December 2016), 20 state-funded pension schemes have been operational on the pillar II market. There is no specific legal recognition of types of pension funds based on their investment strategy, nor any legal requirement to provide a specific investment strategy for pension funds. It is up to a pension fund manager to provide an in-demand type of pension funds in order to succeed on the market. However, every fund manager is required to develop a systematic set of provisions according to which the management of funds is performed and which are presented in a prospectus of the relevant pension fund and in a Key Information Document (KID) for participants of the scheme. The prospectus of a pension fund and the key information document for participants are an integral part of the contract entered into between the Agency and the manager of pension funds. Pension fund prospectus must clearly define the risk-reward profile and indicate proposed investment strategy of the respective expected portfolio structure.

Although there is no legal recognition of types of pension funds, they can be divided into three types based on their risk/return profiles:

1. Conservative funds with no equity exposure and a 100% share of bonds and money market instruments;

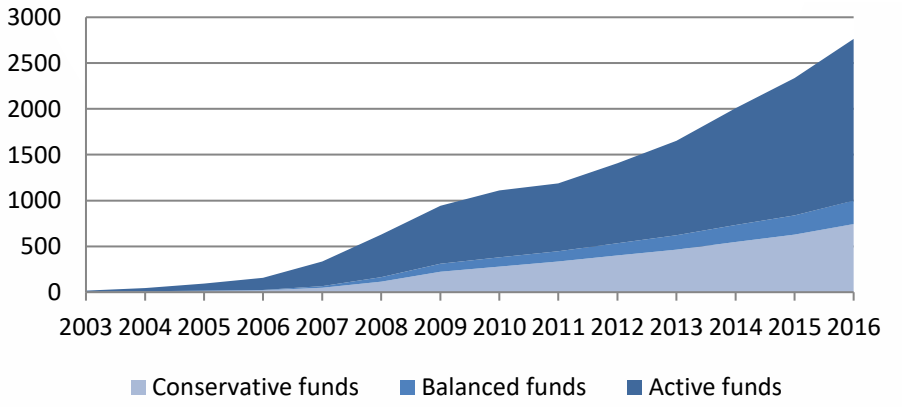
2. Balanced funds with an equity share of up to 15%, and a bond and money market instrument share of at least 50%;
3. Active funds with an equity share (resp. investments in capital securities, alternative investment funds or such investment funds that may make investments in capital securities or other financial instruments of equivalent risk) of up to 50% and no limits on investments in bonds and money market instruments.

The legislation sets relatively strict quantitative investment limits for pension funds, trying to supplement the prudent principle.

Overall asset allocation in Latvia is fairly conservative despite the possibility of choosing a plan according to risk preference. The chart below presents the amount of Assets under Management for types of pension funds according to their investment strategy.

Contrary to many other Central and Eastern Europe (CEE) countries running mandatory pension systems, there is no requirement for pension funds to guarantee a certain minimum return. On the contrary, doing so is explicitly forbidden.

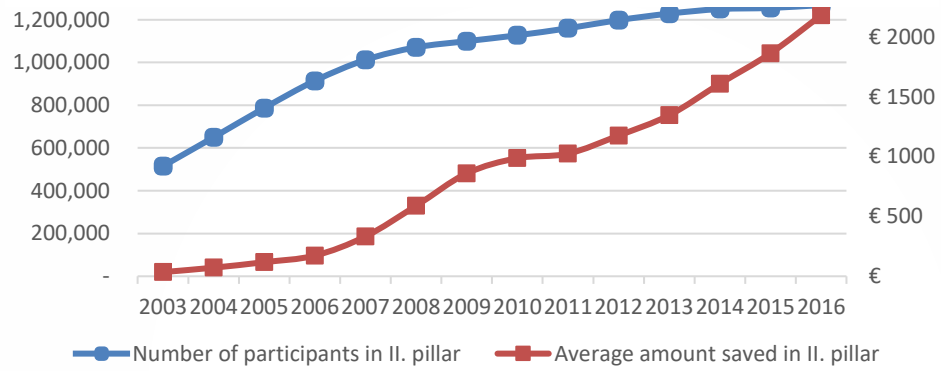
Graph LV I. Assets under Management in State Funded Pension Scheme pension vehicles (in mln. €)



Source: Own calculations (http://www.manapensija.lv/en/2nd-pension-pillar/statistics/data), 2017

As the State Funded Pension scheme is mandatory for all economically active individuals in Latvia, the number of savers, as well as the average amount of accumulated assets on individual accounts, is rising. The chart below indicates that the pillar II market is starting to be saturated in terms of the number of participants.

Graph LV II. Number of participants and average size of individual accounts in Latvian II pillar



Source: Own calculations (http://www.manapensija.lv/en/2nd-pension-pillar/statistics/data), 2017

The number of pillar II participants has reached maturity in 2016. Further growth of pillar II savings will therefore be driven by the amount of contributions and pension funds´ performance.

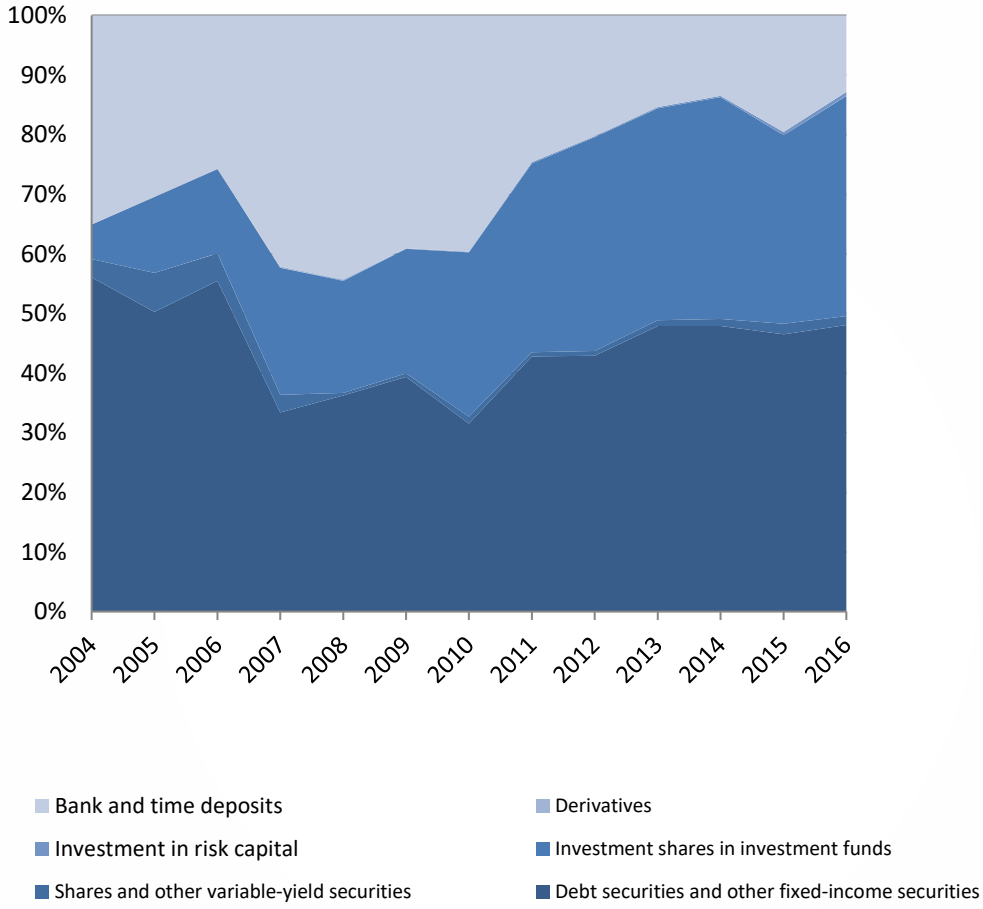
There are 20 pension funds operating on the market in 2016. There was no change in the number of pension funds offered in pillar II. The list of pillar II pension funds is presented in the table below.

Table LV 5. List of State Funded Pension Funds		
Pension Fund Name	**Investment style of the pension plan**	**Inception Day**
Citadele Aktīvais pensiju plāns	Active	*07.01.2003*
Citadele Universālais pensiju plāns	Conservative	*07.01.2003*
DNB Aktīvais ieguldījumu plāns	Active	*21.02.2005*
DNB Konservatīvais ieguldījumu plāns	Conservative	*21.02.2005*
DNB Sabalansētais ieguldījumu plāns	Balanced	*21.02.2005*
Finasta Konservatīvais ieguldījumu plāns	Conservative	*07.01.2003*
Finasta pensiju plāns "EKSTRA PLUS"	Active	*08.08.2006*
Finasta pensiju plāns "KOMFORTS"	Balanced	*08.08.2006*
Nordea aktīvais ieguldījumu plāns	Active	*02.02.2009*
Nordea konservatīvais ieguldījumu plāns	Conservative	*02.02.2009*
NORVIK IPS plāns "Daugava"	Conservative	*07.01.2003*
NORVIK IPS plāns "Gauja"	Active	*14.10.2003*
NORVIK IPS plāns "Venta"	Balanced	*14.10.2003*
SEB aktīvais plāns	Active	*07.01.2003*
SEB Eiropas plāns	Active	*07.01.2003*
SEB konservatīvais plāns	Conservative	*26.05.2003*
SEB Latvijas plāns	Conservative	*07.01.2003*
SEB sabalansētais plāns	Balanced	*07.01.2003*
Swedbank pensiju ieguldījumu plāns "Dinamika"	Active	*07.01.2003*
Swedbank pensiju ieguldījumu plāns "Stabilitāte"	Conservative	*07.01.2003*

Source: http://www.manapensija.lv/en/2nd-pension-pillar/statistics/, 2017

Portfolio structure of pillar II pension funds (graph below) shows that dominant investments remain the debt and other fixed income securities as well as investment funds (UCITS funds).

Graph LV III. Pillar II pension funds´ portfolio structure



Source: Own elaboration based on Financial and Capital Market Commission data, 2017 (available at: http://www.fktk.lv/en/statistics/pension-funds/quarterly-reports.html).

Pillar III – Voluntary private pensions

There are two types of private pension funds in the Latvian voluntary private pension pillar:

1. closed, for fund founders' (corporate) staff;
2. open, of which any individual may become a participant, either directly or through an employer.

This distinction between private pension funds is rather significant as closed private pension funds (only one operating in Latvia in 2016) could be recognized as typical occupational pension fund. However, open private pension funds are more personal ones.

The Law on Private Pension Funds provides a wide range of possibilities to organize and manage private pension funds. The law prescribes the accumulation of pension benefits both in the specified contribution scheme and in the specified pay-out scheme, the types of private pension funds, the basis for activities thereof, the types of pension schemes, the rights and duties of pension scheme participants, the management of funds, the competence of holders of funds, as well as state supervision of such activities.

Pension vehicles (pension funds) can be created only by limited types of entities in Latvia, namely:

1. employers entering into a collective participating contract with a pension fund may be founders of a closed pension fund.
2. for an open pension fund, two types of institutions can establish a fund:
   a) bank (licensed credit institution);
   b) life insurance company.

These founders usually hire a management company, who creates a different pension plan managed under one pension fund and manages the investment activities. Pension scheme assets can be managed only by the following commercial companies:

- a credit institution, which is entitled to provide investment services and non-core investment services in Latvia;
- an insurance company which is entitled to engage in life insurance in Latvia;
- an investment brokerage company which is entitled to provide investment services in Latvia;
- an investment management company which is entitled to provide management services in Latvia.

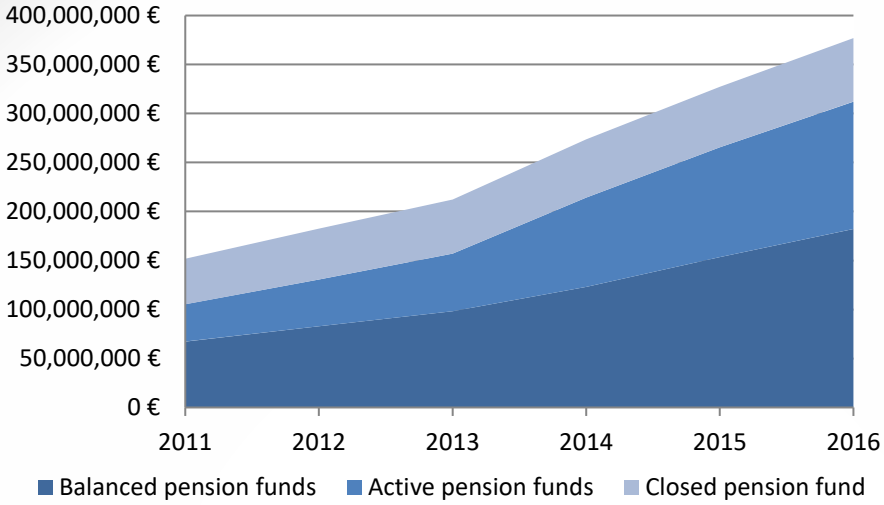
The level of transparency in providing publicly available data for private pension funds till the year 2011 is rather low; therefore, the analysis of the market and main pension vehicles has been performed with publicly available data starting from 31 December 2011. Currently (as of 31 December 2016), 16 open private pension funds and one closed private pension fund exist on the market. A new company, INVL, entered the market and took over existing funds from the exiting company Finasta. At the same time, INVL started offering two new target date funds (conservative and balanced one). In order to clarify the structure of pillar III pension funds, table LV6 shows the list of pension funds at as of the end of 2016.

Table LV 6. List of Pillar III Supplementary pension funds	
Valid on 31.12.2015	***Valid on 31. 12. 2016***
INVL Konservatīvais 58+	INVL Konservatīvais 58+
CBL Sabalansētais	CBL Sabalansētais
Nordea sabalansētais pensiju plāns	Nordea sabalansētais pensiju plāns
"SEB - Sabalansētais" pensiju plāns	"SEB - Sabalansētais" pensiju plāns
Swedbank pensiju plāns Stabilitāte+25	Swedbank pensiju plāns Stabilitāte+25
Citadele Aktīvais	CBL Aktīvais
Citadele Aktīvais EUR	*ceased and merged with Citadele Aktivais*
Finasta plāns "Dzintars - Konservatīvais"	INVL "Dzintars - Konservatīvais"
Finasta plāns "Jūra - Aktīvais"	INVL "Jūra - Aktīvais"
Finasta plāns "Saule - Sabalansētais"	INVL "Saule - Sabalansētais"
INVL Sabalansētais 47+	INVL Sabalansētais 47+
Citadele plāns "Rumba"	*ceased*
Citadele plāns "Tvists"	*ceased*
Nordea progresīvais pensiju plāns	Nordea progresīvais pensiju plāns
"SEB Aktīvais" pensiju plāns	"SEB Aktīvais" pensiju plāns
Swedbank pensiju plāns Dinamika+60	Swedbank pensiju plāns Dinamika+60
Swedbank pensiju plāns Dinamika+100	Swedbank pensiju plāns Dinamika+100
Citadele Aktīvais USD	Citadele Aktīvais USD
Swedbank pensiju plāns Dinamika+(USD)	Swedbank pensiju plāns Dinamika+(USD)
"Pirmais Pensiju Plāns"	"Pirmais Pensiju Plāns"

Source: Own elaboration based on Financial and Capital Market Commission data, 2017

The structure of the pension vehicles according to the type of the fund and investment strategy offered is presented in the graph below.

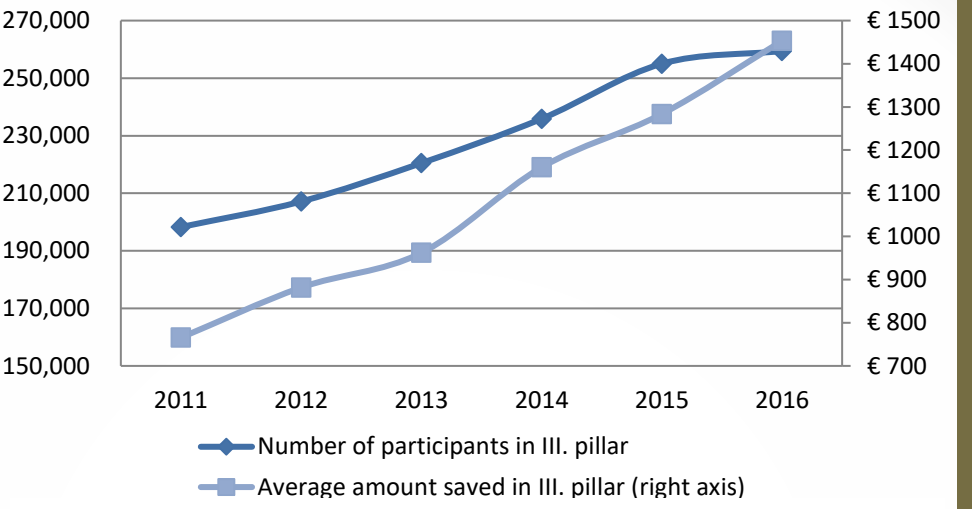
Graph LV IV .Type of pillar III pension funds based on AuM (in mil. €)



Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017

The number of participants, as well as the average amount saved in pillar III saving accounts, is risingsteadily. As of 31 December 2016, there were almost 260,000 pillar III saving accounts with an average amount of € 1,450 saved in them. The developments of these parameters are presented in the graph below.

Graph LV V .Number of participants and average size of individual accounts in Latvian pillar III



Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017

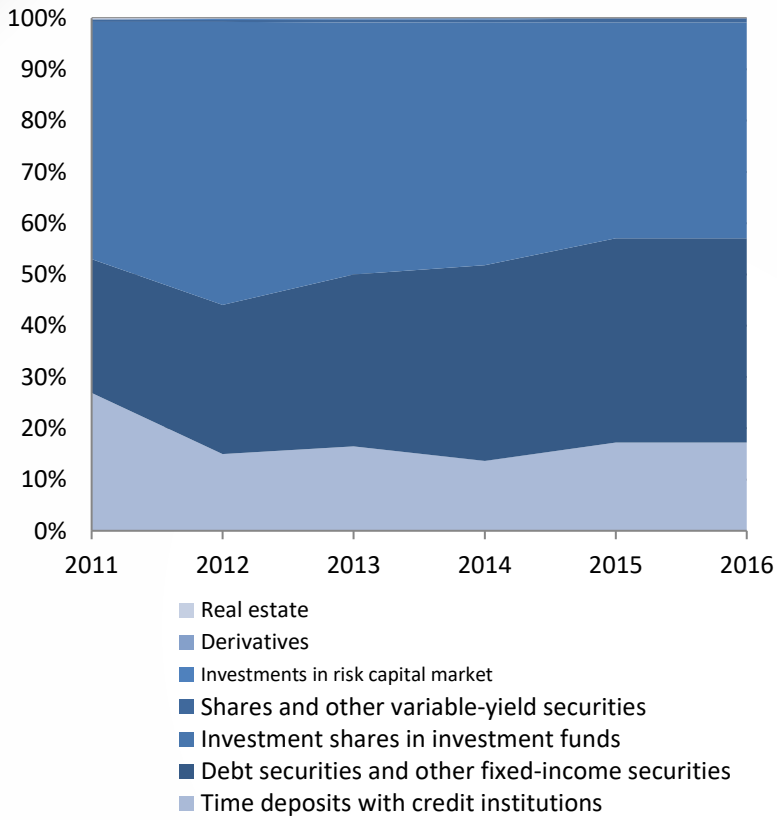
It should be noted that balanced pension funds have accounted for about 50% of market share based on Assets under Management (AuM) in 2016, where only four funds are offered. Active funds – for which the investment strategy allows more equity investments – are gaining market share (from 25% in 2011 to 34.5% in 2016).

The only closed pension fund, which has only 5% of market share based on the number of participants, accounts on the other hand for almost 18% of market share based on assets under management, which means that the closed pension fund has the highest level of accumulated assets per participant. However, considering the decreasing trend in market share, the number of participants is not increasing and the closed pension fund serves a relatively matured market.

Portfolio structure of pillar III pension funds is presented in figure below. Generally, pillar III pension funds invest predominantly into debt securities, bank deposits and UCITS funds. Direct investment into equities, real estate

or other long-term riskier investment constitute only for less than 1% of total portfolio.

Graph LV VI .Pillar III pension funds´ portfolio structure



Source: Own elaboration based on Financial and Capital Market Commission data, 2017 (available at: http://www.fktk.lv/en/statistics/pension-funds/quarterly-reports.html)

Charges

Pillar II – State Funded Pensions

Latvia has adopted a cap on fees within pillar II, which forces that the maximum amount of payment for the management of investment plan, including the fixed and variable parts of payment, calculating for the last 12-month period, does not exceed:

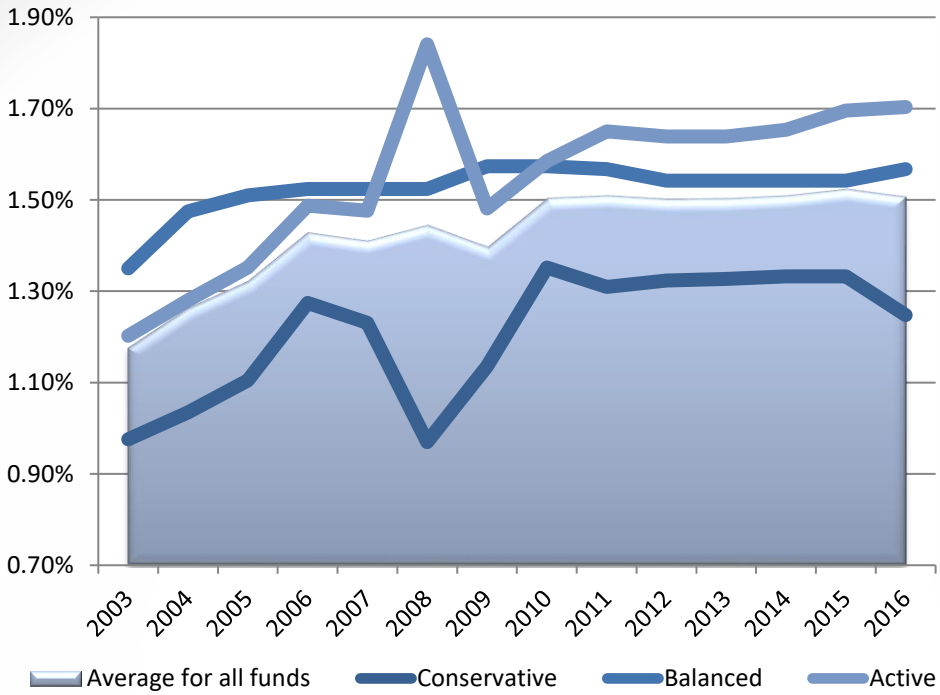
1) 1.50% of the average value of investment plan assets to the investment plans where the investment plan prospectuses do not provide for any investments in the shares of commercial companies, other capital securities and other equivalent securities;
2) 2.00% of the average value of investment plan assets of all other investment plans.

Fees that can be charged to pension funds by fund managers are by law recognized as having a fixed and variable part. The law stipulates that payment for the management of an investment plan shall include:

a) fixed component of payment, which is 1% of the average value of investment plan assets per year and includes payments to the manager of the funds, custodian, as well as payments to third persons, which are performed from the funds of the investment plans, except expenses which have arisen upon performing transactions by selling the assets of the investment plan with repurchase;
b) variable component of payment, which is remuneration to the manager of funds of the funded pension scheme for performance of investment plan, and its amount depends on the return of the pension plan.

The average level of fees charged to the pension funds are increasing both on a relative as well as absolute level, which might be detrimental to the long-term savings of Latvian savers. Generally, the fees applied to the pension funds in pillars II and III are among the highest. Several pillar II pension funds now apply performance based fees, where this additional fee is charged if the fund manager reaches a positive return.

Graph LV VII. Pillar II Pension Funds' Charges



Source: Own research based on the most recent terms of respective pension funds, 2017

Pillar III – Voluntary private pensions

Voluntary private pension funds have typically lower level of transparency when it comes to fee policy. In most cases, only current fees and charges are disclosed. Historical data is almost impossible to track via publicly accessible sources. However, the portal Manapensija (http://www.manapensija.lv/en/) has significantly improved the information on actual charges and fees applied by pillar III pension funds and their administrators in 2016.

Charges of voluntary private pension funds for the years 2015 and 2016 are presented in the table below. Administration cost, Fund manager´s commission and Custodian bank´s commission are based on the assets

under management. Funds managed by Nordea and Swedbank uses mixed Administration costs, which are a combination of entry fee (fee on contributions paid) and ongoing charge (AuM based). CBL funds also use a performance fee, if the fund returns outperform the benchmark (12-month RIGIBID). Aggressive fee policy is applied for INVL funds (Sabalansētais 47+, Activais 16+ and Konservatīvais 58+), where the participant pays only fees on first year contributions. Otherwise, no additional charges are applied.

Table LV 7. Voluntary Private Pension Funds´ Fees and Charges

Voluntary Private Pension Funds	Type of the Charges	Year 2015	Year 2016
CBL Aktīvais	Administration Cost	1.50%	1.50%
	Fund Manager´s Commission	0.90%	0.90%
	Custodian bank´s commission	0.20%	0.20%
	Performance fee	10% (RIGIBID)	10% (RIGIBID)
CBL Aktīvais USD	Administration Cost	1.50%	1.50%
	Fund Manager´s Commission	0.90%	0.90%
	Custodian bank´s commission	0.20%	0.20%
	Performance fee	10% (RIGIBID)	10% (RIGIBID)
CBL Sabalansētais	Administration Cost	1.50%	1.50%
	Fund Manager´s commission	0.75%	0.75%
	Custodian bank´s commission	0.20%	0.20%
	Performance fee	10% (RIGIBID)	10% (RIGIBID)
INVL plāns "Dzintars - Konservatīvais"	Administration Cost	2.00%	2.00%
	Fund Manager´s commission	0.70%	0.70%
	Custodian bank´s commission	0.50%	0.50%
INVL plāns "Jūra -	Administration Cost	1.00%	1.00%

Aktīvais"	Fund Manager´s commission	1.00%	1.00%
	Custodian bank´s commission	0.50%	0.50%
INVL plāns "Saule - Sabalansētais"	Administration Cost	1.00%	1.00%
	Fund Manager´s commission	1.00%	1.00%
	Custodian bank´s commission	0.50%	0.50%
INVL Sabalansētais 47+	Administration Cost		0.00% + 30% of contributions during the 1st year
	Fund Manager´s commission		0.00%
	Custodian bank´s commission		0.00%
INVL Activais 16+	Administration Cost		0.00% + 30% of contributions during the 1st year
	Fund Manager´s commission		0.00%
	Custodian bank´s commission		0.00%
INVL Konservatīvais 58+	Administration Cost		0.00% + 30% of contributions during the 1st year
	Fund Manager´s commission		0.00%
	Custodian bank´s commission		0.00%

Nordea progresīvais pensiju plāns	Administration Cost	2% from each contribution + 1% per year from average assets	2% from each contribution + 1% per year from average assets
	Fund Manager´s commission	1.60%	1.60%
	Custodian bank´s commission	0.15%	0.15%
Nordea sabalansētais pensiju plāns	Administration Cost	1% from each payment + 1% per year from average assets	1% from each payment + 1% per year from average assets
	Fund Manager´s commission	1.10%	1.10%
	Custodian bank´s commission	0.15%	0.15%
"Pirmais Pensiju Plāns"	Administration Cost	1.50%	1.50%
	Fund Manager´s commission	1.30%	1.30%
	Custodian bank´s commission	0.20%	0.20%
"SEB Aktīvais" pensiju plāns	Administration Cost	1.50%	1.50%
	Fund Manager´s commission	0.90%	0.90%
	Custodian bank´s commission	0.20%	0.20%
"SEB - Sabalansētais" pensiju plāns	Administration Cost	1.50%	1.50%
	Fund Manager´s commission	0.90%	0.90%
	Custodian bank´s commission	0.20%	0.20%

Swedbank pensiju plāns Dinamika+(USD)	Administration Cost	2% from payments + 0.6% from assets per year	0.6% from assets per year
	Fund Manager´s commission	1.25%	0.90%
	Custodian bank´s commission	0.20%	0.18%
Swedbank pensiju plāns Dinamika+100	Administration Cost	2% from payments + 1% from assets per year	0.6% from assets per year
	Fund Manager´s commission	1.60%	0,9%
	Custodian bank´s commission	0.20%	0.10%
Swedbank pensiju plāns Dinamika+60	Administration Cost	2% from payments + 0.6% from assets per year	0.6% from assets per year
	Fund Manager´s commission	1.25%	0.90%
	Custodian bank´s commission	0.20%	0.10%
Swedbank pensiju plāns Stabilitāte+25	Administration Cost	2% from payments + 0.6% from assets per year	+ 0.6% from assets per year
	Fund Manager´s commission	0.90%	0.50%
	Custodian bank´s commission	0.20%	0.10%

Source: Own research based on http://www.manapensija.lv/en/3rd-pension-pillar/funds/ data and supplementary pension funds´ Prospectuses and Terms, 2017

Comparing the charges applied to the voluntary private pension funds and to state-funded pension funds, the level of charges in pillar III pension funds are significantly higher. There are neither limitations nor caps on fees in the law. The legislative provisions only indicate that at least general information on maximum fees and charges applied, procedures for covering the expenses of the scheme, information regarding maximum payments to the management of the pension scheme and to the manager of funds, and the amount of remuneration to be paid out to the holder of funds, as well as the procedures by which pension scheme participants shall be informed regarding such pay-outs of the scheme, should be disclosed.

Taxation

Pillar II – State Funded Pensions

Latvia is applying an EET taxation regime for pillar II with some specifications (deductions) to the payout regime taxation, where generally the "T" regime is applied.

Taxation of contributions

Contributions paid to the state funded pension scheme are being made via social insurance contributions redirection. As such, these contributions are personal income tax deductible item and therefore the contributions are not subject to additional personal taxation.

Taxation of the Fund

Corporate Income tax rate in Latvia is 15%, however income or profits of the fund (investment fund as a legal entity) are not subject to corporate income tax at the fund level. Latvia applies a general principle for all investment and savings based schemes to levy the income taxation on the final beneficiary and not on the investment vehicles.

Taxation of pension benefits

Latvia has one of the lowest levels of income redistribution among EU countries. The personal income tax rate is 23% and the pension benefits

paid from the NDC PAYG scheme (pillar I) and state-funded pension scheme (pillar II) are considered taxable income. As such, pension benefits are subject to personal income tax. Latvia applies a non-taxable minimum, which is recalculated and announced every year by Cabinet regulation.

Pillar III – Voluntary private pensions

Latvian tax legislation stipulates the use of the EET regime (similar to pillar II) also for voluntary private pension schemes, where the contribution by individuals is treated in a slightly different way. Payments made to private pension funds established in accordance with the Law on Private Pension Funds or to pension funds registered in another Member State of the European Union or the European Economic Area State, shall be deducted from the sum amount of annual taxable income, provided that such payments do not exceed 10% of the person's annual taxable income. However, there is a limit on total income tax base deductible payments. The total of donations and gifts, payments into private pension funds, insurance premium payments and purchase costs of investment certificates of investment funds may not exceed 20% of the amount of the payer's taxable income.

Pension Returns

Pillar II – State Funded Pensions

Pension funds´ performance is closely tied to the portfolio structure defined by an investment strategy (as well as investment restrictions and regulations) applied by a fund manager. Investment regulations differ, depending on whether pension plans are managed by the State Treasury or by private companies. The State Treasury is only allowed to invest in Latvian government securities, bank deposits, mortgage bonds and deposit certificates. Moreover, it can only invest in financial instruments denominated in the national currency. In contrast, private managers are allowed to invest in a much broader range of financial instruments. The main investment limits include the following:

- 35% for securities guaranteed by a state or international financial institution;
- 5% for securities issued or guaranteed by a local government;
- 10% for securities of a single issuer, except government securities; for deposits at one credit institution (investments in debt and capital securities of the same credit institution and derivative financial instruments may not exceed 15%); and for securities issued by one commercial company (or group of commercial companies;
- 20% for investments in non-listed securities;
- 5% for investments in a single fund (10% of the net assets of the investment fund).

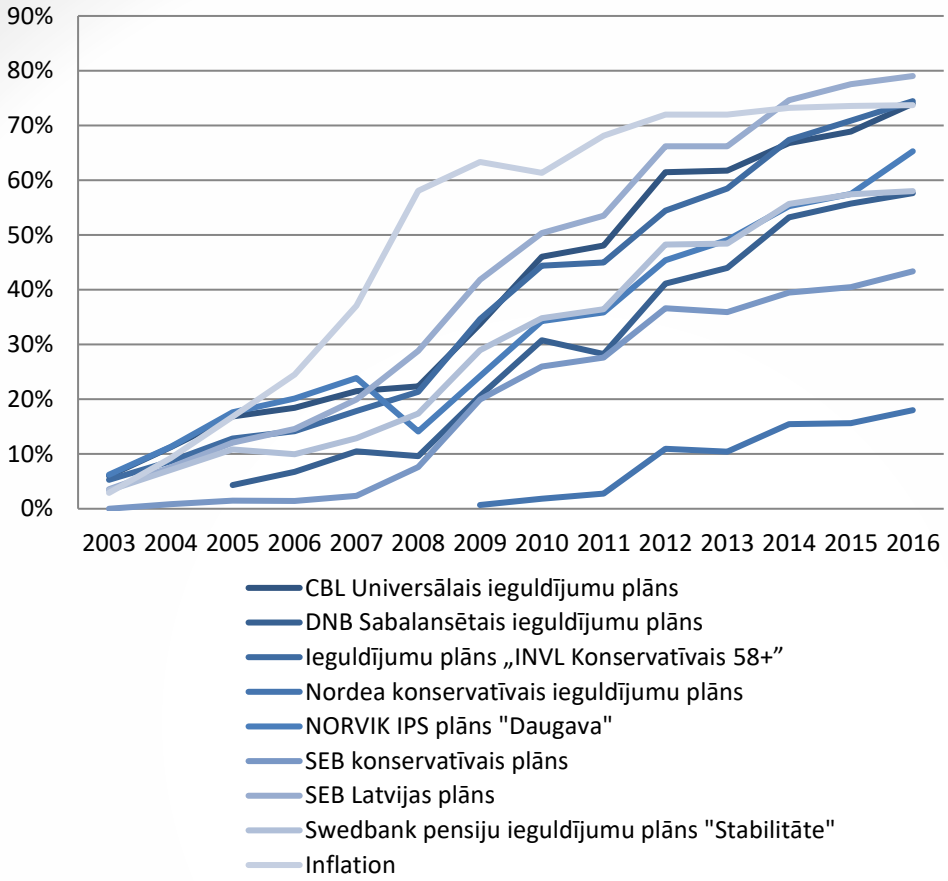
There is no maximum limit for international investments, as long as pension funds invest in securities listed on stock exchanges in the Baltics, other EU member states or the European Free Trade Area. However, the law stipulates a 70% currency matching rule. There is also a 10% limit for each non-matching currency. Investments in real estate, loans, and self-investment are not permitted.

All data presented on the pension funds' returns are presented in net values, i.e. after all fees charged to the fund portfolio. The graphs also contain inflation on an annual as well as cumulative basis.

Pension reform introduced pillar II in July 2001, however pension funds started their effective operation from January 2003, therefore only data for the period from 2003 to 2016 are presented.

Conservative mandatory pension funds' performance on a cumulative basis compared to the inflation is graph LV VIII.

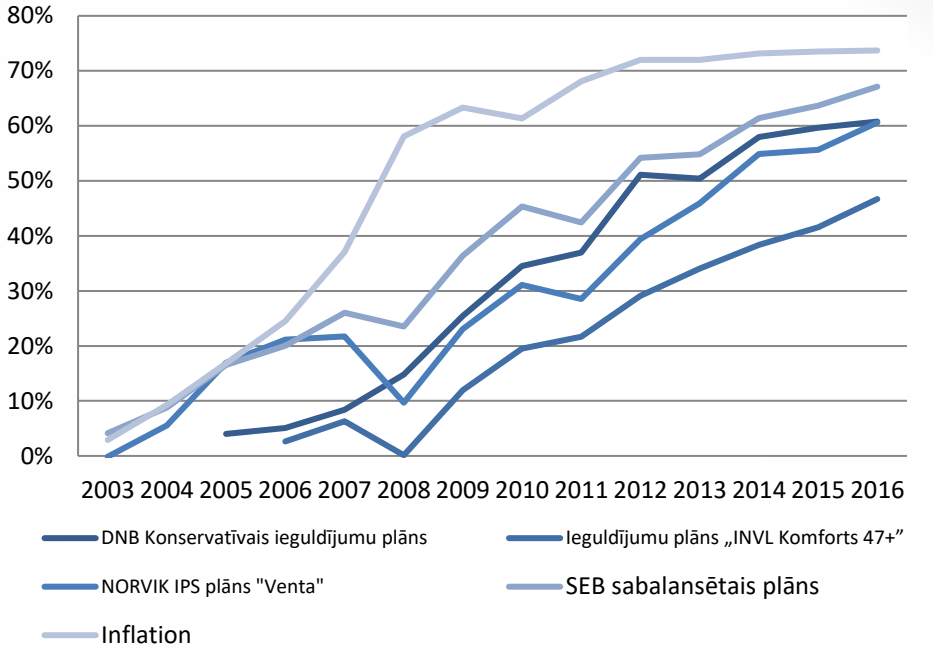
Graph LV VIII. Conservative Pension Funds´ Cumulative Performance



Source: Own research based on http://www.manapensija.lv/en/3rd-pension-pillar/funds/ data and supplementary pension funds´ Prospectuses and Terms, 2017

Balanced pension funds´ cumulative performance comparing to the Latvian inflation is presented in graphs below.

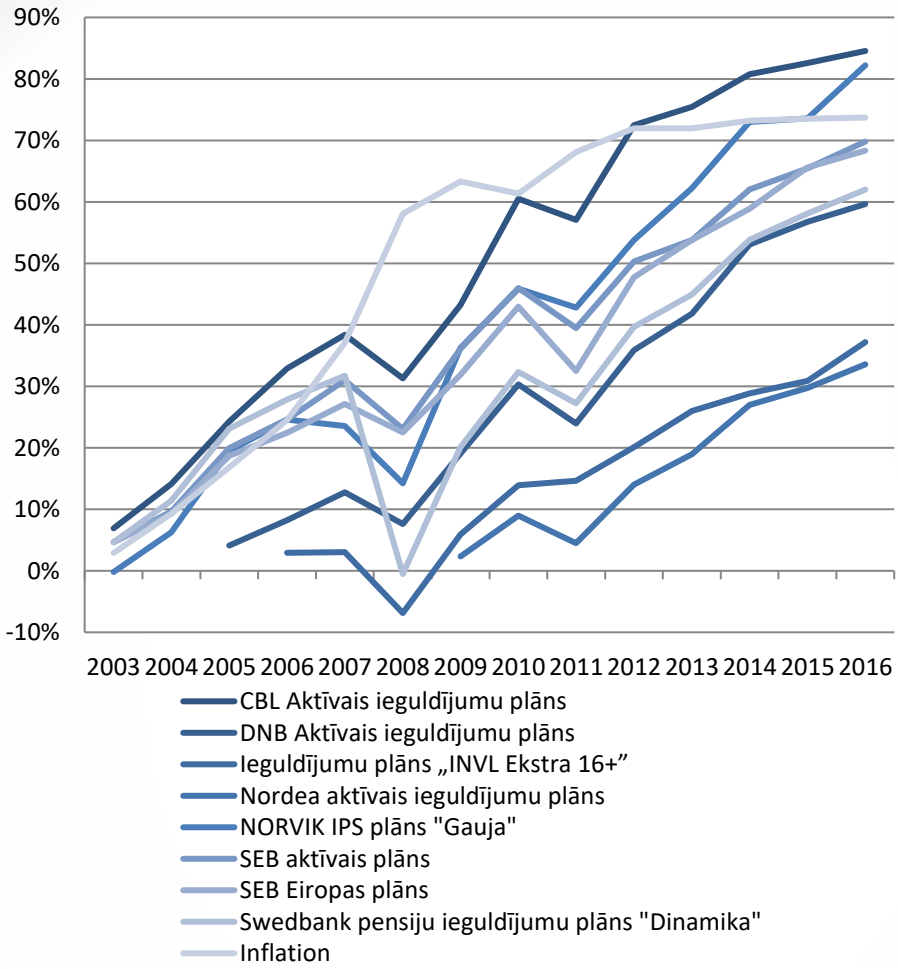
Graph LV IX. Balanced Pension Funds´ Cumulative Performance



Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017

Active pension funds' performance on a cumulative basis compared to the inflation is presented in the graphs below.

Graph LV X. Active Pension Funds' Cumulative Performance



Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017

Nominal as well as real returns of state funded pension funds in Latvia weighted by AuM are presented in a summary table below.

Table LV 8. Nominal and Real Returns of State Funded Pension Funds in Latvia		
	Nominal return after charges, before inflation and taxes	**Real return after charges and inflation and before taxes**
2003	4.78%	1.88%
2004	5.79%	-0.41%
2005	8.94%	2.04%
2006	3.91%	-2.69%
2007	3.51%	-6.59%
2008	-9.93%	-25.23%
2009	13.36%	10.06%
2010	8.32%	9.52%
2011	-2.05%	-6.25%
2012	8.92%	6.62%
2013	2.29%	2.29%
2014	5.24%	4.54%
2015	1.93%	1.73%
2016	2.02%	1.92%
Average	**3.95%**	**-0.43%**

Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017

Pillar III – Voluntary private pensions

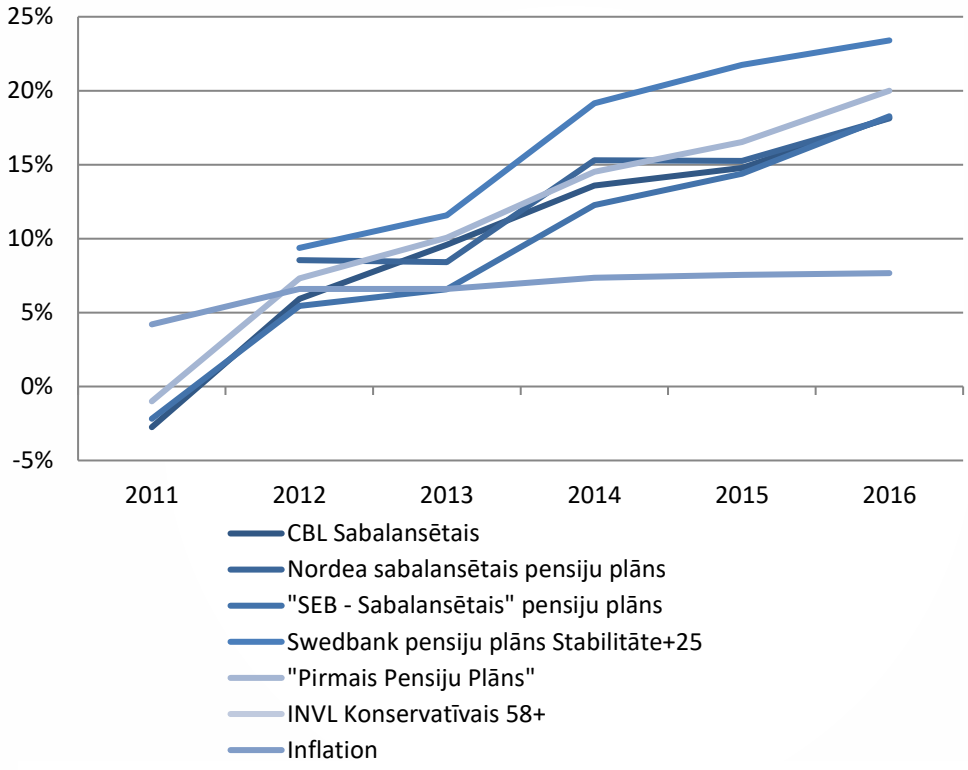
The analysis of voluntary pension funds' performance uses annual as well as cumulative approaches, peer comparison and inflation.

Investment rules for private pension funds are similar to those for state-funded schemes, but are more flexible. For example, investment in real estate is permitted (with a limit of 15%) and the currency matching rule is only 30%, as well as limits for some asset classes being higher. Considering the structure of voluntary pension funds' portfolios in Latvia, larger

proportion is invested in structured financial products (mainly equity based UCITs funds) and direct investment in equities and bonds is decreasing.

Due to the lack of publicly available data before 2011, the performance of voluntary pension funds on an annual as well as cumulative basis starting from the year 2011 is presented in the graph below.

Graph LV XI. Balanced, conservative voluntary open and closed pension funds´ cumulative performance



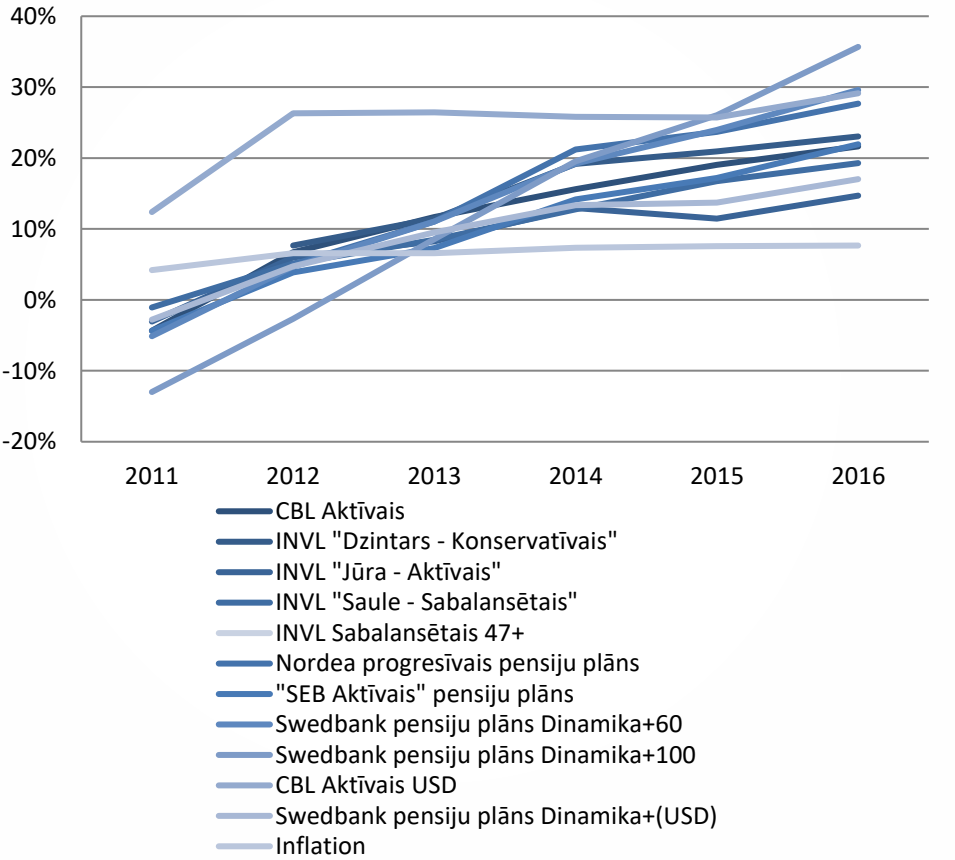
Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017

Contrary to balanced pillar II funds, balanced pillar III funds all provide positive real returns (outperform inflation). Balanced pillar III funds have more aggressive portfolio structure. However, short historical data do not

allow drawing a comprehensive conclusion on this fact. There is backward pressure of charges, which might reverse the trend in future.

The performance of Latvian active voluntary private pension funds differs significantly and the dispersion of annual as well as cumulative returns is higher. Performance of analyzed voluntary private pension funds on a cumulative basis is presented on the chart below.

Graph LV XII.Active voluntary pension funds´ cumulative performance



Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017

Nominal as well as real returns of voluntary pension funds in Latvia weighted by AuM are presented in a summary table below.

Table LV 9. Nominal and Real Returns of Voluntary pension funds in Latvia					
2011	*2012*	*2013*	*2014*	*2015*	*2016*
Nominal return after charges, before inflation and taxes					
-2.71%	8.75%	3.08%	5.51%	2.66%	3.35%
3.35%					
Real return after charges and inflation and before taxes					
-6.91%	6.45%	3.08%	4.81%	2.46%	3.25%
2.06%					

Source: Own calculation based on Manapensija data (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/ , 2017

Conclusion

Latvia has managed to build a sustainable pension system over the last decade with impressive growth in pillar II funds. Acceptance of voluntary pension savings in pillar III is still weak, but this trend has changed after the crisis. Pillar III pension funds enjoyed high inflow of new contributions despite rather weak performance and high fees.

Latvian pillar II and pillar III funds managers enjoy relatively high fees charged to pension funds savers. Delivered real returns on the other hand are negative. Most of the pillar II pension funds were not able to beat the inflation. One of the reasons is also relatively conservative risk/return profile of most funds. Pillar III vehicles in Latvia suffer not only from significantly high fees charged by fund managers, but also from low transparency.

Pension fund managers of both pillars started to prefer packaged investment products (investment funds) and limit their engagement in direct investments. Thus the question of potential future returns when

using financial intermediaries multiplied by high fee policy in both schemes should be raised.

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Data sources:

- Manapensija portal (http://www.manapensija.lv/en/3rd-pension-pillar/history-and-statistics/), 2017
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Pension Savings: The Real Return

2017 Edition

Country Case: Poland

Introduction

The old-age pension system in Poland was introduced in 1999 as a multi-tier solution consisting of three elements:

- Pillar I - a mandatory, Pay As You Go (PAYG) system;
- Pillar II - a previously mandatory, now voluntary funded system; and
- Pillar III - voluntary, occupational and individual pension plans.

Table PL 1. Multi-pillar pension system in Poland

Pillar I	Pillar II	Pillar III
Mandatory	Mandatory/Voluntary[188]	Voluntary
PAYG	Funded	Funded
NDC	DC	DC
Basic benefit	Basic benefit	Complementary benefit
Publicly managed:	Privately managed:	Privately managed:
Social Insurance Institution (ZUS)	Open Pension Funds (OFEs) Managed by Pension Societies (PTEs)	Pension savings managed by different financial institutions, depending on the product form, organised by employer or individual

Source: own elaboration.

The first part of the system is contributory and is based on a Non-financial Defined Contribution (NDC) formula. The total pension contribution rate amounts to 19.52% of gross wage (pillar I + pillar II) and a premium is

[188] It was mandatory until the end of March 2014.

financed equally by employer and employee. 16.60 p.p. of the mentioned above old-age pension contribution is transferred to pillar I (written down on individual accounts of the insured and sub-accounts) and 2.92 p.p. may be allocated (voluntarily) to an open pension fund (pillar II). If a person had not joined pillar II and had not decided to stay in an open pension fund in 2014[189], all contributions are transferred to the PAYG system (pillar I).

The first pillar is managed by the Social Insurance Institution (ZUS), which writes down the quota of contributions paid for every member on individual insurance accounts. The balance of the account (pension rights) is switched into pension benefits when an insured person retires. The statutory retirement age is 60 for women and 65 for men.[190]

The pension amount from Pillar I depend solely on two components: 1) the insured person's total pension entitlements accumulated during his/her entire career (balance of NDC accounts), 2) the average life expectancy upon retirement.

Pillar II of the Polish pension system consists of open pension funds (otwarte fundusze emerytalne, OFE) managed by pension societies (powszechne towarzystwa emerytalne, PTE). Until the end of March 2014, 2.8 p.p. of mandatory pension contributions went to pillar II and were invested in financial markets within limits laid down by pension law. Members of the system were allowed to choose just one fund out of 14 OFEs operating in the market. Since April 2014, participation in open pension funds is voluntary[191]. The government decided to grab accumulated

[189] Two years after the change that made OFE's voluntary, namely in 2016, the insured could again decide about his/her participation in Pillar II. In future "the transfer window" will open every four years.

[190] It started to increase in 2013 and was planned to reach 67 for both men and women (in 2020 for men and in 2040 for women) but this reform was cancelled three years later. Hence since October 2017 the statutory retirement age in Poland is again 60 for women and 65 for men. It may result in a situation that significant proportion of women will get a minimum pension when retiring at the age of 60. More in: A. Chłoń-Domińczak, P. Strzelecki, The minimum pension as an instrument of poverty protection in the defined contribution pension system – an example of Poland, "Journal of Pension Economics and Finance", Vol. 12, Issue 3, July 2013.

[191] The law of 6 December 2013 introduced from 1st January 2014 and 1st April 2014.

pension assets (OFE had almost 300 billion PLN or €68,76[192] assets under management then) to lower official public debt. The results were felt immediately, as changes included the transfer of OFEs' bond portfolios to the Social Insurance Institution (ZUS) at the beginning of 2014[193]. Now the withdrawal of the OFEs is expected due to the diminishing value of OFE's assets.

An insured person who enters the labour market has the right to choose whether to join an OFE or whether to remain solely in the PAYG system (NDC). When the insured chooses to contribute to the OFE (pillar II), 2.92% of his/her gross salary will be transferred to the fund. In this case his/her money will be invested more aggressively, as the new pension law imposed a ban on the purchase of government bonds by OFE. If no decision is taken by the member, his/her total old-age pension contribution (19.52%) will automatically be transferred to Social Insurance Institution (ZUS). This default option resulted in a huge decrease in OFEs´ active participation.

Last but not least, recent regulations state that pension benefits from assets gathered in OFE are calculated in accordance with Defined Contribution (DC) rules and are paid by Social Insurance Institution together with benefits from nonfinancial pillar (NDC system)[194]. Prior to the retirement, all the member's assets are transferred to the pillar I.

Polish open pension funds are frequently treated as typical private pension plans (OECD 2012) or even employer-arranged pension funds (Oxera 2013) when presented in global private pension funds statistics. Such an assessment is incorrect in the sense that neither the employer nor the

[192] For the conversion of the various currencies to euros, the report uses the 2016 annual average exchange rate "Euro foreign exchange reference rates" provided by the European Central Bank (1 EUR = PLN 4.3632):
https://www.ecb.europa.eu/stats/exchange/eurofxref/html/index.en.html

[193] This operation resulted in a huge reduction of assets – at the end of 2013 the assets in OFEs amounted to PLN 299 billion (€71.5 billion) but after shifting PLN 153 billion (€36.6 billion) to ZUS dropped to ca. PLN 154 billion (€36.8 billion).

[194] Money gathered on individual accounts in OFE will be systematically transferred to the Social Insurance Institution (ZUS) during 10 years before retirement (before reaching the statutory retirement age). ZUS will pay all the benefits from the mandatory system (PAYG and funded components).

employee can decide on the creation of the pension plan. Moreover, the law establishes the contribution level and pension benefits are paid by the public institution (ZUS). Thus, Polish OFEs are just a mechanism of investing public pension system resources in financial markets (financial vehicles for the accumulation phase). Moreover, they are an important part of the public pension system.

Pillar III supplements the basic, mandatory pension system (pillar I and pillar II) and represents voluntary, additional pension savings. It consists of three different elements:

- employees (occupational) pension programmes (pracownicze programy emerytalne, PPE);
- individual retirement accounts (indywidualne konta emerytalne, IKE);
- individual retirement savings accounts (indywidualne konta zabezpieczenia emerytalnego, IKZE).

Pension programmes for employees (pracownicze programy emerytalne, PPE) are plans organised by employers for their employees. PPE settlement happens after an employer agrees with the representatives of the employees on the plan's operational conditions, signs the contract on asset management with a financial institution (or decides to manage assets himself) and registers a programme with the Financial Supervisory Commission (Komisja Nadzoru Finansowego, KNF). The basic contribution (up to 7% of an employee's salary) is financed by the employer but an employee has to pay personal income tax on this money. Participants to the programme can pay in additional contributions deducted from their net (after-tax) salaries. There is a yearly quota limit for additional contribution amounting to 4.5 times the average wage (PLN 19,183.50 - €4,396.66 - in 2017). PPE's returns are exempt from capital gains tax. Benefits are not taxable and can be paid as a lump sum or as a programmed withdrawal after the saver reaches 60 years.

Individual retirement accounts (indywidualne konta emerytalne, IKE) were introduced in 2004, offering people the possibility to save individually for retirement. They are offered by various financial institutions such as asset

management companies, life insurers, brokerage houses, banks and pension societies. An individual can only gather money on one retirement account at the time but is free to change the form and the institution during the accumulation phase. Contributions are paid from the net salary with a ceiling of 3 times the average wage (PLN 12,789 - €2,931.11 - in 2017). Returns are exempt from capital gains tax and the benefits are not subject to taxation. When a saver reaches 60 years of age (or 55 years, if he/she is entitled by law to retire early), money is paid in the form of a lump sum or a programmed withdrawal.

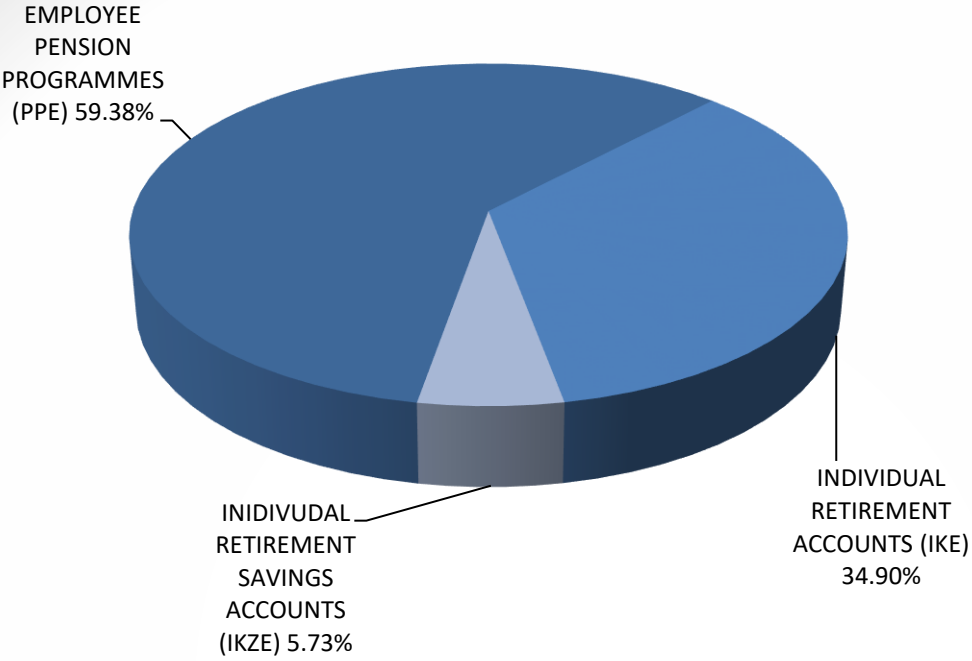
Individual pension savings accounts (indywidualne konta zabezpieczenia emerytalnego, IKZE) are the most recent products within the voluntary pension sector. They started to operate in 2012 and are offered in the same forms as individual retirement accounts (IKE) but have other contribution ceilings and offer a different form of tax relief. Premiums paid to the account can be deducted from the income tax base. Contributions and returns are exempt from taxation but the benefits are subject to taxation at a reduced rate. Savings accumulated in IKZE are paid to the individual as a lump sum or via a programmed withdrawal after the saver reaches the age of 65. The limit for IKZE contributions is 120% of the average wage (PLN 5,115.6 - €1,172.44 in 2017).

Table PL 2. Architecture of voluntary pension system in Poland (pillar III) at the end of 2016

Name of the pension system element	Employee Pension Programmes (PPE)	Individual Retirement Accounts (IKE)	Individual Retirement Savings Accounts (IKZE)
Types of pension vehicles	· Unit-linked life insurance · Investment fund · Employee pension fund	· Unit-linked life insurance · Investment fund · Account in the brokerage house · Bank account · Voluntary pension fund	· Unit-linked life insurance · Investment fund · Account in the brokerage house · Bank account · Voluntary pension fund
Assets under management in PLN bln (€ bln)	**11.4** **(€ 2.61)**	**6.7** **(€ 1.54)**	**1.1** **(€ 0.25)**

Source: own collaboration based on: Pracownicze programy emerytalne w 2016 roku, UKNF, Warszawa 2017, p. 3, https://www.knf.gov.pl/knf/pl/komponenty/img/RAPORT_PPE_w_2016_57222.pdf; Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 4-5, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf.

Graph PL I. Market share of Polish voluntary pension system elements by assets under management as of 31 December 2016



Source: own collaboration based on: Pracownicze programy emerytalne w 2016 roku, UKNF, Warszawa 2017, p. 3, https://www.knf.gov.pl/knf/pl/komponenty/img/RAPORT_PPE_w_2016_57222.pdf; Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 4-5, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf.

Pension Vehicles

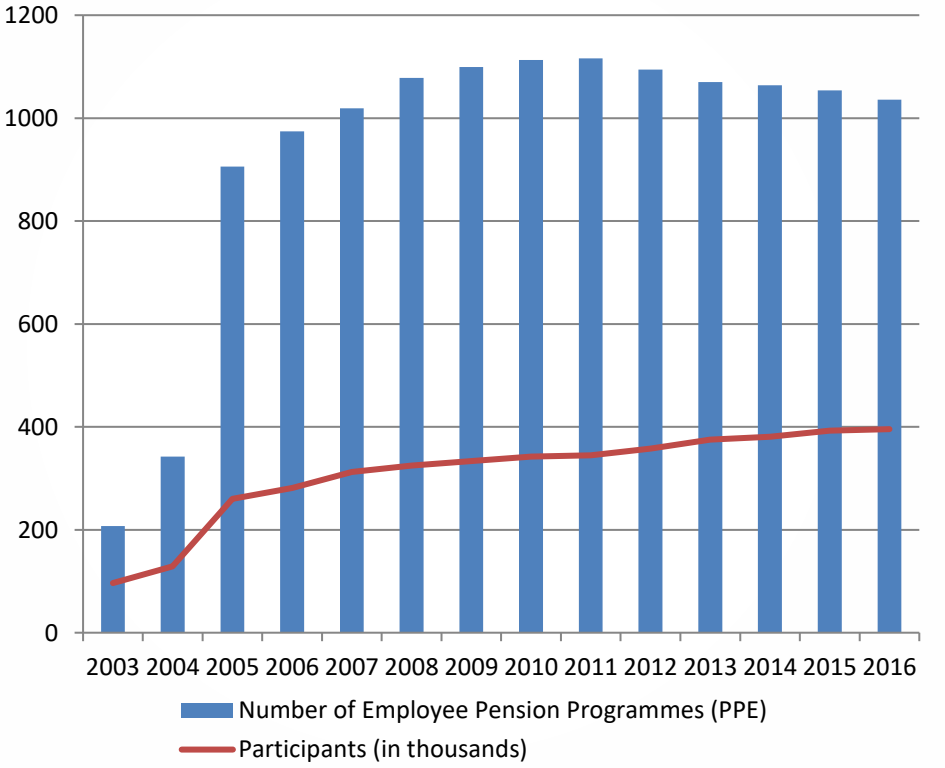
Employees' pension programmes

PPEs can be offered in four forms:

- a contract with an asset management company (investment fund),
- a contract with a life insurance company (group unit-linked insurance),
- an employee pension fund run by the employer,
- external management.

Employee pension programmes started to operate in 1999. The development of the market was very weak during the first five years of operation. Thereafter, due to changes in PPE law, many group life insurance contracts were transformed into PPEs at the end of 2004 and in 2005. In 2007 the number of programmes reached 1000, with the size of the market remaining more or less the same since that year. About 1036 programmes were operating at the end of 2016 (see graph below).

Graph PL II. Number of Employee Pension Programmes and the number of PPE participants in 1999-2016



Source: Pracownicze programy emerytalne w 2016 roku, UKNF, Warszawa 2017, p. 10, https://www.knf.gov.pl/knf/pl/komponenty/img/RAPORT_PPE_w_2016_57222.pdf;

PPEs cover 395,600 employees which represents only 2.42% of the working population in Poland.

The most popular form of PPE is a group unit-link life insurance and an investment fund. These two forms represent more than 95% of PPEs (see table below). The proportion is lower when taking into consideration the number of participants (90.1%) and the level of assets (84.5% of total PPE's assets are invested in insurance funds and investment funds).

Table PL 3. Number and assets of Employee Pension Programmes (PPE) by form of the programme in 2016

	Number of PPE	Market share (as % of PPE number)	Market share (as % of participants)	Assets (PLN million)	Market share (as % of PPE assets)
Unit-linked life insurance	668	64.5%	29%	3,077	27.00%
Investment fund	339	32.7%	61.10%	6,552	57.50%
Employee Pension Fund	29	2.8%	9.90%	1,766	15.50%
Total	**1,036**			**11,395**	

Source: Pracownicze programy emerytalne w 2016 roku, UKNF, Warszawa 2017, p. 7-8, https://www.knf.gov.pl/knf/pl/komponenty/img/RAPORT_PPE_w_2016_57222.pdf

The average basic contribution paid in 2016 amounted to PLN 3,549 (€813.39). The average additional contribution financed by the employee amounted to PLN 1,192 (€273.19) on average. PPE assets amounted to PLN 11.4 bln (€2.61 bln) and the average account balance equaled PLN 28,912 (€6,626.33) at the end of 2016. No data is available on the average percentage level of contributions paid to the programmes.

Individual Retirement Accounts (IKE)

According to Polish pension law (the Individual Pension Accounts Act of 20 April 2004), individual retirement accounts (Indywidualne Konta Emerytalne, IKE) can operate in the form of:

- a unit-linked life insurance contract;
- an investment fund;
- an account in a brokerage house;
- a bank account (savings account); or
- a voluntary pension fund.

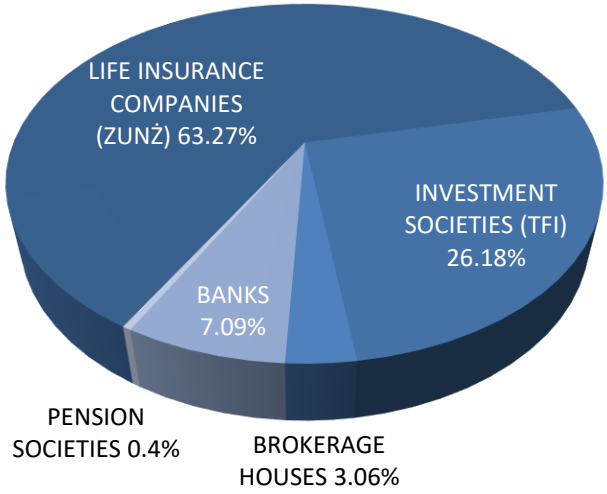
Pension accounts are offered by life insurance companies, investment companies (asset management companies), brokerage houses, banks and pension societies. The most recent pension vehicles are voluntary pension funds that were introduced in 2012 at a time of significant changes in the statutory old-age pension system.

A voluntary pension fund is an entity established solely with the aim of gathering savings of IKE (or IKZE) holders. Pension assets are managed by a pension society (powszechne towarzystwo emerytalne, PTE) that also manages one of the open pension funds (OFE under pillar II) in Poland. Assets of the funds are separated to guarantee the safety of the system, as well as due to stricter OFEs' investment regulations. Having participants in the mandatory funds (which have been made voluntary in April 2014), pension societies have far easier access to potential clients from the voluntary pension market. They are continuously recruiting new participants.

The constructions of IKE products usually do not vary significantly from the standard offer on financial markets. The difference relates to the tax treatment of capital gains (exclusion from capital gains tax) and contribution limits. Moreover, financial institution cannot charge any cancellation fee when an individual transfers money or resigns after a year from opening an account.

The most popular IKE products take the form of life insurance contracts (unit-linked life insurance) and investment funds. According to official data (KNF 2017), these two forms of plans represent almost 90% of all IKE accounts.

Graph PL III. Structure of IKE market by number of accounts and type of provider as of 31 December 2016



Source: Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 9, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf

At the end of 2016, only 902,615 Polish citizens had an individual retirement account (IKE) which represents 5.5% of the working population. They gathered PLN 7,400 (€1,696) on average on an account. IKE holders do not fully use the contribution limit. The average contribution paid from 2004 to 2016 remains permanently below the statutory limit (3 times the average wage, see table below). The total amount of IKE assets amounted to PLN 6.7 billion (€1.54 billion) as of 31 December 2016.

Table PL 4. Number of Individual Retirement Accounts (IKE) by type of the product (2004-2016)

	Unit-linked life insurance	Investment fund	Account in the brokerage house	Bank account	Voluntary pension fund	Total
2004	110,728	50,899	6,279	7,570		**175,476**
2005	267,529	103,624	7,492	49,220		**427,865**
2006	634,577	144,322	8,156	53,208		**840,263**
2007	671,984	192,206	8,782	42,520		**915,492**
2008	633,665	173,776	9,985	36,406		**853,832**
2009	592,973	172,532	11,732	31,982		**809,219**
2010	579,090	168,664	14,564	30,148		**792,466**
2011	568,085	200,244	17,025	29,095		**814,449**
2012	557,595	188,102	20,079	47,037	479	**813,292**
2013	562,289	182,807	21,712	49,370	1,473	**817,651**
2014	573,515	174,515	22,884	51,625	1,946	**824,485**
2015	573,092	201,989	25,220	53,371	2,548	**852, 220**
2016	571,111	236,278	27,615	64,031	3,580	**902,615**

Source: Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 9, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf ; Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2015 roku, UKNF, Warszawa 2016, p. 9, https://www.knf.gov.pl/knf/pl/komponenty/img/Oprac_IKE_IKZE_122015_47033_56354.pdf; Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2013 roku, UKNF, Warszawa 2014, p. 9; Indywidualne konta emerytalne w 2011 roku, UKNF, Warszawa 2012, p. 9; Informacja o indywidualnych kontach emerytalnych sporządzona na podstawie danych liczbowych za 2006 r., UKNF, Warszawa 2007, p. 2; Rocznik Ubezpieczeń i Funduszy Emerytalnych 2004, UKNUiFE, Warszawa 2005.

Table PL 5. Limits on contributions and average contribution paid into IKE in 2006-2016		
	Contribution limit	**Average contribution paid**
2006	3,521	2,199
2007	3,697	1,719
2008	4,055	1,561
2009	9,579	1,85
2010	9,579	1,971
2011	10,077	1,982
2012	10,578	2,584
2013	11,139	3,13
2014	11,238	3,44
2015	11,877	3,5
2016	12,165	3,7

Source: Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 7 & 11, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf, Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2015 roku, UKNF, Warszawa 2016, p. 6 & 12, https://www.knf.gov.pl/knf/pl/komponenty/img/Oprac_IKE_IKZE_122015_47033_56354.pdf; Indywidualne konta emerytalne w 2010 r., UKNF, Warszawa 2011, p. 11.

Individual Retirement Savings Accounts (IKZE)

Similar to individual retirement accounts, the group of IKZE products consists of:

- unit-linked life insurance,
- investment funds,
- bank accounts,
- accounts in brokerage houses,
- voluntary pension funds.

As this part of the pension system only has a five-year history (started in 2012), the number of participants is still at an unsatisfactory level. Only about 3.9% of the Polish working population (2016) is covered by this type of supplementary old-age provision.

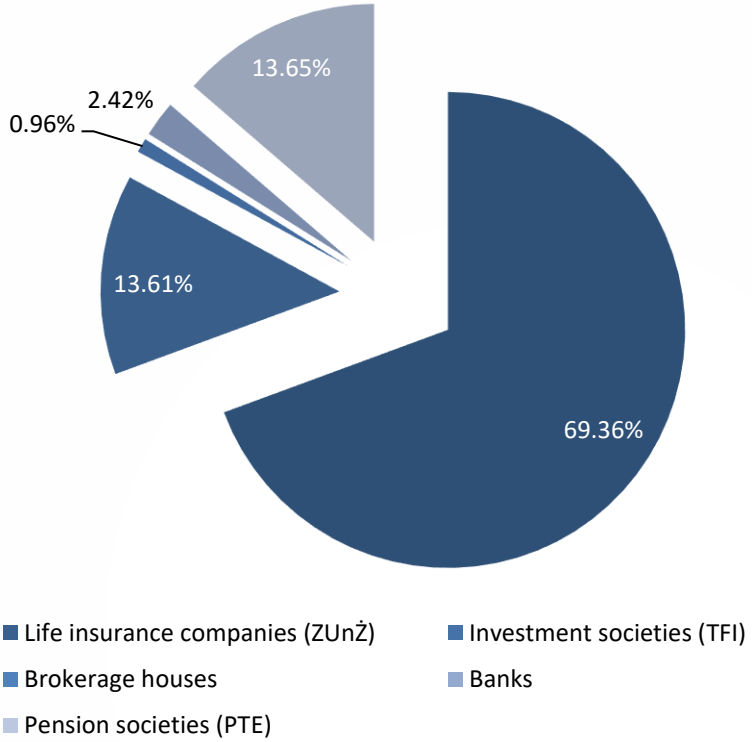
Table PL 6. Number of Individual Retirement Savings Accounts (IKZE) by type of the product (2012-2016)					
Type of the product	**2012**	**2013**	**2014**	**2015**	**2016**
Unit-linked life insurance	363,399	388,699	418,935	442,735	446,054
Investment fund	5,202	9,565	17,510	54,471	87,510
Account in the brokerage house	559	1,012	2,797	4,325	6,201
Bank account	19	33	8,105	13,735	15,585
Voluntary pension fund	127,642	97,117	80,795	82,294	87,762
Total	**496,821**	**496,426**	**528,142**	**597,259**	**643,112**

Source: Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 19, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf, Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2015 roku, UKNF, Warszawa 2016, p. 20, https://www.knf.gov.pl/knf/pl/komponenty/img/Oprac_IKE_IKZE_122015_47033_56354.pdf; Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2013 roku, UKNF, Warszawa 2014, p. 20.

By the end of 2016, circa 643 thousand Poles have opened individual retirement savings accounts. As shown on chart PL IV, the IKZE market is dominated by insurance companies that run more than 69% of the accounts. Brokerage houses and banks do not show a lot of interest in providing this type of old-age pension provision, although some of them put IKZE in their offers.

The savings pot of IKZE is very small compared to other elements of the Polish supplementary pension system. At the end of 2016, financial institutions managed funds amounting to PLN 1.1 billion (€0.25 billion). It is worth noting that this capital was raised through contributions in just five years. The rapid growth of IKZE market in terms of coverage and the value of assets is expected in the coming years. This growth could happen as a consequence of recent changes in IKZE taxation: a higher flat-rate contribution limit that can be deducted from the tax base and benefit payments subject to a reduced income tax rate.

Chart PL IV. Structure of IKZE market by number of accounts and type of provider as of 31 December 2016



Source: Own elaboration based on: Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 19, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf

Table PL 7. Assets of IKZE (in thousands PLN)					
Type of the product	**2012**	**2013**	**2014**	**2015**	**2016**
Unit-linked life insurance	36,393	75,117	167,737	281,946	398,589
Investment fund	7,973	23,371	63,559	193,099	407,884
Account in the brokerage house	1,673	4,815	14,638	30,268	57,045
Bank account	40	98	11,624	35,081	66,600
Voluntary pension fund	6,803	15,805	37,792	79,198	147,972
Total	**52,882**	**119,206**	**295,35**	**619,592**	**1,078,090**

Source: Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2016 roku, UKNF, Warszawa 2017, p. 20, https://www.knf.gov.pl/knf/pl/komponenty/img/IKE_IKZE_2016_50159_56333.pdf, Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2015 roku, UKNF, Warszawa 2016, p. 21, https://www.knf.gov.pl/knf/pl/komponenty/img/Oprac_IKE_IKZE_122015_47033_56354.pdf; Indywidualne konta emerytalne oraz indywidualne konta zabezpieczenia emerytalnego w 2013 roku, UKNF, Warszawa 2014, p. 21.

Charges

The type and level of charges deducted from pension savings depends on the vehicle used and the type of programme. Lower fees are charged for group (collective) provision of an old-age pension organised by employers (PPE). Significant cost differences exist between various product types. Since no comprehensive data regarding the costs of Polish supplementary products is collected or officially published, the information provided below reflects the costs of selected (exemplary) pension products and plans functioning on the Polish market.

Employee Pension Programmes (PPE)

Data on PPE charges is hardly available. The Financial Supervisory Commission does not provide any official statistics on value or the percentage of deductions on assets of employee pension programmes. Some information can be found in the statutes of PPEs but they describe rather the types of cost charged than the level of deductions. Employers

have to cover many administrative costs connected with PPE organisation (disclosure of information, collecting employees' declarations, transfer of contributions). The savings of participants are usually reduced by a management fee that varies from 0.5% p.a. to 4% p.a. of AuM and depend on the investment profile of funds chosen.

The lowest charges are applied to employee pension funds (Pracownicze Fundusze Emerytalne, PFE), which are set up by employers (in-house management of PPE) and managed by employee pension societies. For this type of pension fund no up-front fee is deducted and a rather low management fee (0.5 - 1% p.a.) applies to assets gathered.

Individual Retirement Accounts (IKE) and Individual Retirement Savings Accounts (IKZE)

The type and level of charges depend on the type of product. There is a management fee for investment funds, for voluntary pension funds and for unit-linked insurance. In addition, for a unit-linked life insurance, a financial institution can charge an up-front fee, use different buy and sell prices for investment units (spread) and deduct other administrative fees from the pension savings accounts such as conversion fees and fees for changes in premium allocation in case changes occur more frequently than stipulated in the terms of the contract. Charges that are not connected with asset management and the administration of savings accounts cannot be deducted from IKZE (i.e. life insurance companies cannot deduct the cost of insurance from the retirement account). The accumulation of pension savings through direct investments (accounts in brokerage houses) is subject to fees which depend on the type of transaction and the level of activity on financial markets (trading fees and charges). Banks do not charge any fees for the IKZEs they offer (with the exception of a cancellation fee).

All financial institutions offering individual retirement accounts (IKE) can charge a cancellation fee (also called a transfer fee) when a member decides to transfer savings to a programme offered by another financial entity during the first year of the contract. No cancellation fee can be deducted from the account when a saver resigns from the services of a

given institution after 12 months and transfers money to another plan provider.

The tables below show the level of fees charged in selected individual retirement savings accounts (IKZE).

Table PL 8. Charges in IKZE offered by Life insurance companies (unit-linked life insurance contracts)

Institution	Name of fund	Management fee (as % of assets)	Up-front fee	Transfer fee
Aviva TUnŻ	Aktywnej Selekcji - Stabilny	2.25%	8% - first PLN 6,000, then 4%; 10% - first PLN 6,000, then 6% (with add. insurance)	50% of assets
	Aktywnej Selekcji - Zrównoważonego	3.25%		
	Aktywnej Selekcji Dynamiczny	4.00%		
ING Życie	ING Portfel Inwestycyjny Stabilny	2.00%	None	50% of assets
	ING Portfel Inwestycyjny Wzrostowy			
	ING Gotówkowy	0.00%		
	ING Obligacji	1.25%		
	ING Ochrony Kapitału	1.50%		
	ING Stabilnego Wzrostu	2.50%		
	ING Zrównoważony	3.00%		
	ING (L) Papierów Dłużnych Rynków Wschodzących (WL)	1.80%		
	ING (L) Globalny Długu Korporacyjnego			
	ING Akcji	3.50%		
	ING Selektywny			
	ING Środkowoeuropejski Sektorów Wzrostowych			
	ING (L) Globalny Spółek Dywidendowych	2.50%		
	ING (L) Spółek Dywidendowych USA			

	ING (L) Europejski Spółek Dywidendowych			
	ING (L) Nowej Azji			
	ING (L) Rynków Wschodzących			
	ING (L) Ameryki Łacińskiej			
	ING (L) Japonia			
Pramerica Życie TUiR	UFK Pramerica – Pioneer Akcji Polskich		None	20% of assets
	UFK Pramerica – Pioneer Stabilnego Wzrostu	2.5% - share funds		
	UFK Pramerica – Pioneer Obligacji	1.5% - stable growth funds;		
	UFK Pramerica – PKO Akcji	1% - bond funds		
	UFK Pramerica – PKO Stabilnego Wzrostu			
	UFK Pramerica – PKO Obligacji			
	UFK Pramerica – Arka BZ WBK Akcji			
	UFK Pramerica – Arka BZ WBK Stabilnego Wzrostu			
	UFK Pramerica – Arka BZ WBK Obligacji			
	UFK Pramerica – Legg Mason Akcji			
	UFK Pramerica – Legg Mason Senior			
	UFK Pramerica – Legg Mason Obligacji			
PZU Życie SA	Stabilnego Wzrostu	4.50%	4% - in first 3 years,	10% of assets, not less than PLN 50
			3% - yrs 4-5,	
			2% - yrs 6-10,	
			1% - yrs 11+	

Source: K. Ostrowska, Nowe konta emerytalne (IKZE) w ofercie instytucji finansowych, "Rzeczpospolita", 01.03.2012 r. and www.analizy.pl

Table PL 9. Charges in IKZE offered by Investment Societies (investment funds)				
Institution	**Name of fund**	**Management fee (as % of assets)**	**Up-front fee**	**Transfer fee**
KBC TFI	KBC Globalny Akcyjny	3.00%	none	none
	KBC Akcyjny	4.00%		
	KBC Aktywny	3.75%		
	KBC Globalny Stabilny	2.00%		
	KBC Stabilny	2.50%		
	KBC Papierów Dłużnych	1.35%		
	KBC Pieniężny	0.80%		
	KBC Akcji Małych i Średnich Spółek	2.30%		
Legg Mason TFI	LM Akcji	3.50%	none (a fee of PLN 400 for opening the account, not charged when opening the account directly at Legg Mason offices or online)	PLN 500
	LM Strateg			
	LM Senior	2.50%		
	LM Obligacji	1.50%		
	LM Pieniężny	0.80%		
Pioneer Pekao TFI	Pioneer FIO - subfundusz Pioneer Akcji - Aktywna Selekcja	3.60%	1.50-5.00 % +loyalty programme (20% reduction in fee in 0-4 years, 30% after 4 years, 50% after 6 years, no fee after 8 years)	PLN 100
	Pioneer FIO - subfundusz Pioneer Obligacji Plus	1.60%		
	Pioneer FIO - subfundusz Pioneer Lokacyjny	1.50%		

Source: own elaboration based on informatiom from: K. Ostrowska*, Nowe konta emerytalne (IKZE) w ofercie instytucji finansowych*, "Rzeczpospolita", 01.03.2012 r. and www.analizy.pl

Table PL 10. Charges in IKZE offered by Pension Associations (voluntary pension funds)				
Institution	**Product**	**Management fee (as % of assets)**	**Up-front fee**	**Transfer fee**
Allianz Polska PTE	Allianz Polska DFE	max. 2.5%	1.50%	PLN 200
Amplico PTE	MetLife DFE	max 2.5 %	1-2.5%, if the account balance lower than PLN 20,000	15% of assets, min. PLN 300
Generali PTE	Generali DFE	max. 2.6%	25% (min. PLN 200, max. PLN 400) in 1st year, 1.9% in the 2nd year; 1.8% in 3rd year; 1.6% in years 4-9; 0% years 10+	
Nordea PTE	Nordea DFE	1.95% + success fee 15%, if results above benchmark and positive	0-4%, depending on the quota of contribution 0-1% upfront-fee on money transferred from other institution	20% of assets, max. PLN 500
Pocztylion-Arka PTE	DFE Pocztylion Plus	max 2.5%	0-3%, depending on the quota of contribution	10% of assets, min. PLN 100
PTE PZU	DFE PZU	up to 2.99% + success fee max. 20% of the surplus above benchmark	3.4% in first 5 years, 2.9% - yrs 6-10, 2.4% - yrs 11-15, 1.0% - yrs 15+-	10% of assets, PLN 50 at least
ING PTE	Nationale Nederlanden DFE	Max. 2% (1,5% of the surplus above PLN 1 bln AUM) + success fee 15% of the surplus above 8% return	53.4% only from the first contribution (max PLN 80), next contributions: 0%	50% of assets
PKO BP Bankowy PTE	PKO DFE	max 3.5%	none	50% of assets
Pekao Pioneer PTE	Pekao DFE	max 2.6%	2.5% or 0% (if the total contribution amounts to more than PLN 10,000)	10% of assets, min. PLN 50

Source: Own elaboration based on www.analizy.pl

Taxation

Employees' pension programmes (PPE)

Basic contributions financed by employers are subject to personal income tax, which is deducted from the employee's salary. Additional contributions paid by employer from net salary are treated the same way (contributions paid from after-tax wage). Returns and benefits are not taxed (TEE regime).

Individual Retirement Accounts (IKE)

Contribution is taxed as it is paid by a saver from his/her net income. An individual can pay up to three times the average wage annually (PLN 12,789 - €2,931.11 - in 2017). There is a tax relief in capital gains tax. Benefits are not taxable (TEE regime).

Individual Retirement Savings Accounts (IKZE)

Contributions to IKZE are deductible from the income tax base. In 2012 and 2013 there was an upper limit of contribution amounting to 4% of the person's annual salary in the previous year. Due to the most recent changes in the pension system the given limit was replaced with a flat-rate limit in 2014. Every individual can pay up to 120% of the average salary into an account (PLN 5,115.6 - €1,172.44 in 2017). Returns are not subject to taxation but benefits are taxed with a reduced flat-rate income tax (10%). This part of the supplementary pension system is the only one that follows the EET tax regime.

Pension Returns

Asset allocation

Employee Pension Programmes (PPE)

Polish law does not impose any strict investment limits on voluntary pension savings accounts (IKE, IKZE, most forms of PPE) with exception of occupational pension programmes offered in the form of employees' pension fund (types of asset classes are prescribed by law). Every financial

institution that offers IKE or IKZE provides information on investment policy in the statute of the fund. Due to the fact that many existing plans offer PPE participants the possibility to invest in funds from a broad group of investment funds operating in the market (not only the funds dedicated exclusively to pension savings), it is impossible to indicate how the portfolios of the majority of PPEs look like.

The tables below present the investment portfolio of employees' pension funds which are the only types of occupational pension products with official and separate statistics on asset allocation.

Table PL 11. Portfolio of employees' pension funds (PFE) in years 2010-2016 (as % of assets)

	2010	2011	2012	2013	2014	2015	2016
Shares	14.19	14.90	19.49	29.86	33.00	34.09	29.62
Gov. bonds	1.48	2.14	1.53	2.01	1.05	2.27	63.00
Investment funds units	24.30	33.13	37.53	49.83	61.64	63.64	0
Bank deposits	58.78	48.90	40.91	17.91	4.30	0.00	6.70
Other investments	1.25	0.92	0.54	0.39	0.01	0.00	0.68
Assets under management (in PLN mln)	1,542.60	1,559.00	1,873.28	2,038.54	1,749.60	1,797.08	1,766.59

Source: own collaboration based on: Biuletyn Roczny. Rynek PPE 2016, KNF, Warszawa 2017, https://www.knf.gov.pl/?articleId=57349&p_id=18, Biuletyn roczny. Rynek PPE 2015, KNF, Warszawa 2016; https://www.knf.gov.pl/?articleId=56622&p_id=18, Biuletyn roczny. Rynek PPE 2014, KNF, Warszawa 2015; Biuletyn roczny. Rynek PPE 2013, KNF, Warszawa 2014; Biuletyn roczny. Rynek PPE 2012, KNF, Warszawa 2013; Biuletyn roczny. Rynek PPE 2011, KNF, Warszawa 2012; Biuletyn roczny. Rynek PPE 2010, KNF, Warszawa 2011.

Individual Retirement Accounts (IKE) and Individual Retirement Savings Accounts (IKZE)

There are no available statistics that allow for the identification of the asset allocation within Individual Saving Accounts (IKE) and Individual Retirement Savings Accounts (IKZE) offered as insurance contracts, investment funds and accounts in brokerage houses. This is because an individual can buy

units of many investment funds (or financial instruments) that are also offered as non-IKE and non-IKZE products. Since no separate statistics for pension and non-pension assets of a given fund are disclosed, it is impossible to indicate which funds create the portfolios of IKE and IKZE holders, nor what the rates of returns obtained by this group of savers are.

The only form of IKE and IKZE that is strictly separated from other funds and is dedicated solely to pension savings is a voluntary pension fund. These vehicles started in 2012. The tables below show the DFE's investment portfolios at the end of 2014, 2015 and 2016.

Table PL 12. Portfolio of voluntary pension funds (DFE) offered as Individual Retirement Saving Accounts (IKZE) and Individual Retirement Accounts (IKE) in 2014, as % of DFE assets

	Allianz Polska DFE (D)	DFE Pekao	DFE Pocztylion Plus	DFE PZU	ING DFE	MetLife DFE	Nordea DFE(D)	PKO DFE
Shares	33.46	43.83	24.62	66.82	63.74	39.46	37.44	35.29
Gov. Bonds	32.43	40.45	67.55	13.94	0.00	40.26	35.32	53.04
Nongov. Bonds	21.81	2.86	0.00	2.40	12.35	0.00	10.44	0.00
Other	12.3	12.86	7.83	16.84	23.92	20.27	16.81	11.67
Assets under management (in PLN mln)	**3.72**	**13.18**	**0.55**	**9.08**	**5.92**	**19.11**	**1.63**	**6.29**
Market share (as % of total DFEs' assets)	6.25	22.16	0.92	15.27	9.95	32.13	2.74	10.57

Source: *http://www.analizy.pl , 2015*

Table PL 13. Portfolio of voluntary pension funds (DFE) offered as Individual Retirement Saving Accounts (IKZE) and Individual Retirement Accounts (IKE) in 2015, as % of DFE assets

	Allianz Polska DFE	DFE Pekao	DFE Pocztylion Plus	DFE PZU	Generali DFE	NN DFE	MetLife Amplico DFE	PKO DFE
Shares	35.12	52.9	26.26	73.26	37.44	57.45	61.24	35.84
Gov. Bonds	29.39	30.95	67.64	13.58	48.61	4.49	32.92	51.51
Nongov. Bonds	28.6	1.93	6.11	1.45	0	10.5	0	0
Other	6.9	14.21	0	11.7	13.95	27.57	5.84	12.65
Assets under management (in PLN mln)	**5.6**	**28.5**	**0.8**	**14.8**	**0.1**	**15.2**	**24.2**	**16.8**
Market share (as % of total DFEs' assets)	5.28	26.89	0.75	13.96	0.09	14.34	22.83	15.85

Source: http://www.analizy.pl, 2016

Table PL 14. Portfolio of voluntary pension funds (DFE) offered as Individual Retirement Saving Accounts (IKZE) and Individual Retirement Accounts (IKE) in 2016, as % of DFE assets

	DFE Pekao	DFE Pocztylion Plus	DFE PZU	Generali DFE	Nationale Nederlanden DFE	MetLife Amplico DFE	PKO DFE
Shares	57.41	34.83	74.79	68.6	50.51	59.6	26.26
Gov. Bonds	32.73	59.31	17.64	29.87	18.75	32.6	58.34
Nongov. Bonds	4.78	0	0.77	0	6.85	0	0
Other	5.08	5.86	6.8	1.53	23.89	7.8	15.4
Assets under management (in PLN mln)	**52.2**	**1.1**	**27**	**0.2**	**36.7**	**28.5**	**34.8**
Market share (as % of total DFEs' assets)	27.65%	0.58%	14.30%	0.11%	19.44%	15.10%	18.43%

Source: http://www.analizy.pl, 2017.

Rates of return

The investment efficiency of supplementary pension products is almost impossible to assess due to lack of necessary data published by financial institutions. In Poland there is no obligation to disclose rates of return to pension accounts holders. Generally, owners of savings accounts are informed about contributions paid, the value of investment units and the balance of their accounts at the end of the reporting period. But they are not informed neither about their pension pots real efficiency, nor the total cost ratio deducted from their individual retirement accounts. No data concerning the investment efficiency of supplementary pension products is submitted to the Financial Supervisory Commission or published in official statistics.

Due to the shortage of detailed statistics the assessment of the efficiency of pension product investments is possible only for the vehicles dedicated

solely to PPE, IKE or IKZE, namely employee pension funds (PFE) and voluntary pension funds (DFE).

As the management fee is deducted from fund assets on a regular basis and the value of a fund unit is calculated based on net assets, the nominal rates of return indicated below take into account the levels of management costs. The only fee that has to be included when calculating after-charges returns is an upfront-fee deducted from contributions paid into accounts.

During the period of 2002-2016 employee pension funds (PFE) showed rather positive returns up to 17.41% annually. Negative results appeared only in the years 2008, 2011 and 2015 when equity markets dropped significantly. After-charges real returns observed in 12 of 15 years and the average return in the 15-year period is highly positive as well. These satisfactory results were obtained due to proper portfolio construction, high quality of management and low costs.

Table PL 15. Nominal and real after-charges returns of Employees Pension Funds in 2002-2016 (in %)									
Employees pension fund	PFE NESTLÉ POLSKA	PFE SŁONECZNA JESIEŃ	PFE ORANGE POLSKA	PFE UNILEVER POLSKA	PFE "NOWY ŚWIAT"	PFE "DIAMENT"	Weighted nominal return after charges, before inflation	Inflation (HICP)	Weighted real return after charges and inflation
2002			11.35		9.76	-21.05	7.88	1.9	**5.87**
2003			10.28		10.44	8.71	10.14	0.7	**9.37**
2004	11.25		12.30	14.24	13.64		12.59	3.6	**8.68**
2005	12.53		14.82	12.93	13.81		14.50	2.2	**12.04**
2006	12.41	10.60	15.40	13.41	15.25		14.99	1.3	**13.51**
2007	5.10	4.52	6.10	5.77	6.23		5.94	2.6	**3.26**
2008	-10.10	-11.33	-13.54	-6.34	-13.86		-13.14	4.2	**-16.64**
2009	13.33	14.83	15.78	12.74	17.41		15.85	4.0	**11.39**
2010	9.98	9.60	10.33	9.75	10.52		10.22	2.7	**7.32**
2011	-5.05	-3.10	-4.75	-3.59	-5.20		-4.51	3.9	**-8.10**
2012	15.82	13.60	14.96	15.01	14.15		14.57	3.7	**10.48**
2013	5.19	5.21	3.45	4.56	5.71		4.28	0.8	**3.45**
2014	4.42		3.91	4.92	2.56		3.65	0.1	**3.54**
2015	-1.24		-2.74	-0.97	-1.35		-2.31	-0.7	**-1.62**
2016			3.18	4.88	3.93		3.44	-0.2	**3.64**
Annual average 2002-2016	**5.84**	**5.15**	**6.38**	**6.49**	**6.52**	**-7.36**	**6.22**	**2.20**	**4.13**

Source : Own collaboration based on data from KNF, Eurostat.

Voluntary pensions funds (DFE) have obtained extraordinary investment results from their start in 2012. The first years of their operation coincided with the time of the Polish financial market recovery and allowed the funds to maximise rates of return from the equity portfolios. The best DFEs reported more than 50% nominal return in 2013. But such returns were impossible to reach the next years. In 2014 some of DFE even experienced slightly negative returns that were covered by returns in the years 2015-2016. In 2016 return on DFEs investment was again rather satisfactory for future pensioners both in nominal and real terms. The average real rate of return in years 2013-2016 amounted to 11.1%.

Table PL 16. Nominal and real returns of voluntary pension funds (DFE) in 2013-2016 (in %)

	2013	2014	2015	2016	Annual average 2013-2016
Allianz Polska DFE	7.80	2.03	-0.33	5.81	**3.78**
DFE Pekao	16.30	1.27	3.26	4.85	**6.27**
DFE Pocztylion Plus	6.90	-2.22	2.56	3.60	**2.66**
DFE PZU	32.80	3.64	9.07	16.19	**14.92**
NN DFE	59.10	-0.73	16.2	13.26	**20.07**
MetLife Amplico DFE	56.70	6.09	-1.89	3.76	**14.06**
PKO DFE	16.90	2.54	-0.88	5.74	**5.87**
Weighted nominal before charges and inflation	40.57	3.15	3.90	8.14	**12.98**
Weighted nominal return after charges*, before inflation	36.94	1.29	3.33	6.30	**11.10**
Inflation (HICP)	0.80	0.10	-0.70	-0.20	**0.00**
Weighted real return after charges and inflation	35.85	1.19	4.06	6.51	**11.10**

**Returns after charges were calculated with an assumption that an individual pays one contribution of PLN 2.000 at the beginning of the year. ** After tax returns were calculated with the assumption that assets collected are subject to EET tax regime (calculation for IKZE not for IKE). DFE (voluntary pension funds) are offered simultaneously as IKE and IKZE. It means that assets gathered in the same pension fund may be taxed differently (EET or TEE) and therefore only part of pension funds' assets will be taxed at decumulation.*

Source: own elaboration based on: www.analizy.pl; Harmonised index of consumer prices (HICP), Eurostat, http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_aind&lang=en

Conclusions

Starting in 1999, with individual supplementary elements introduced in 2004 and 2012, the Polish supplementary pension market is still in its early stage of operation. The coverage ratios show that only a tiny part of Poles decided to secure their future in old-age by purchasing individual pension products. This could be because of low financial awareness, insufficient level of wealth or just the lack of information and low transparency of pension products.

The official information concerning supplementary pension products in Poland is very limited. Financial institutions do not have any obligation to disclose rates of return, either nominal or real, nor after-charges. Published data includes the total number of programmes or accounts by types of financial institution and total assets invested in pension products. The Financial Supervisory Commission (KNF) collects additional detailed data about the market (the number of accounts and pension assets managed by every financial institution), but does not disclose the data even for research purposes.

Moreover, no comparable tables on charges, investment portfolios and rates of return are prepared or made accessible to the public on a regular basis. Certain product details have to be put in the fund statutes or in the terms of a contract, but they are hardly comparable between providers. The Polish supplementary pension market is highly opaque, especially in terms of costs and returns.

Among a wide variety of pension vehicles, there are only a few products with official statistics sufficient to assess their investment efficiency: employee pension funds (PFE) managed by employees' pension societies and voluntary pension funds (DFE) managed by pension societies (PTE). Other products are more complex and due to the fact that supplementary pension savings are reported together with non-pension pots it makes it impossible to analyse the portfolio allocations and rates of return for individual pension products separately.

After-charges returns in the "youngest" pension products offered as a form of voluntary pension fund (DFE) were extremely high in 2013, both in nominal and real terms. The second series of products analysed, namely employee pensions funds (PFE) delivered significant profits as well. But other pension vehicles may turn out not to be so beneficial, especially when a wide variety of fees and charges are deducted from contributions paid to the accounts.

To sum up, the disclosure policy in supplementary pension products in Poland is not savers-oriented. Individuals are entrusting their money to the institutions but they are not getting clear information on charges and investment returns. Keeping in mind the pure DC character of pension vehicles and lack of any guarantees, it puts a huge risk on savers. All this may lead to significant failures on the pension market in its very early stages of development. In future some changes in the law should be introduced, such as imposing an obligation on financial institutions to disclose rates of return to pension accounts holders, that would help individuals to make well-informed decisions and avoid buying inappropriate retirement products[195].

[195] Especially, taking into consideration very limited official information concerning supplementary pension products, as well as the extent of mis-selling of e.g. unit-linked insurances that took place in Poland and the subsequent enforcement action (as the sector's self-regulation failed) https://uokik.gov.pl/news.php?news_id=12776

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Pension Savings: The Real Return

2017 Edition

Country Case: Romania

Introduction

Romanian old-age pension system is based on the World Bank's multi-pillar model, which consists of three main pillars:

- Pillar I – State pension organized as a mandatory Pay-As-You-Go scheme (PAYG);
- Pillar II – Funded pension organized as a mandatory-funded defined contribution based scheme;
- Pillar III – Supplementary pension organised as a voluntary defined contribution pension scheme.

Romania's multi-pillar pension reform began in 2007, when pillar III was added into the pension system (collecting the first contributions) and became voluntary for all persons earning any type of income. Pillar II was put into place in 2008 (collecting the first contributions) and became mandatory for all employees aged under 35.

Table RO 1. Pensions system in Romania		
National House of Public Pensions	Private Pension System Supervisory Commission	
PILLAR I	**PILLAR II**	**PILLAR III**
State Pension	**Funded pension**	**Voluntary pension**
Law no.263/2010 on the unitary public pension system	Law no.411/2004 on the privately-managed pension funds, republished, including subsequent amendments and additions	Law no.204/2006 on the voluntary pensions, including subsequent amendments and additions
Mandatory	Mandatory	Voluntary
Publicly-managed	Privately managed pension funds	
PAYG	Funded	
DB (Defined Benefit scheme)	DC (Defined Contribution Scheme)	
	Individual personal pension accounts	
The possibility of early and partially early retirement, contingent upon the fulfillment of the age conditions and the contribution stage provided by the law and the accumulated points.	Withdrawal from the system is only allowed through retirement.	The participant can, at any time, suspend or stop the contribution payment (they remain members in the system until retirement).
Quick facts		
Number of old-age pensioners: 3.95 mil. Average old-age pension: 237 €	Administrators 7 Funds 7 Custodians 3 Brokers 14 Assets under Management 6.93 bln € Participants 4.5 mil.	Administrators 8 Funds 10 Custodians 3 Brokers 21 Assets under Management 0.33 bln € Participants 0.41 mil.

Source: *Own elaboration, 2017 (data as of 31 December 2016)*

Pillar I – State Pensions

The first pillar of the Romanian pension system is defined by benefits and funded on an ongoing basis, and is based on the PAYG principle of redistribution and is the main pension system.

The state is collecting the social contribution for pensions from the contributors and pays the pensions immediately to the current pensioners. It is based on solidarity between generations and gives the right to receive a pension when the retirement age is reached, following a full contribution period for which the duration is stipulated by law.

This compulsory system is closely connected to the economic activity and income of citizens. It is 99% financed from social security contributions made by both employers and also employees, while consuming the biggest part of social security budget.

Social security contributions are paid to the State's social security budget at a rate of 20.8% of payroll for employers and 10.5% of income (gross earnings) for employees. It should be noted that since 1 October 2014, the employer's contribution ratio has been reduced to 15.8%. This pillar is financed by the contributions of economically active individuals. These contributions are directed to the National House of Public Pensions (CNPAS), which distributes the benefit to current pensioners (system beneficiaries).

The pensions are calculated according to an algorithm based on pension points, by comparing an individual's own salary to the average monthly salary.

According to Romania's legislature, starting on 1 January 2011, the standard retirement age is to be 63 years for women and 65 years for men. These levels will be gradually reached as follow:

- between January 2011 and January 2015, the standard age for pensioning of women grew from 59 years to 60 years and for men from 62 years to 65 years;

- as of the end of 2015 period retirement age will gradually increase only for women from 60 years to 63 years until 2030.

Early retirement - According to Law no. 263/2010 regarding the public pension schemes, valid since 1 January 2011, taking early pension is possible as of maximum five years before the standard retirement age, provided the worker has at least eight or more contribution years. The deduction made on early pension payment is a fixed one: 0.75% for each month (9% per year), what might bring a maximum deduction of 45% from the standard pension. The deduction is applied until the standard age limit is reached.

Partial early retirement - Partial early retirement is possible as of maximum five years before the standard pension age. This only applies to workers with less than eight years of contribution. There is only one instance allowing partial early retirement without deduction: for those persons who were residents for at least 30 years in extremely polluted areas. In that particular case, the applicant of partial pre-pension may benefit of two years' reduction on the standard pensions age requirement without any deduction. The reduction of the standard age limit foreseen for pre-pension or anticipated pre-pension cannot be added to any other reduction foreseen by the law.

Disability pension - Disability pension is given to persons who lost at least half of their work capacity, because of work accidents and professional sickness, schizophrenia, AIDS, etc, as well as normal sickness and accidents unlinked to the work place.

According to the law, there are three degrees of disability, as follow:

- first degree - total loss of work capacity and self-care capacity;
- second degree - total loss of work capacity but having the capacity of self-care;
- third degree - losing at least half of the capacity to work: the person is capable of performing an activity for a maximum of half of the work time.

Pensioners suffering from the first degree of invalidity received, as part of their pension, an indemnity for a career as a fix revenue representing 80% of one pension point.

Pension for orphans and widowers – A pension is given to the orphans or to the surviving spouse if the deceased was a pensioner or the pension was granted to that person but not picked-up. Orphans have the right to a successor pension until the age of 16, or until the age of 26 if they are continuing formal education (this successor pension is nullified in case of invalidity (disability) of any degree acquired in the period mentioned above). The widowed spouse has the right to a successor pension until reaching the standard age limit for their own pension, if they were married for at least 15 years. If the length of marriage is between 10 to 15 years, the pension of the widowed spouse is decreased by 0.5% for each month, or by 6% for each year. The level of the successor pension is calculated by applying a percent on average annual point of pension acquired by the deceased, as follows:

- for one successor – 50%;
- for two successors – 75%;
- for three or more – 100%.

Pillar II – Funded pensions

Romania's mandatory private pensions system pillar II is based on the World Bank's multi-pillar model. It is a fully funded scheme, based on personal accounts and on the defined contribution (DC) philosophy with minimum return guarantees. Participant will receive at retirement at least the sum of contributions, less fees. Each fund has to comply, during the accumulation phase, with a minimum return mechanism that is set quarterly by national regulation and based on average market performance of all funds. Pillar II represents privately-managed mandatory pensions.

The beginning of pillar II in Romania is connected with three important dates:

- January – July 2007 (Authorizing the administrators),

- 17 September 2007 – 17 January 2008 (Choosing pension fund by participants),
- 20 May 2008 (Collecting the first contributions to Pillar II).

The pillar II is mandatory since its inception for all employees under the age of 35 and voluntary (optional) for employees aged 35 to 45.

Participation is mandatory for all individuals (employees as well as self-employed) paying social security contributions. Contribution collection is centralized by the National House of Pensions (CNPAS), which collects and directs the contributions towards the mandatory pension funds. Contributions to pillar II are a part of the social insurance contributions of insured person under the public pension system, and are redirected via CNPAS to personal pension accounts managed by private pension providers.

A participant contributes during his active life and will get a pension when reaching the retirement age of 65 for men and 63 for women. The starting level of contribution was at 2% of the participant's total gross salary and it goes up by 0.5 percentage points a year, to reach 6% of total gross revenues in 2017. The contribution level is fixed with no possibility to contribute less or more based on individual preferences.

The contributions to a pension fund shall be recorded in individual personal pension account. Savings are invested by pension fund administrator, according to the specific legislation of the pension scheme. Participants can choose only one pension fund.

Mandatory pension funds are managed by their administrators - Pension Management Companies (PMCs). Each PMC can manage only one mandatory pension fund. Mandatory pension funds operations are similar to the investment funds. PMC must obtain several licenses from Romania's pension market regulatory and supervisory body.

The function of control, regulation, supervision and information about private pensions shall be carried out by the Financial Supervisory Authority

(ASF), an independent administrative authority and legal entity under the control of the Romanian Parliament.

Withdrawal from the system is only allowed at the standard retirement age of participants in the private pension system.

Pillar III – Voluntary private pension

Romania's voluntary private pensions system pillar III is also based on the World Bank's multi-pillar model. It is also a fully funded system, based on personal accounts and on the defined contribution (DC) philosophy. Pillar III represents privately-managed supplementary pensions.

The beginning of pillar III in Romania is connected with two important dates:

- October 2006 – May 2007 (Authorizing the administrators),
- May 2007 (Collecting the first contributions to third Pillar).

Participation is open to everybody earning an income, either employees or the self-employed. Contributions are made through the employers in case of employees. In case of self-employment, the contributions are sent directly on the accounts managed by pension management companies. The contributions are made by the employee, with the possibility for employers to contribute a share.

Voluntary pension funds as a special purpose vehicle are managed by their administrators - PMCs, Life Insurance Companies (LICs) or Asset Management Companies (AMCs). Each administrator is obliged to establish and operate at least one voluntary pension fund. On the other hand, and in comparison, with pillar II, administrators can manage as many funds as they wish. A voluntary pension fund operates on a similar basis as investment fund. Pension fund administrator must get several licenses from Romania's Financial Supervisory Authority.

Participants to such a fund contribute during their active life and will get a pension at the age of 60 (both woman and men). The contribution is limited

up to 15% of the participant's total gross income. The contribution level is flexible - it can be decided upon, changed, and even interrupted and resumed.

Pension Vehicles

As indicated above, each PMC in Romania is allowed to manage only one mandatory pension fund. At the introduction of pillar II, the total number of authorized administrators (funds) was 18. Consolidation started as early as 2009 and 2010. Currently (end of 2016), there are only seven administrators offering seven pension funds. The two biggest mandatory pension funds (AZT and NN[196]) have 57.56% (according to number of participants) or 58.37% (according to AuM) of the market.

Each PMC is authorized and supervised by ASF. One of the most important conditions imposed on PMC is to attract at least 50,000 participants. ASF withdraws the fund's authorization if the number of participants drops below 50,000 for a quarter.

Structure of savers, assets under management and market share of respective mandatory pension fund (PMC) is presented in a table below.

[196] ING has changed its name to NN during the rebranding in 2015.

Table RO 2. Pension Management Companies market share in Romania (Pillar II)				
Mandatory Pension Fund (PMC)	**Assets under management** *(in €)*	**Market share based on AuM**	**Number of participants**	**Market share based on participants**
ARIPI	588,904,370.18	8.49%	672,168	11.31%
METROPOLITAN LIFE*	980,776,517.54	14.14%	95,014	1.60%
AZT VIITORUL TAU	1,511,296,766.47	21.79%	1,499,010	25.22%
BCR	438,089,710.03	6.32%	567,879	9.55%
BRD	230,058,903.25	3.32%	348,009	5.86%
NN	2,537,087,875.75	36.58%	1,921,937	32.34%
VITAL	649,510,723.15	9.36%	839,296	14.12%
TOTAL	**6,935,724,866.38**	**100.00%**	**5,943,313**	**100.00%**

Source: Own calculations based on ASF data. 2017 (data as of 31 December 2016)
*Note: * ALICO changed its name to METROPOLITAN LIFE (as of 31 December 2016)*

Mandatory pension funds' investment strategy is very strictly regulated. The law imposes percentage limits for different asset classes.

Mandatory pension funds can invest:

- up to 20% in monetary market instruments;
- up to 70% in State bonds of Romania, the EU or EEA;
- up to 30% in bonds and other transferable securities issued by the local public administrations in Romania, the EU or EEA, traded on a regulated market in RO, EU or EEA;
- up to 50% in securities traded on a regulated market in Romania, the EU or EEA;
- up to 15% in bonds issued by third-party states, traded on a regulated market in Romania, the EU or EEA;
- up to 10% in bonds and other transferable securities issued by the local public administration in third-party states, traded on a regulated market in Romania, the EU or EEA;

- up to 15% in bonds issued by the World Bank, the European Bank for Reconstruction and Development and the European Investment Bank, traded on a regulated market in Romania, the EU or EEA;
- up to 5% in bonds issued by Non-governmental Foreign Bodies, traded on a regulated market in Romania, the EU or EEA;
- up to 5% in Undertakings for Collective Investment in Transferable Securities – UCITS, including ETF in RO, the EU or EEA;
- up to 3% in ETC`s and equity securities issued by non UCITS set up as closed investment funds, traded on a regulated market in Romania, the EU or EEA;
- up to 10% in private equity - only for voluntary pension funds.

There is no explicitly defined general quantitative limit on equity investments.

Mandatory pension funds also have some quantitative restrictions:

- 10% of the total number of shares issued by one issuer;
- 10% of the preferential shares issued by one issuer;
- 25% of the equity securities issued by an UCITS, ETF, non UCITS closed investment fund or ETC;
- 10% of an issuer's bonds, with the exception of the state bonds.

Mandatory pension funds can invest all their assets abroad. There are no explicit restrictions regarding investments made abroad.

Pension funds can have one of three possible risk profiles, which are calculated on a daily basis according to a formula established by ASF norms:

- low risk (risk level up to and including 10%),
- medium risk (risk level between 10%, exclusively, and 25%, inclusively),
- high risk (risk level between 25%, exclusively, and 50%, inclusively).

Pillar III – Voluntary private pensions

The Romanian pillar III allows each administrator (PMC, LIC or AMC) to manage as many voluntary pension funds as they wish. At the introduction of the pillar, there were only four providers and six voluntary pension funds. Currently (at the end of 2016), there are eight providers offering 10 voluntary pension funds, and only two administrators (NN and AZT) currently offering more than one voluntary pension fund.

Each administrator in pillar III (PMC, LIC or AMC) is authorized by ASF and must get several licenses from ASF. ASF withdraws the fund's authorization if the number of participants drops below 100 for a quarter.

Voluntary pension funds are also constituted by civil contract and authorized by ASF. Accounting of the voluntary pension fund is separated from the administrator.

Investment rules in the voluntary private pension pillar are the same as in the mandatory pillar (see quantitative and restriction limits for different asset classes in the text above), with less strict limits on private equity (5%) and commodities (5%).

The structure of savers, assets under management and market share of respective voluntary pension fund is presented in a table below.

Table RO 3. Voluntary pension funds market share in Romania (Pillar III)					
Risk profile	**Voluntary pension fund**	**Assets under management** *(in €)*	**Market share based on AuM**	**Number of participants**	**Market share based on participants**
High	FPF AZT VIVACE	16,473,791.47	4.96%	20,392	4.97%
	FPF NN ACTIV	36,896,390.91	11.12%	39,725	9.68%
Medium	FPF AZT MODERATO	41,678,377.56	12.56%	37,834	9.22%
	FPF BCR PLUS	58,087,059.81	17.50%	123,830	30.18%
	FPF BRD MEDIO	17,802,750.48	5.36%	22,234	5.42%
	FPF NN OPTIM	129,786,360.53	39.10%	136,565	33.29%
	FPF PENSIA MEA	12,070,427.28	3.64%	9,994	2.44%
	FPF RAIFFEISEN ACUMULARE	14,411,710.89	4.34%	10,722	2.61%
	FPF STABIL	3,330,341.55	1.00%	5,128	1.25%
	FPF AEGON ESENTIAL	1,394,505.06	0.42%	3,817	0.93%
	TOTAL	**331,931,715.55**	**100.00%**	**382,318**	**100.00%**

Source: Own calculations based on ASF data, 2017 (data as of 31 December 2016)

Charges

Pillar II – Funded pensions

According to the Mandatory Pensions Law, administrator's incomes resulted from the administration of privately administrated pension funds are established from:

- administration fees;
- transfer penalties;
- tariffs for additional information services, provided at request.

The administration fee is established by:

a) deducting an amount from the contributions paid, but not higher than 2.5%, before the conversion of contributions into units of fund (Management commission);
b) deducting a percentage from the total net assets of privately administrated pension fund, but not higher than 0.05% per month (up to 0.6% per year) established by the pension scheme's prospectus (Management fee).

The transfer penalty represents the amount paid by participant in the event of a transfer to another administrator occurring within two years of subscription date to the private pension fund, with the maximum ceiling of this penalty being established by Commission's and set at maximum 5% of assets (Norma CSSPP 12/2009 for pillar II and Norma 14/2006 for pillar III).

The fund also pays for the annual auditing fee (fund auditing taxes) and the rest of the fund's expenses (custody, depositary, transaction/trading expenses) must be supported by the pension company (the administrator).

The commissions to be paid by participants are:

- Management commission (up to 2.5% from the contributions);
- Management fee (up to 0.05% monthly from total gross assets in pension fund);

- Transfer penalty (covered from personal assets, in case of moving to another fund/PFC earlier than in 2 years – between 3.5% and 5%);
- Depositary commission (depository fee);
- Transaction costs (trading fees);
- Bank commissions (banking fees);
- Fund auditing taxes (pension fund auditing fees).

Table RO4 compares effective charges of mandatory pension funds in pillar II over time (calculated via total and net NAV).

Table RO4. Effective charges in mandatory pension funds (Pillar II)

Mandatory pension fund	2008	2009	2010	2011	2012	2013	2014	2015	2016
ARIPI	1.23%	0.86%	0.75%	0.68%	0.63%	0.62%	0.62%	0.63%	0.61%
METROPOLITAN LIFE	0.54%	0.70%	0.65%	0.61%	0.62%	0.60%	0.59%	0.60%	0.58%
AZT VIITORUL TAU	0.56%	0.69%	0.66%	0.60%	0.61%	0.61%	0.60%	0.60%	0.58%
BCR	1.69%	0.93%	0.75%	0.64%	0.63%	0.62%	0.63%	0.61%	0.58%
BRD	2.04%	1.11%	0.87%	0.75%	0.70%	0.62%	0.62%	0.64%	0.60%
NN	0.55%	0.62%	0.61%	0.58%	0.62%	0.60%	0.60%	0.60%	0.58%
VITAL	0.00%	0.58%	0.79%	0.70%	0.65%	0.64%	0.61%	0.61%	0.58%
EUREKO	0.36%	0.12%	0.84%	0.60%	0.60%	0.60%			
PENSIA VIVA	0.12%	0.60%	0.60%	0.60%	0.60%				
BANCPOST	8.04%								
KD	5.88%	0.60%							
OMNIFORTE	2.04%								
OTP	14.64%	6.00%							
PRIMA PENSIE	8.88%	6.72%							
AVERAGE	0.77%	0.70%	0.66%	0.61%	0.62%	0.61%	0.60%	0.60%	0.58%

Source: Own calculations based on ASF data, 2017 (data as of 31 december 2017)

Pillar III – Voluntary private pensions

According to the Voluntary Pensions Law, the administrator shall charge a fee from participants and beneficiaries for the management of a pension fund.

- The levels of fees shall be established in the pension scheme prospectus and shall be the same for all participants and beneficiaries;
- Any change of the fees shall be notified to participants at least six months before it is applied.

The administrator's revenue will come from:

- management fees;
- transfer penalties;
- fees for services requested by participants.

Management fees are made up of:

a) deduction of a percentage from contributions paid by participants; this percentage cannot be higher than 5% and must be made before contributions are converted into fund units (Management commission);
b) deduction of a negotiated percentage from the net assets of the voluntary pension fund; this percentage cannot be higher than 0.2% per month and shall be mentioned in the pension scheme prospectus (Management fee).

A transfer penalty is applicable (paid by the participant) in the eventuality of a transfer to another fund within two years of having joined the previous fund; its upper limit is established by Commission norms.

Commissions to be paid by participants are:

- Management commission (up to 5% from the contributions);
- Management fee (up to 0.2% monthly from total gross assets in pension fund);

- Transfer penalty (covered from personal assets, in case of moving to another fund/PFC earlier than in 2 years – 5%);
- Depositary commission (depository fee);
- Transaction costs (trading fees);
- Bank commissions (banking fees);
- Fund auditing taxes (pension fund auditing fees).

Table RO 5 compares effective charges of voluntary pension funds in pillar III over time (calculated via total and net NAV).

Table RO 5. Effective annual charges of voluntary pension funds (Pillar III)										
Voluntary pension fund	**31.12 2007**	**31.12 2008**	**31.12 2009**	**31.12 2010**	**31.12 2011**	**31.12 2012**	**31.12 2013**	**31.12 2014**	**31.12 2015**	**31.12 2016**
AZT VIVACE	1.05%	1.47%	2.83%	2.83%	2.52%	2.06%	2.00%	1.91%	1.84%	1.74%
NN ACTIV	0.04%	1.64%	1.85%	2.38%	2.19%	2.34%	2.14%	2.09%	2.17%	2.10%
AZT MODERATO	0.99%	1.83%	2.16%	1.86%	1.66%	1.41%	1.33%	1.28%	1.24%	1.18%
BCR PLUS	5.61%	2.38%	2.28%	2.77%	2.44%	2.40%	2.23%	2.27%	2.16%	2.03%
BRD MEDIO			0.85%	1.90%	1.56%	2.86%	2.18%	2.14%	2.20%	2.11%
CONCORDIA MODERAT		*0.00%*	*1.44%*	*1.44%*	*1.44%*	*1.44%*				
EUREKO CONFORT			*0.00%*	*0.00%*	*0.24%*	*0.12%*	*0.12%*	*0.12%*		
NN OPTIM	0.09%	1.58%	1.68%	2.09%	1.97%	2.05%	1.99%	1.97%	2.00%	1.94%
PENSIA MEA	3.22%	3.17%	2.85%	2.66%	2.66%	2.70%	2.66%	2.66%	2.64%	2.43%
RAIFFEISEN ACUMULARE		0.15%	2.93%	2.40%	2.23%	2.15%	2.43%	2.26%	2.47%	2.16%
STABIL			2.26%	1.61%	1.50%	1.65%	1.63%	3.16%	3.71%	3.37%
AEGON ESENTIAL									1.87%	3.15%
BRD PRIMO			*0.84%*	*1.56%*						
OTP STRATEG	*n/a*	*n/a*	*0.32%*	*0.24%*						
AVERAGE	4.72%	1.91%	2.12%	2.30%	2.09%	2.10%	1.99%	1.99%	2.01%	1.92%
Source : Own calculation based on ASF data, 2017 (data as of 31 december 2016)										

Taxation

Pillar II – Funded pensions

Romania applies an EET system for the taxation of future mandatory accounts. Employee contributions are tax-deductible and investment income on the level of the pension fund is tax-exempt. Pension benefits paid out during retirement will be subject to a personal income tax (16% tax rate) above a certain level (€240 in 2012) as well as subject to a mandatory health insurance contribution (5.5%) above a certain level (€180 in 2012).

Pillar III – Voluntary private pensions

An employee can contribute to the voluntary pension fund up to 15% of his gross income. The employer can contribute on behalf of his employees.

The amount of contribution to voluntary pension funds is fiscally deductible from each subscriber's gross monthly wage or any other assimilated revenue, if the total amount is not greater than the equivalent of €400 in a fiscal year. The same rule applies to the employer, meaning that the employer can deduct the amount paid to the employee voluntary pension account up to €400 annually.

The investment returns achieved by the third pillar fund are tax exempt until the moment of payments toward subscribers start. The pension benefits paid from the pillar III are subject to personal income tax.

Pension Returns

Pillar II – Funded pensions

Seven asset managers offer seven mandatory pension funds in Romania. Performance analysis reveals similarity in their investment strategy, implying similarity in the pension funds' portfolio structure.

Table RO 6. Pillar II pension vehicles			
Risk Profile	**Mandatory pension fund**	**Fund Inception Day**	**Fund closing date**
High	FPAP ARIPI	May-08	Open
Medium	FPAP METROPOLITAN LIFE	May-08	Open
	FPAP AZT VIITORUL TAU	May-08	Open
	FPAP BCR	May-08	Open
	FPAP BRD	May-08	Open
	FPAP ING	May-08	Open
	FPAP VITAL	May-08	Open
No longer in operation	FPAP EUREKO	May-08	Closed September 2014
	FPAP PENSIA VIVA	May-08	Closed January 2013
	FPAP BANCPOST	May-08	Closed May 2009
	FPAP KD	May-08	Closed March 2010
	FPAP OMNIFORTE	May-08	Closed June 2009
	FPAP OTP	May-08	Closed January 2010
	FPAP PRIMA PENSIE	May-08	Closed January 2010

Source: Own calculation based on ASF data, 2017 (data as of 31 december 2016)

According to ASF portfolio structure database, all mandatory pension funds can invest into 16 asset classes:

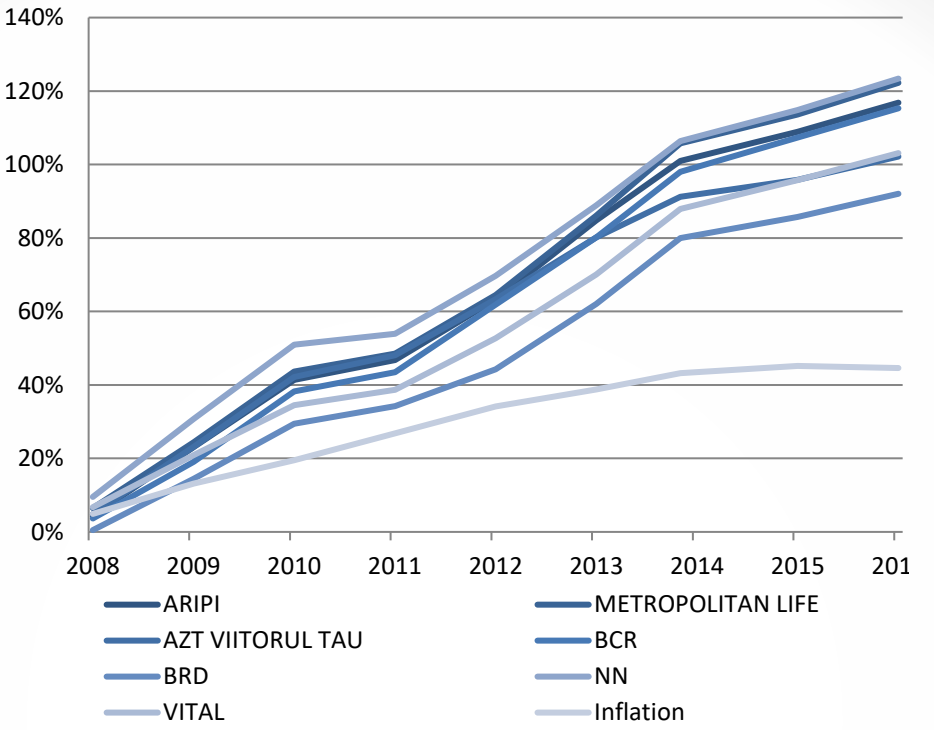
Table RO 7. Allowed asset classes for pillar II pension	
Allowed asset classes for pillar II pension funds	**Asset classes used for the purpose of the study**
Bank deposits	Bank deposits
Government Securities / Municipal Bonds	Government Securities and Bonds
Government Securities	
Corporate Bonds	
Supranational Bonds	
Shares	Stocks
Undertakings for Collective Investment in Transferable Securities – UCITS	Collective Investments
Other Collective Investment Undertakings – non UCITS	
Commodities and Precious Metals	Commodities and Precious Metals
Commodities and Precious Metals Funds	
Instruments for hedging risk	Other
Private Equity	
Infrastructure	
Other financial instruments	
Amounts in settlement at the end of reporting date	
Instruments for hedging risk	

Source: Own elaboration, 2017

For the purpose of this study, we extracted short portfolio structure – only six main asset classes (see table RO 7). Romanian's mandatory pension funds invest mostly in government securities and bonds asset classes. The second most important asset class (from the portfolio structure point of view) is equities and the third is bank deposits. Three other classes have minimal impact on pension fund's performance.

Mandatory Pension Funds' performance compared to inflation is presented below.

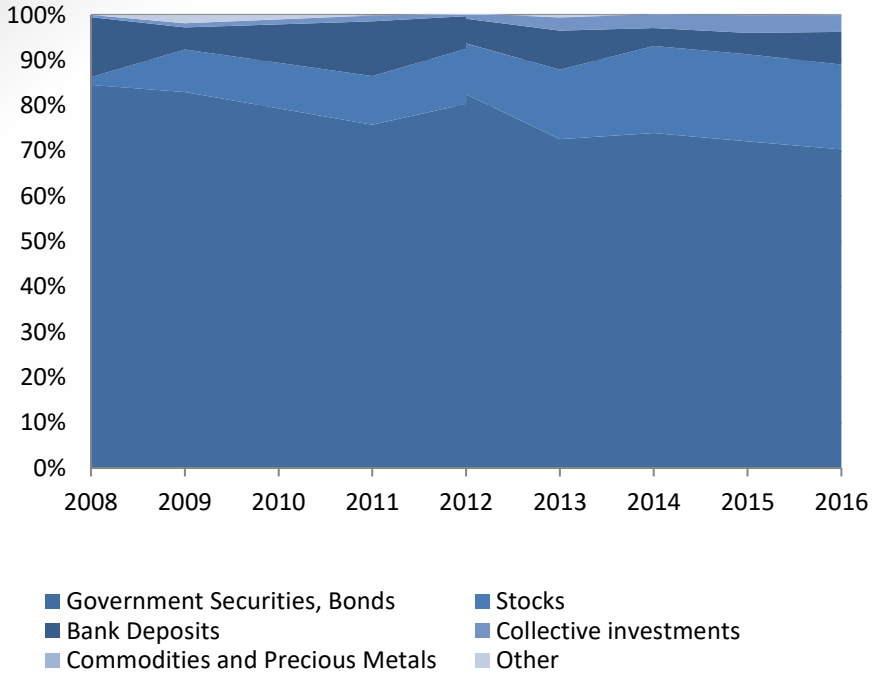
Graph RO I. Mandatory Pension Funds – Cumulative Nominal Performance



Source: Own calculations based on ASF data, 2017 (data as of 31 December 2016)

The portfolio structure of the Romanian pillar II is presented below. According to data, currently about 70% of all investments in pillar II pension funds are bond investments and about 18.7% is invested in equities.

Graph RO II. Portfolio structure of Pillar II mandatory pension funds



Source: Own calculations based on ASF data, 2017 (data as of 31 December 2016)

Nominal as well as real returns of pillar II pension funds in Romania, weighted by AuM, are presented in the summary table RO 8.

Table RO 8. Nominal and Real Returns of Pillar II Pension Funds in Romania								
2008	2009	2010	2011	2012	2013	2014	2015	2016
Nominal return after charges, before inflation and taxes								
6.40%	17.57%	15.04%	3.22%	10.55%	11.48%	8.92%	3.69%	3.76%
8.85%								
Real return after charges and inflation and before taxes								
-1.50%	11.97%	8.94%	-2.58%	7.15%	8.28%	7.52%	4.09%	4.86%
5.32%								

Source: Own elaboration based on ASF data, 2017 (data as of 31 december 2016)

Pillar III – Voluntary private pensions

The eight asset managers offer 10 voluntary pension funds in Romania. AZT and NN are the only providers which offer two voluntary pension funds. Performance of all pension funds shows the same finding as with pillar II mandatory pension funds - there is similarity in voluntary pension funds' investment strategy. Performance results imply also a similarity of pension fund's portfolio structure.

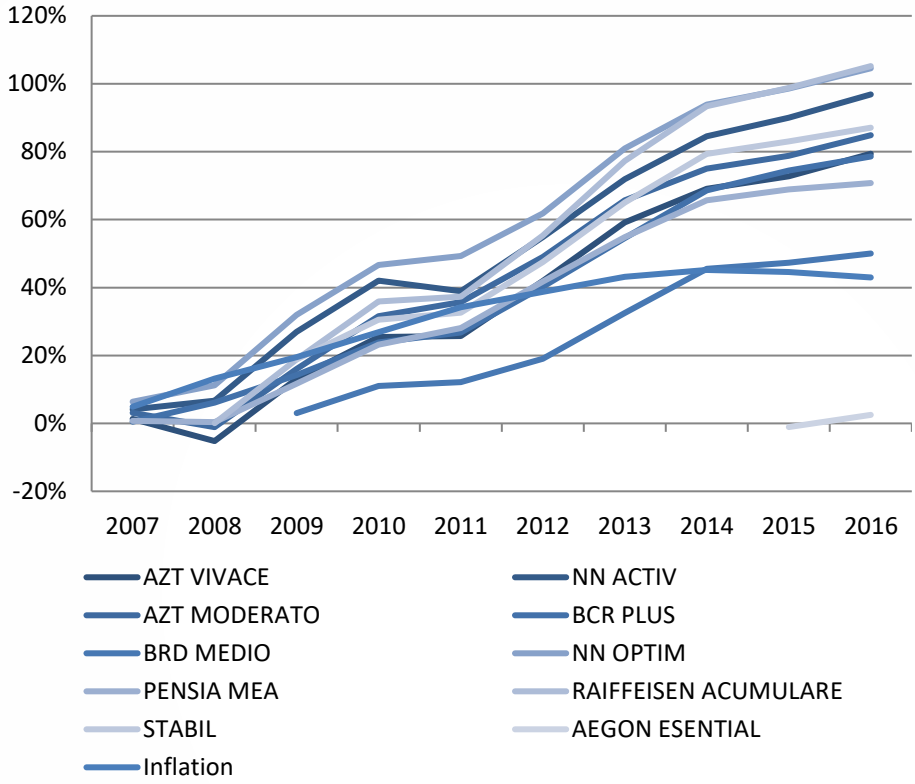
Table RO 9. Pillar III pension vehicles

Risk Profile	Voluntary pension fund	Fund Inception Day	Fund closing date
High	FPF AZT VIVACE	May-07	Open
	FPF NN ACTIV	May-07	Open
Medium	FPF AZT MODERATO	May-07	Open
	FPF BCR PLUS	May-07	Open
	FPF BRD MEDIO	Jul-09	Open
	FPF CONCORDIA MODERAT	Sep-08	Closed February 2013
	FPF EUREKO CONFORT	Feb-09	Closed in June 2015
	FPF NN OPTIM	May-07	Open
	FPF PENSIA MEA	May-07	Open
	FPF RAIFFEISEN ACUMULARE	Jul-08	Open
	FPF STABIL	Apr-09	Open
	FPF AEGON ESENTIAL	May-15	Open
Low	FPF BRD PRIMO	Jul-09	Closed December 2011
	FPF OTP STRATEG	Dec-07	Closed December 2011

Source: Own elaboration based on ASF data, 2017 (data as of 31 december 2016)

All voluntary pension funds' performance on an annual as well as cumulative basis compared to inflation is presented in Graph RO III.

Graph RO III. Voluntary Pension Funds – Cumulative Nominal Performance

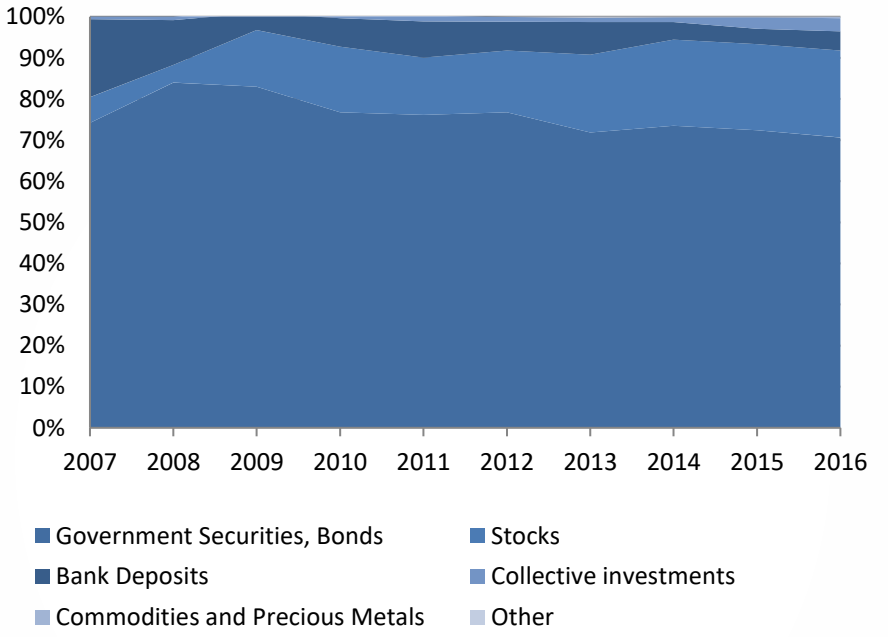


Source: Own calculations based on ASF data, 2017 (data as of 31 December 2016)

Analyzing the portfolio structure of voluntary pension funds based on ASF data, we can conclude that most of the performance is tied to the government securities and bonds asset classes. The second most important asset class (from the portfolio structure point of view) is equities, and the third one is bank deposits. Three other classes have minimal impact on pension fund's performance results.

Portfolio structure of Romanian pillar III voluntary pension funds is presented below. According to the data, currently about 71% of all investments in pillar III pension funds are bond investments and about 21% is invested in stocks with rising portion of collective investment vehicles (UCITS funds). Overall, pillar III portfolio structure is very similar to that of pillar II.

Graph RO IV. Portfolio structure of pillar III voluntary pension funds



Source: Own calculations based on ASF data, 2017 (data as of 31 December 2016)

Nominal as well as real returns of voluntary pension funds in Romania, weighted by AuM, are presented in a summary Table RO 10.

Table RO 10. Nominal and Real Returns of Voluntary Pension Funds in Romania									
2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Nominal return after charges, before inflation and taxes									
1.86%	1.72%	15.49%	11.14%	1.59%	9.96%	11.36%	7.48%	2.55%	2.91%
6.50%									
Real return after charges and inflation and before taxes									
-3.04%	-6.18%	9.89%	5.04%	-4.21%	6.56%	8.16%	6.08%	2.95%	4.01%
2.79%									

Source: Own elaboration based on ASF data, 2017 (data as of 31 december 2016)

Conclusion

Romania's population is rapidly decreasing and ageing, which unless adopting the necessary reforms, will lead to the explosion of the demographic bomb in a few decades. That is why Romania has introduced the private pensions system based on the model tested and recommended by the World Bank in 2007. The multi-pillar private pensions system includes pillar II – mandatory schemes - and pillar III – voluntary schemes.

In the public PAYG pensions system, the state collects contributions from employees and redistributes the money among existing pensioners. Demographics show that this redistribution logic is no longer viable, as contributors' numbers will fall and the number of pensioners is already going up. The exit from this dilemma takes the form of the private pensions system, allowing each active person to save for their own future retirement.

Romanian pillar II is a fully funded system based on personal accounts and on the defined contribution (DC) philosophy. Pillar II is mandatory for all employees aged under 35 years and voluntary (optional) for employees aged 35 to 45. The starting level of contribution was set up at 2% of the participant's total gross income and increases by 0.5 percentage points annually until it reaches 6% of total gross income in 2017.

Mandatory pension funds are managed by their administrators - Pension Management Companies (PMCs). Each PMC is obliged by respective law to administrate and manage just one mandatory pension fund. Currently, there are seven PMCs managing seven mandatory funds on the Romanian pillar II market. The market is dominated by two PMCs (AZT and NN).

Romanian pillar III is also a fully funded system based on personal accounts and on the defined contribution (DC) philosophy. Pillar III represents privately-managed supplementary pensions. This system is opened to all income cohorts. The tax advantageous contribution is limited to 15% of participant's total gross income.

Voluntary pension funds in pillar III are managed by their administrators - Pension Management Companies (PMCs), Life Insurance Companies (LICs) or Asset Management Companies (AMCs). Each administrator is obliged to establish and operate at least one voluntary pension fund. Currently, there are eight providers offering 10 voluntary pension funds. Pillar III market is fairly concentrated, where three dominant players cover almost 90% of the market.

Mandatory as well as voluntary pension funds' investment strategy is strictly regulated. The law imposes percentage limits and restrictions for different asset classes. It must be noted that investment rules in mandatory and voluntary system are very similar. This fact logically causes implications on portfolio structure, thus also on performance of mandatory and voluntary pension funds in Romania. Currently about 70% of all investments in pillar II as well as pillar III pension funds are bond investments (Romanian Government Money market instruments and Bonds) and only about 19% is invested in equities.

Overall, the real return of pension funds in pillar II as well as pillar III are positive and well above the inflation. However, considering the fee structure, pillar II savers are better positioned as the charges are almost 4-times lower than the fees applied in pillar III.

Pension Savings: The Real Return

2017 Edition

Country Case: Slovakia

Introduction

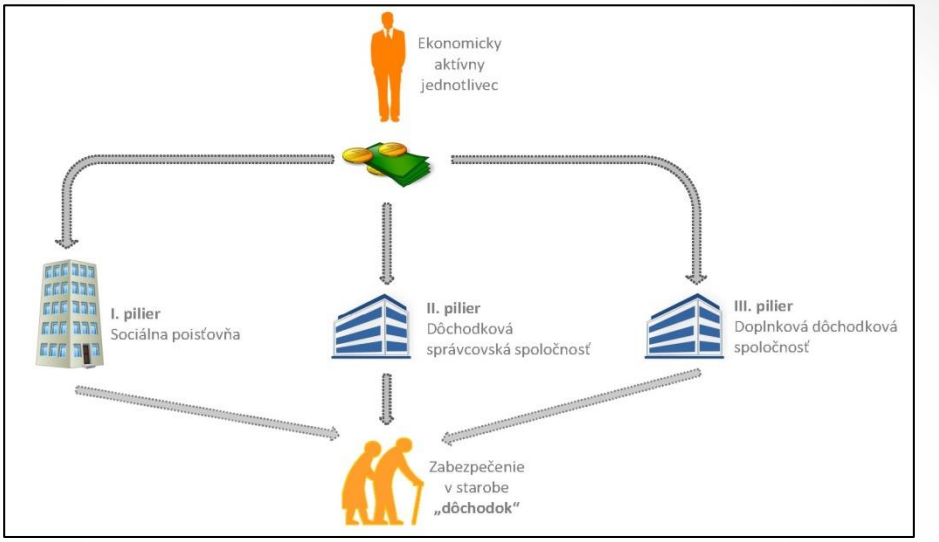
The Slovakian old-age pension system is based on the multi-pillar approach, which consists of three main pillars:

- Pillar I – State pension organised as a mandatory Pay-As-You-Go (PAYG) scheme,
- Pillar II – Funded pension organised as a voluntary funded Defined contribution (DC) based scheme,
- Pillar III – Supplementary pension organised as a voluntary individual pension DC based scheme.

The Slovakian pension reform started in 1996 with the introduction of Pillar III, which at that time (1996 – 2009) was organised as a voluntary pension pillar offering life insurance contracts. Since July 2009, the system was changed to a funded saving scheme and voluntary Pillar III pension funds are now offered to the savers (employees).

Pillar II was introduced at the beginning of 2005 and is known as "1bis pillar", as individual retirement accounts of savers are funded via redirected social security contributions.

Graph SK 1. Multi-pillar pension system in Slovakia



Source: BETTER FINANCE, 2017

Pillar I – State Pensions

Pillar I is a state-organised PAYG pension scheme managed by the state Social Insurance Company. Pensions are funded on an ongoing basis and benefits are calculated based on the number of insured years and paid contributions. The PAYG principle of financing is supplemented by a redistribution, where the lowest income groups benefit from higher replacement ratios and higher income groups, due to the solidarity mechanisms, are confined to lower replacement ratios.

Pillar I is closely connected to the economic activity and income of the citizens. This pillar is financed by contributions of economically active individuals, amounting to 14% (18% if the saver is not in pillar II) of their income base (gross salary). These contributions are directed to the Social Insurance Company, which distributes the allowance to the beneficiaries (current pensioners).

Pillar I is a typical PAYG scheme, however the pillar has many NDC (Notional Defined Contribution) scheme features with a certain income solidarity element. The pension of the insured person depends on three parameters:

1. Insurance period (the number of working years with active contribution),
2. Contribution level (the contribution base of an individual is compared to the average salary in Slovakia),
3. Value of pension unit (this value is annually defined by the Slovak government to mimic the increase in the average salary in Slovakia).

The pension insurance is comprised of two independent, separately funded sub-schemes administered by the Social Insurance Agency:

- old age pension insurance: insurance to secure income in old age and in the event of death,
- disability insurance: insurance in the event of a reduced ability to work due to long-term illness of the insured and in the case of death.

Pension insurance is a mandatory and statutory insurance, and participation in this insurance is a legal obligation for all eligible persons. The Act on Social Insurance also enables voluntary pension insurance.

The basic pension insurance parameters that make up the content of the benefit scheme and determine the conditions to be entitled to these benefits are:

- the general contribution level,
- the insurance period,
- the average personal wage point,
- the pension value and the retirement age.

General contribution level: a sum representing 12 times the average monthly wage in the Slovak Republic established by the Statistical Office of the Slovak Republic for the last calendar year.

Average personal wage point: determined as the ratio of the sum of personal wage points calculated for each calendar year of the reference period and the period of pension insurance in the relevant period. The average personal wage point shall be rounded up to four decimal points.

Value of pension unit: reflects the monetary value of one personal wage point. The pension value is adjusted on the 1st of January each year through indexation. This value is determined as the ratio of the average wage (determined in the third quarter of the previous calendar year) and the average wage (determined in the third quarter of the calendar year, two years preceding the calendar year on which the pension value is calculated). This way the determined pension value is always valid from 1 January to 31 December of the calendar year. The current pension value, used to calculate pension benefits, is the pension value valid at the time of a claim for payment of the pension benefits.

Retirement age - generally it is set at 62 years and valid for both men and women. Whereas the men's retirement age is already set at 62, women will reach the official retirement age of 62 in 2024. In order to increase the sustainability of pillar I pension schemes, starting in 2017 and onward the retirement age will increase for both men and women. The increase of the retirement age will depend on the increase in life expectancy of the whole population. The first increase in retirement age was at the beginning of 2017 and accounted for an additional 76 days, which means that the new retirement age for 2017 is 62 years and 76 days.

Pillar II – Funded pensions

The Slovak pillar II was established as a defined contribution (DC) pension saving scheme in 2005. As of today, the enrolment is fully voluntary for persons over 35 years old (until 1 September 2012 it was a mandatory one) The principle of a funded pension is based on the accumulation of savings during employment and the investment of savings in financial markets via special purpose vehicles - pension funds- which are managed and administrated by Pension Fund Management Companies (PFMCs) who are licensed by the National Bank of Slovakia.

The role of old age pension savings along with old-age social insurance (pillar I) is to ensure income in old age for savers and their survivors in the case of death.

The Pillar II market is fairly concentrated. Each saver can choose from six providers (PFMCs) currently on the Slovakian market. The PFMCs are private joint stock companies with a minimum capital requirement of € 10 million, established in the territory of the Slovak Republic. Their exclusive business is the creation and administration of pension funds. As a further requirement, they have to attain at least 50,000 members within a period of 18 months from the establishment of the pension fund.

According to the Act on the Old-Age Pension Saving Scheme No. 43/2004 (paragraph 72, point 4), each PFMC is obliged to operate at least two pension funds. We can divide these obligatory pension funds into two main groups:

1. Bond guaranteed pension fund (Guaranteed scheme);
2. Equity non-guaranteed pension fund (Non-guaranteed scheme).

Since the legislative reform in 2012[197], and depending on their business model, PFMCs are free to operate additional pension funds. Before 2013, each PFMC had to operate three (four in 2012) obligatory pension funds:

1. Bond (Conservative) pension fund (since March 2005)
2. Mixed (Balanced) pension fund (since March 2005)
3. Equity (Growth) pension fund (since March 2005)
4. Index pension fund (since April 2012)

With this legislative reform, effective since May 2013, Mixed and Index pension funds became optional, and some of the PFMCs merged these pension funds with obligatory Equity non-guaranteed pension funds. It has to be underlined, that the first three categories of pension funds are, from the point of view of asset management, actively managed pension funds.

[197] see point 63 of the Act no. 252/2012 that supplements other Acts including the Act on Old-Age Pension Saving Scheme, effective since 01.09.2012.

Index pension funds are the only funds to be managed entirely passively. However, changes in the fee policy (strictly regulated) forced providers to change their investment strategy and to switch to passively managed funds, using mostly ETFs as the main financial instruments.

PFMCs are subject to a variety of regulations. The old age pension savings Act defines the range of permissible investment instruments and sets maximum limits for portfolio allocation (quantitative limits). Investment procedures and valuation of investments (daily at market prices) are also regulated. Thus, each category of pension funds has its own investment strategy, general or special quantitative limits as well as its own conditions of operating. PFMCs and managed pension funds are supervised by the National Bank of Slovakia.

Pillar II, as a voluntary DC scheme, allows savers to enter the system at any point before the age of 35. In general, pension fund members (savers of pillar II) are free to choose one or two of the pension funds mentioned which are provided by the same PFMC.

Each saver has an Individual Retirement Account (IRA). Her / His contributions (savings) are redirected from the Social Insurance Company to the chosen PFMC on her / his IRA at a rate of 4% of gross salary. However, since 2017[198] the contributions have started to increase from 4% to 4.25% and will continue to grow until they reach the final level of 6% in 2024.

Having the possibility to save in one or two pension funds at the same time, it is fully up to a saver how much of his or her savings would be invested via one or another pension fund. The saver can invest, for example, 70% in a Bond guaranteed pension fund and another part (30%) in an Index non-guaranteed one. There are no fees or charges to change this allocation ratio or switch pension funds managed by the same PFMC, even on a daily basis. Switching providers (PFMCs) is possible at no cost if the change is made after one year; otherwise a fee of €16 is applied.

[198] see point 8 of the Act no. 252/2012 that supplements other Acts including the Act on Old-Age Pension Saving Scheme, effective since 01.09.2012.

A reform of a "pay-out phase" was introduced in 2015. It stipulates that the following types of pension products are allowed for a pay-out phase:

1. single annuity (for most cases) with guaranteed payment period of 84 months,
2. single indexed annuity,
3. single annuity with survivorship benefits (for up to 2 years),
4. programmed withdrawal (phased withdrawal),
5. perpetuity (withdrawal of only annual gains),

Products 1, 2 and 3 are provided by insurance companies, products 4 and 5 by PFMCs.

Pillar III – Supplementary pensions

The supplementary pension is a voluntary funded DC-based pension saving scheme for which the funds of the participants are administered by Supplementary Pension Fund Management Companies (SPFMCs). The SPFMCs are private joint stock companies, established in Slovak territory. SPFMCs and their supplementary pension funds are supervised and regulated by the National Bank of Slovakia.

The purpose of supplementary pension saving is to allow participants to obtain supplementary pension income in old age and the whole pillar is mostly oriented to employers and their employees. However, based on the data from the Statistical office of Slovak republic (2017[199]), the coverage ratio is rather low (27% in 2016) and has been declining steadily since 2006. Last two years (2015 and 2016) we observe slight pick-up in number of members.

Currently there are four providers (SPFMCs) operating on the market, which could be considered "concentrated". Each SPFMC is obliged by law to operate at least one contributory and one "pay-out" supplementary pension fund. The legislation does not determine specific types of contributory pension funds. We can, however, divide all existing

[199] http://www.statistics.sk/pls/elisw/objekt.send?uic=779&m_so=82

contributory pension funds into 3 main groups according to their portfolio structures:

- Conservative supplementary pension funds (no equity investments),
- Balanced supplementary pension funds (small proportion of equity investments),
- Growth supplementary pension funds (significant proportion of equity investments).

There are no specific investment restrictions regarding asset classes in supplementary pension funds, but there are some general quantitative limits to avoid the concentration risk in one fund.

The following benefits are paid from supplementary pension savings upon the completion of the savings period:

- supplementary old age pensions in the form of lifelong or temporary supplementary annuities,
- supplementary pensions in the form programmed withdrawals,
- lump-sum settlements,
- redundancy payments.

Pension Vehicles

Pillar II – Funded pensions

There are six providers - Pension Asset Management Companies (PFMCs) - operating on the market. The two largest in terms of assets under management, Allianz Slovenska and AXA, represent nearly 60% of the market. One of the providers (ING) changed its name to NN in 2015 in a rebranding effort. More details on the market share of different providers are presented in the table below.

Table SK 1. Pension Asset Management Companies market share (pillar II)		
Pension Fund Management Company	**Assets under management *(in millions €)***	**Market Share based on AuM[200]**
AEGON	631.39	9.10%
Allianz – Slovenska	2,223.07	32.03%
AXA	1,810.83	26.09%
DSS Postovej banky	377.9	5.44%
NN (ING before 2015)	738.78	10.64%
VUB - Generali	1,159.67	16.71%
TOTAL	**6,941.64**	**100.00%**

Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016)

The current Slovak legislation mandates each PFMC to operate at least two pension funds. Obligatory pension funds differ in their investment strategy and are divided into two groups according to the investment risk they carry:

a) Guaranteed schemes – Bond guaranteed pension funds,
b) Non-guaranteed schemes - Equity non-guaranteed pension funds.

After the legislative reform in April 2013, Mixed and Index pension funds became optional pension funds, and some of PFMCs merged them with obligatory Equity non-guaranteed pension funds. The assets under management and market share of the respective groups of voluntary pension funds are presented in the table below.

[200] Assets under Management.

Table SK 2. Pillar II Pension vehicles market share			
Scheme	**Type of voluntary pension fund**	**Assets under management *(in millions €)***	**Market share based on AuM**
Guaranteed PFs	Bond guaranteed pension funds (6) - *obligatory*	5,743.81	82.74%
Nonguaranteed PFs	Mixed non-guaranteed pension funds (2) - *optional*	63.8	0.92%
	Equity non-guaranteed pension funds (6) - *obligatory*	756.25	10.89%
	Index non-guaranteed pension funds (5) - *optional*	377.77	5.44%
TOTAL	**19 Pension funds**	**6,941.64**	**100.00%**

Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016)

In 2016, one mixed pension fund managed by DSS Postova Banka merged with the equity pension fund due to a decreasing interest in this fund on the part of savers and the possibility to allocate savings to two pension funds at the same time. The increase in assets under management was mainly caused by the stabilization of the market and the higher returns of index pension funds.

However, the structure of investments does not match the age profile of Slovak savers and thus increases the risk of lower replacement ratios for most of the savers in future. Following the governmental intervention in 2013, the number of savers in equity pension funds has dropped significantly. Currently, almost 83%[201] of all savings in pillar II are managed in obligatory Bond guaranteed pension funds that do not invest in equities.

[201] Based on the data from ManazerUspor.sk, 2017 (http://www.manazeruspor.sk/druhy-pilier/trhovy-podiel/dochodkove-fondy).

This situation could cause more problems and increase political risk in the future since many savers still believe that they save in equity pension funds.

The asset allocation of pillar II pension funds is legislatively regulated, with general quantitative investment limits imposed on all pension funds, for example:

- max. 3% of AuM into one financial instrument (does not apply to bond investments or in case of passively managed pension funds),
- max. 10% of AuM into one UCITS fund,
- max. 15% of the whole pension fund portfolio with one issuer (does not apply to bond investments or in case of passive managed pension funds),
- bond investments must have investment grade rating (does not apply in case of passively managed pension funds).

Members can choose two main types of obligatory and two types of optional voluntary pension funds in pillar II.

Obligatory - Bond guaranteed pension funds are actively managed pension funds that are obliged to invest 100% of the assets into bonds, money market instruments, deposits, investment funds with assets to be invested in the above-mentioned securities and deposits, and other similar assets. Bond guaranteed pension funds are not allowed to invest in equities or 'immovables' or investment funds containing either. The conservative strategy focuses on bonds with as main objective to preserve the capital and achieve moderate growth primarily on a shorter horizon. Bond guaranteed pension funds are obliged to hedge at least 95% of the whole portfolio against currency exposure.

Obligatory - Equity non-guaranteed pension funds are actively managed pension funds, investing in different types of assets from the objective under quantitative limits:

- up to 80% of the assets of the funds can be invested in equities, equity funds and other instruments similar to equity,

- at least 20% of the portfolio must be hedged against currency risks,
- max. 20% of the whole portfolio can be invested in precious metals.

Optional - Mixed non-guaranteed pension funds are actively managed pension funds that invest in different types of assets from the objective under general quantitative limits. There are no other specific limitations.

Optional - Index non-guaranteed pension funds introduced in April 2012, are the only passively managed pension funds in Slovak pillar II. There are no general or specific quantitative limits, because of the nature of the investing strategy. Slovak Index non-guaranteed pension funds copy selected and respective stock market benchmarks (MSCI World, Eurostoxx50, ACWI, MSCI Euro).

Pillar III – Supplementary pensions

There are four providers – Supplementary Pension Fund Management Companies (SPFMCs) operating on the market. Based on their Assets under Management, the two biggest are NN Tatry – Sympatia (changed its name from ING Tatry – Sympatia in 2015) and DDS Tatra banky, represent nearly 70% of the whole market.

DDS Tatra banky introduced TDFs (target date funds) in 2015, with the aim of providing age specific investment strategies for its members saving for retirement in Pillar III pension vehicles.

Table SK 3. Pillar III Supplementary Pension Companies market share

Supplementary Pension Company	Assets under management (in millions €)	Market share based on AuM
DDS Tatra banky	522.36	30.56%
AXA	235.75	13.79%
NN Tatry – Sympatia (ING before 2015)	657.42	38.46%
STABILITA	293.65	17.18%
TOTAL	**1,709.18**	**100.00%**

Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016)

Under the regulation, each SPFMC must operate at least two types of pension vehicles for supplementary pensions (pillar III):

1. a contributory pension fund,
2. a "pay-out" pension fund.

The legislation does not determine specific types of contributory pension funds. However, we can divide all existing contributory pension funds into three main groups according to the portfolio structure:

- Conservative supplementary pension funds (no equity investments),
- Balanced supplementary pension funds (small proportion of equity investments),
- Growth supplementary pension funds (significant proportion of equity investments).

For supplementary pension funds, there are no special investment restrictions regarding asset classes, but there are some general quantitative limits:

- max. 5% of AuM in one financial instrument,
- max. 30% of AuM in securities and money market financial instruments from one issuer (does not apply to instruments secured by a member state),
- max. 35% of AuM in securities and money market financial instruments secured by a member state, the EU, the ECB, the IMF or the World bank,
- max. 20% of AuM in one standard mutual fund (UCITs compliant),
- max. 10% of AuM in one special mutual fund,
- max. 40% of AuM in mutual funds.

Table SK 4. Supplementary Pension vehicles market share			
Type	**Supplementary pension vehicles**	**Assets under management *(in millions €)***	**Market share based on AuM**
Contributory	Conservative supplementary pension funds (3)	164.94	9.65%
	Balanced supplementary pension funds (4)	1271.32	74.38%
	Growth supplementary pension funds (4)	208.85	12.22%
PAY-OUT	Pay-out supplementary pension funds (4)	64.07	3.75%
TOTAL	**17 Pension funds**	**1,709.18**	**100.00%**

Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016)

In general, Pillar III schemes cover only 30% of economically active individuals, while only 70% of them actively contribute to the scheme. At the same time, most of the retirement savings are directed into conservative or balanced supplementary pension funds, which apply a rather conservative investment strategy with no long-term investments.

Charges

Pillar II – Funded pension

Charges are highly regulated and capped in Pillar II schemes, with providers not allowed to increase charges above the level set by the Old Age Pension Saving Act.

Pension Fund Management Companies (both obligatory and optional) are allowed to apply following types of charges:

- Management fee (as percentage of Net Asset Value (NAV) in respective pension funds),

- Success fee (as percentage of new highs reached in the performance of respective pension funds based on the High Water Mark[202] 'HWM' principle),
- Administration fee for the administration of Personal pension accounts (as a percentage of new contributions),
- Depository fee (as a percentage of NAV in respective pension funds),
- Other charges (mostly trading charges).

It has to be mentioned that on top of these charges, each Slovakian saver investing in pillar II also has to pay an administration fee to the Social Insurance Company that administrates the central collection system and central information as well as the offering system for annuities. The Social Insurance Company collects the social security contributions and transfers part of savers´ contributions to their personal pension accounts managed by the Pension Asset Management Company.

The following table compares the charges applied in pillar II.

[202] Slovak legislation defines the HWM method for calculating the success fee as a comparison of new highs of a respective pension fund to its historical performance achieved 3 years ago. If today´s closing price is higher than historical highs achieved 3 years ago, the provider has the right to charge a 10% success fee on the difference between today's pension unit price and the highest historical price. If the difference is negative no success fee can be charged.

Table SK 5. Pillar II Pension Funds´ Fees		
Fee type	**Since 2005**	**as of 31 December 2016**
Management fee (for PFMC)	max 0,8% p.a., NAV	max 0,3% p.a., NAV *(since 1 April 2012)*
Success Fee (for PFMC)	max 5,6%, HWM	max 10%, HWM *(since 1 July 2013)*
Administration of Personal pension account (for PFMC)	1% of new contribution	1% of new contribution
Administration fee (for Social Insurance Agency)	0,50% of new contribution	0,25% of new contribution *(since 1 January 2013)*

Source: BETTER FINANCE research based on Act on the Old-Age Pension Saving Scheme, data as of 31 December 2016

Pillar III – Supplementary pensions

Charges in Pillar III are capped by the legislation – Act on the Supplementary Pension Scheme No. 650/2004 (paragraphs 35a, 35b and 35c of the Act). Supplementary Pension Fund Management Companies are currently (since 1 January 2014) allowed to apply the following types of charges:

- Management fee (as percentage of NAV in respective supplementary pension funds),
- Success fee (as percentage of new highs reached in the performance of respective supplementary pension funds based on the High Water Mark principle),
- Depository fee (as a percentage of NAV in respective pension funds),
- Other charges (Switching fee).

The following table compares charges applied in pillar III.

Table SK 6. Supplementary Pension Funds´ Fees		
	Since 2009	**Since 1 January 2014**
Management Fee *1. contributory SPF*	max 2,5% NAV (2010) => max 1,98% (2019+)	max 1,2% NAV (2016 = 1,6% and each following year -0,1%)
2. payout SPF	max 0,996% NAV	max 0,6% NAV (2016 = 0,80% and each following year -0,05%)
Success Fee *1. contributory SPF*	max 10% (2010) => max 20% (2020+); HWM principle	max 10%; HWM principle
2. payout SPF		0%
Switching Fee	0% more than 3 years	0% more than 1 year / max 5% less than 1 year
Early Exit Fee	20% (5% SPC + 15% SPF)	0%

Source: BETTER FINANCE research based on the Act on the Supplementary Pension Scheme, data as of 31 December 2016

Taxation

The Act on Income Tax recognizes two different income tax rates in Slovakia that apply to pension saving schemes.

The personal income tax rate has been set at 19% since 2005. Since 2013, there is higher tax rate of 25% for higher earners, whose monthly income exceeds €2,918.52 (around 4% of the working population in 2016).

The corporate income tax rate for 2016 was 22%.

Pillar II – Funded pensions

Pillar II should be viewed as a 1bis pension pillar that is basically a derivate of the basic old-age security scheme since a part (4%) of the overall (18%) old-age social insurance contributions are diverted from a PAYG pillar into a funded DC scheme. Consequently pillar II taxation is similar to the PAYG

pillar, meaning that an Exempt Exempt-Exempt (EEE) taxation regime is applied.

Taxation of contributions

Contributions paid to pillar II are tax deductible. However, a saver can add voluntary contributions to the 4% contributions redirected from the PAYG pillar. In this case, an additional 2% of contributions are personal income tax base deductible. This provision is valid until 2016. Additional contributions made above the "4% + 2%" rule are subject to a 19% personal income tax.

Taxation of the Fund

Fund returns are not subject to Slovak income taxes at the fund level.

Taxation of pay-out phase income

Income generated via pillar II pay-out phase products (annuity, perpetuity, programmed withdrawal) are not subject to personal income tax. In case of inheritance, the amount the successor receives as inherited (accumulated) savings is not subject to personal income tax.

Pillar III – Supplementary pensions

Taxation of pillar III differs significantly from pillar II taxation. There are different taxation treatments of contributions as well as the pay-out phase. It is rather difficult to generalize the regime; however the Exempt-Exempt-Taxed (EET) regime can be used as reference with several exceptions and specifications.

Taxation of contributions

When considering taxation treatment of contributions, a slightly different regime is used for savers´ (employees´) contributions and employer´s contributions.

Generally, both contributions are income tax deductible; however, for employees (savers), there is a ceiling of €180 per year. This means that those monthly contributions to the pillar III supplementary pension fund up

to €15 are income tax base deductible. Above this amount, the contributions made to the individual savings account are subject to personal income tax. Taking into account that the average salary in Slovakia (in 2016) is around €912, employee contributions up to 1.64% of the gross average salary can be deducted from the personal income tax base.

Employer contributions are treated in a slightly different way. Contributions are tied to the monthly salary of employees. Employer´s contributions up to 6% of the monthly salary are treated as tax expenses. Therefore employers have an incentive to contribute up to this tax favourable ceiling on behalf of employees. Taking into account the average salary in Slovakia, contributions up to €54.72 per employee per month are considered as tax expenses for the contributing employer in 2016. Taking into account the poor performance of supplementary pension funds and relatively high level of charges, the favourable tax treatment of employer´s contributions are the key drivers for the admission of new members. At the same time, this favourable treatment of employers' contributions paid on behalf of employees exists exclusively for Pillar III and creates an administrative monopoly in the form of a preferred supplementary retirement product in Slovakia.

Taxation of fund returns

Fund returns are exempt from income taxes at the fund level.

Taxation of the pay-out phase

There are three different types of products used for the pillar III pay-out phase (Act on Supplementary Pension Savings):

1) Lump-sum – paid out through SPFMC and limited to 50% of accumulated savings;
2) Annuities – paid out through an insurance company in the form of a single annuity;
3) Phased (Programmed) withdrawal – paid out through SPFMC for at least 5 years.

There are 3 general conditions, of which at least one should be met when entering the pay-out phase in order to achieve a more favourable tax treatment of the income stream from pillar III savings. They consist of a member´s age (at least 62 years old), entitlement to state retirement pension benefits or entitlement to state early retirement pension benefits.

The tax treatment of the pay-out phase income stream allows for savers to benefit from a deduction to the personal income tax base. The Act on Income Tax stipulates that the deduction from the income tax base will be applied to the income stream from pillar III benefits and life insurance contracts. The paid contributions (pillar III) or paid premiums (life insurance contract) will be deducted from the personal income tax base. The Act on Income Tax also defines the income tax base adjustments in case of paid monthly benefits according to the formulas. In the case of a temporary annuity, the income tax base is calculated as the positive balance between the sum of already received benefits and the sum of paid contributions. In the case of a single annuity, the income tax base is calculated as paid monthly benefits and total paid contributions (or premiums) divided by the number of remaining years (based on the estimated life expectancy) and the age of the taxpayer (beneficiary) at the moment of the first paid benefits. Therefore, we can conclude that the income tax treatment of the pay-out phase is in fact a deferred taxation of investment returns applied, not to the supplementary pension fund, but directly to the saver during the pay-out phase.

Pension Returns

Pillar II – Funded pensions

The six asset managers offer a total of 20 pension funds in Slovakia (see table below). These pension funds are divided into 2 main groups:

1. obligatory pension funds
   a) bond guaranteed pension funds (6 offered)
   b) equity non-guaranteed pension funds (6 offered)

2. optional pension funds
   a) mixed non-guaranteed pension funds (3 offered)
   b) index non-guaranteed pension funds (5 offered)

Groups a), b) and c) were l made available on the market since the very beginning, at the onset of pillar II. Index non-guaranteed pension funds (only passively managed pension funds) were launched in 2012.

Table SK 7. Pension vehicles in pillar II

Pension vehicle	Fund Name	Fund Inception Day
Bond guaranteed pension funds (obligatory)	AEGON d.s.s. – BGPF (Solid)	*22-Mar-05*
	Allianz - Slovenska d.s.s. – BGPF (Garant)	*22-Mar-05*
	AXA d.s.s. – BGPF (Dlhopisovy)	*22-Mar-05*
	DSS Postovej banky d.s.s. – BGPF (Stabilita)	*22-Mar-05*
	NN d.s.s. – BGPF (Tradícia)	*22-Mar-05*
	VUB Generali d.s.s. – BGPF (Klasik)	*22-Mar-05*
Mixed nonguaranteed pension funds (optional)	*DSS Postovej banky d.s.s. – MNGPF (Benefit) – merged with Equity pension fund in 2016*	*22-Mar-05*
	NN d.s.s. – MNGPF (Harmónia)	*22-Mar-05*
	VUB Generali d.s.s. – MNGPF (Mix)	*22-Mar-05*
Equity nonguaranteed pension funds (obligatory)	AEGON d.s.s. – ENGPF (Vital)	*22-Mar-05*
	Allianz - Slovenska d.s.s. – ENGPF (Progres)	*22-Mar-05*
	AXA d.s.s. – ENGPF (Akciovy)	*22-Mar-05*
	DSS Postovej banky d.s.s. – ENGPF (Prosperita)	*22-Mar-05*
	NN d.s.s. – ENGPF (Dynamika)	*22-Mar-05*
	VUB Generali d.s.s. – ENGPF (Profit)	*22-Mar-05*
Index nonguaranteed pension funds (optional)	AEGON d.s.s. – INGPF (Index)	*02-Apr-12*
	AXA d.s.s. – INGPF (Indexovy)	*02-Apr-12*
	DSS Postovej banky d.s.s. – INGPF (Perspektiva)	*02-Apr-12*
	NN d.s.s. – INGPF (Index)	*02-Apr-12*
	VUB Generali d.s.s. – INGPF (Index)	*02-Apr-12*

Source: BETTER FINANCE elaboration based on www.manazeruspor.sk data, 2017

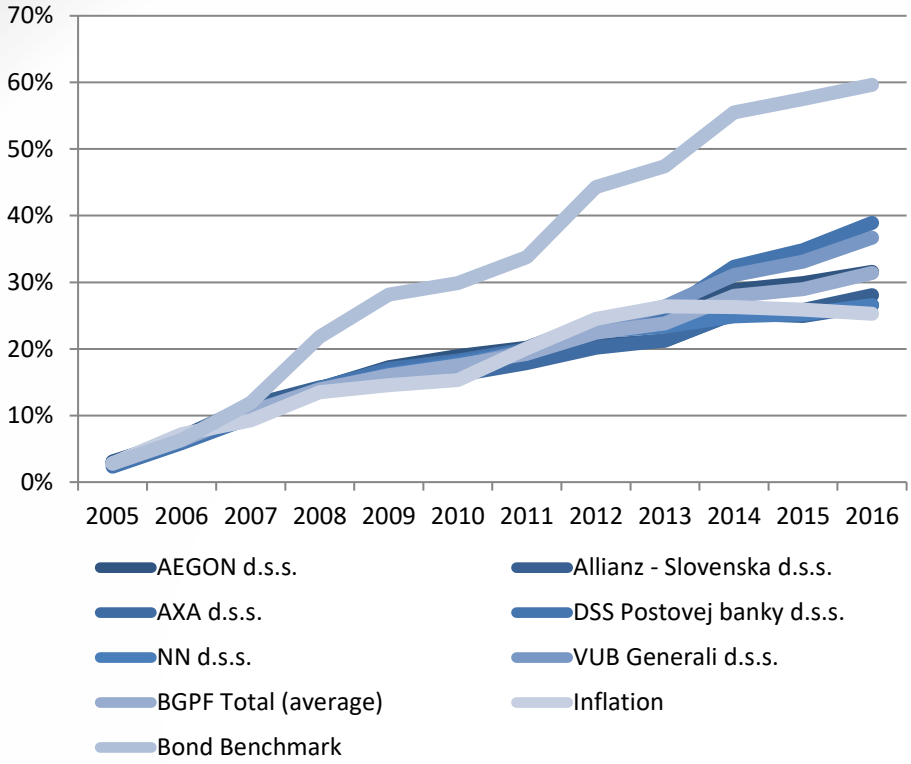
The performance (returns and respective volatility) differs for all four types of pension funds. This is because of the different portfolio structures and investment strategies.

Bond guaranteed pension funds do not invest in equity investments. Mixed non-guaranteed pension funds invest a small part in equity investments (currently less than 40% of AuM on average) and equity non-guaranteed pension funds invest a higher proportion in equity investments (currently more than 50% of AuM in average). Optional Index non-guaranteed pension funds have the highest level of equity investments (nearly 100% of AuM), because of their entirely passive investment strategy focusing on the replication of a benchmark (various equity market indexes) performance.

The performance of Bond Guaranteed Pension Funds on a cumulative basis compared to their respective benchmarks[203] and inflation is shown in graphs below.

[203] There is no official benchmark in Slovakia for pension funds. The benchmarks have been created by the authors and can be seen on the website www.manazeruspor.sk.

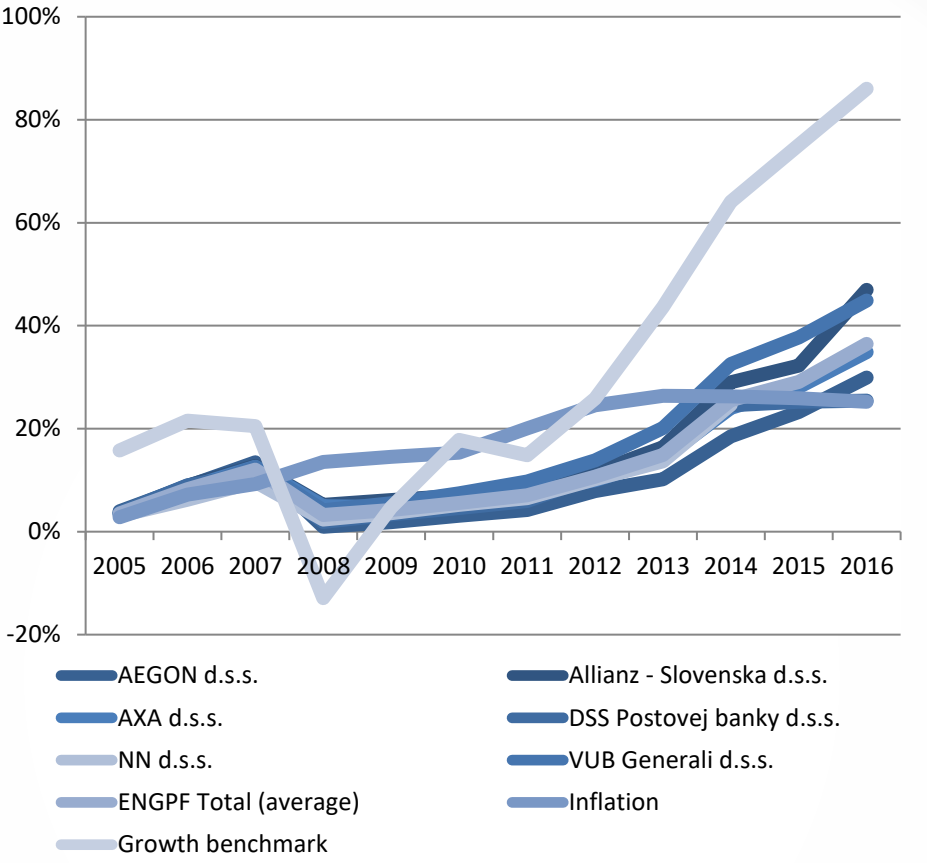
Graph SK I. Obligatory Bond Guaranteed Pension Fund – Cumulative Performance



Source: BETTER FINANCE calculations based on *www.manazeruspor.sk* data, 2017 (data as of 31 December 2016). Bond benchmark data adapted from *www.manazeruspor.sk*

The performance of Equity Non-guaranteed Pension Funds on a cumulative basis compared to their respective benchmarks and inflation is shown in the graphs below.

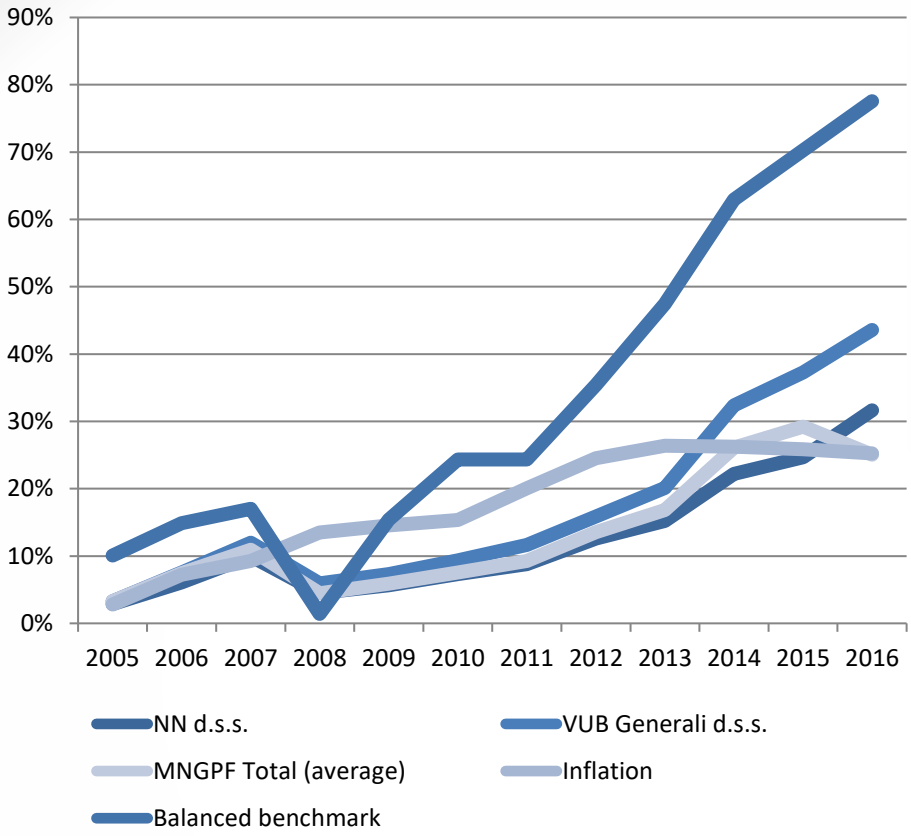
Graph SK II. Obligatory Equity Non-Guaranteed Pension Fund – Cumulative Performance



Source: BETTER FINANCE calculations based on *www.manazeruspor.sk* data, 2017 (data as of 31 December 2016). Bond benchmark data adapted from *www.manazeruspor.sk*

The performance of Optional Mixed Non-guaranteed Pension Funds on an annual as well as cumulative basis compared to their respective benchmarks and inflation is presented in graphs below.

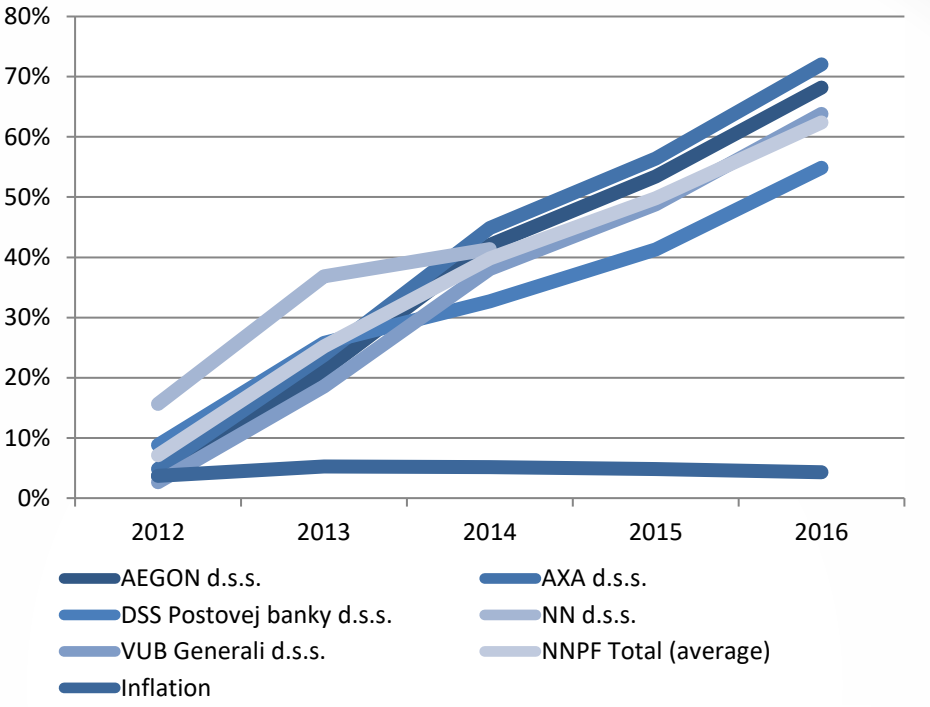
Graph SK III. Optional Mixed Non-guaranteed Pension Fund – Cumulative Performance



Source: BETTER FINANCE calculations based on *www.manazeruspor.sk* data, 2017 (data as of 31 December 2016). Bond benchmark data adapted from *www.manazeruspor.sk*

Performance of Optional Index Non-guaranteed Pension Funds on an annual as well as cumulative basis compared to inflation is shown in the graphs below.

Graph SK IV. Optional Index Nonguaranteed Pension Fund – Cumulative Performance



Source: BETTER FINANCE calculations based on *www.manazeruspor.sk* data, 2017 (data as of 31 December 2016).

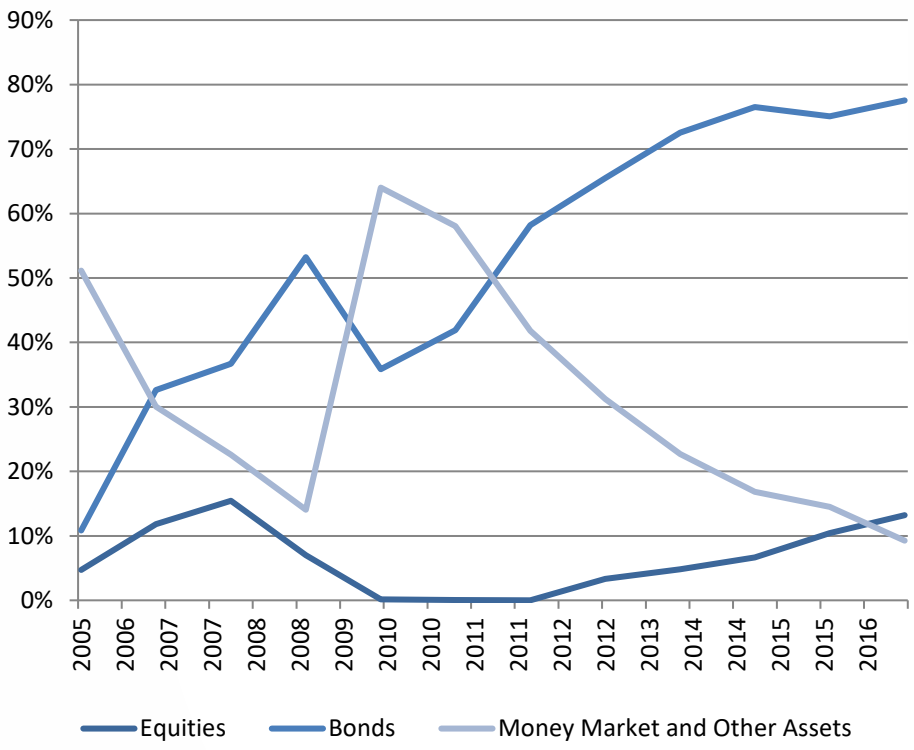
It should be noted that the last graph above does not compare the performance of pension funds with a benchmark. The first reason is that, according to the database from manazeruspor.sk, each index pension fund in pillar II is tracking its respective benchmark very well. The second reason is that each index pension fund has selected a different benchmark:

- ING – Eurostoxx50,
- DSS Postovej Banky – MSCI Euro,
- VUB Generali – ACWI (All Country World Index),
- AXA and AEGON – MSCI World.

The portfolio structure of pillar II pension funds according to classes (bonds, equities, money market instruments) is presented in the graph below.

According to our analysis, currently about 75% of all investments in pillar II pension funds are bond investments. On the other hand, only 6.66% of all investments are equity investments.

Graph SK V. Portfolio structure of pillar II funds



Source: BETTER FINANCE calculations based on *www.manazeruspor.sk* data, 2017 (data as of 31 December 2016)

Nominal as well as real returns of pillar II pension funds in Slovakia weighted by AuM are presented in a summary table below.

Table SK 8. Nominal and Real Returns of pillar II Pension Funds in Slovakia						
2005		3.42%			0.62%	
2006		4.54%			0.24%	
2007		3.67%			1.77%	
2008	**Nominal return after charges, before inflation and taxes**	-6.65%	**1.69%**	**Real return after charges and inflation and before taxes**	-10.55%	**-0.24%**
2009		0.84%			-0.06%	
2010		1.26%			0.56%	
2011		1.48%			-2.62%	
2012		3.03%			-0.67%	
2013		1.34%			-0.16%	
2014		4.03%			4.13%	
2015		1.04%			1.34%	
2016		2.82%			3.32%	

Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016)

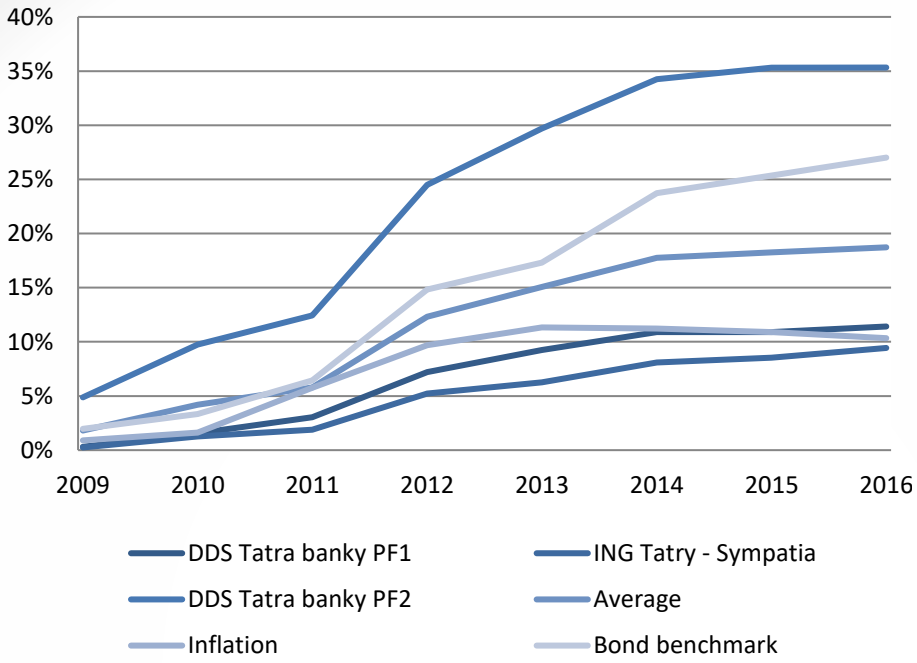
Negative real returns between the years 2008 and 2013 were caused by inappropriate legislative changes that came into effect in July 2009 following the stock market turmoil. These changes forced portfolio managers to sell off all equities and hold cash in portfolios (see Graph SK V on Portfolio Structure of Pillar II pension funds).

Pillar III – Supplementary pensions

Supplementary pension funds differ in strategy and also in a portfolio structure. Conservative pension funds do not invest in equity investments. Balanced pension funds invest a small proportion in equity investments (currently less than 20% of AuM on average) and growth pension funds invest higher proportions in equity investments (currently more than 40% of AuM on average).

The performance of Supplementary Conservative pension funds on a cumulative basis compared to their respective benchmarks and inflation is shown in the graphs below.

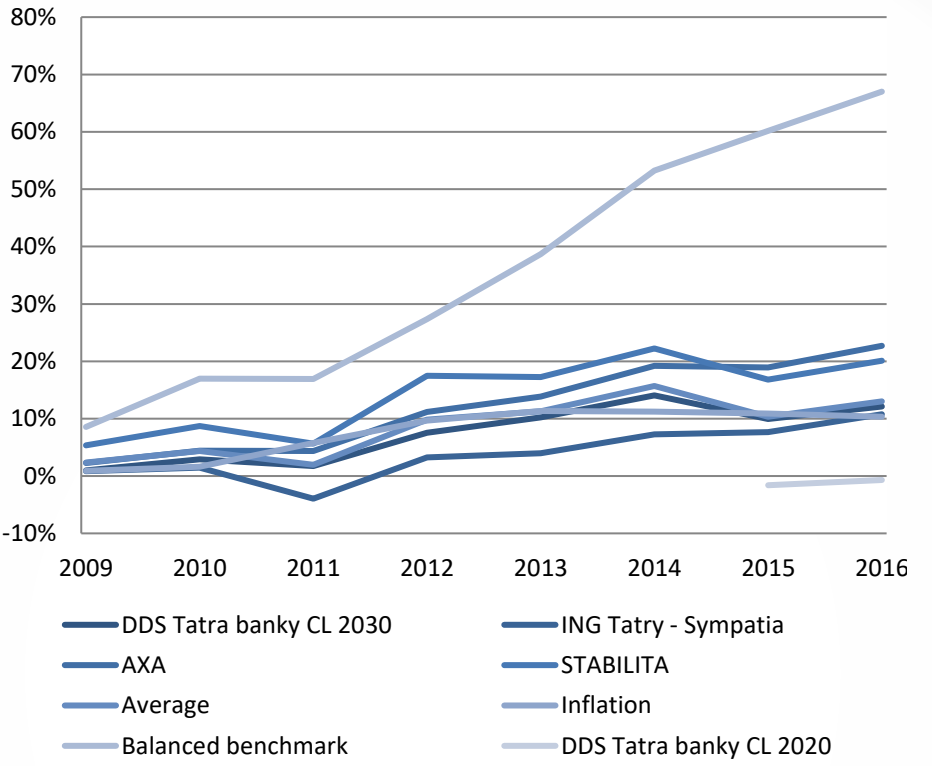
Graph SK VI. Supplementary Conservative pension funds - Cumulative Performance



Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016). Bond benchmark data adopted from the www.manazeruspor.sk

The performance of Supplementary Balanced pension funds on a cumulative basis compared to their respective benchmarks and inflation is shown in the graphs below.

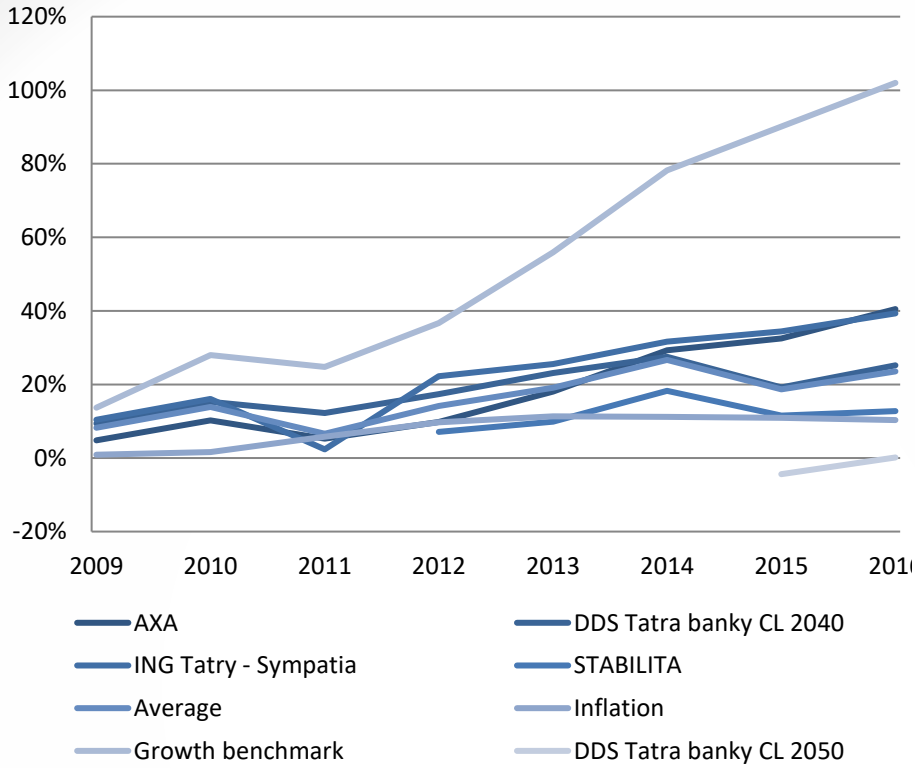
Graph SK VII. Supplementary Balanced pension funds - Cumulative Performance



Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016). Balanced benchmark data adopted from the www.manazeruspor.sk

The performance of Supplementary Growth pensions on a cumulative basis compared to their respective benchmarks and inflation is shown in the graphs below.

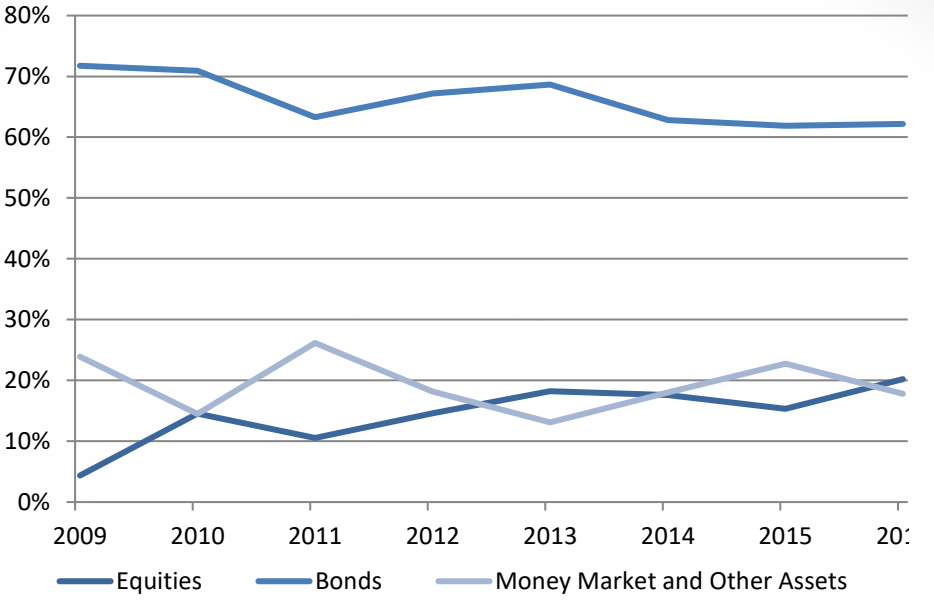
Graph SK VIII. Supplementary Growth pension funds - Cumulative Performance



Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016). Balanced benchmark data adopted from the www.manazeruspor.sk

The portfolio structure of pillar III is presented in the graph below. According to this graph, currently more than 60% (less than in pillar II) of all investments in pillar III pension funds are bond investments. On the other hand, only 17.61% (more than in pillar II) of all investments are equity investments.

Graph IX. Portfolio structure of pillar III pension funds



Source: BETTER FINANCE calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016).

Nominal as well as real returns of supplementary pension funds in Slovakia weighted by AuM, are presented in a summary table below.

Table SK 9. Nominal and Real Returns of Supplementary Pension Funds in Slovakia

2009	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***
Nominal return after charges, before inflation and taxes							
2.25%	1.88%	-2.78%	7.37%	1.56%	3.69%	-1.68%	2.36%
1,79%							
Real return after charges and inflation and before taxes							
1.35%	1.18%	-6.88%	3.67%	0.06%	3.79%	-1.38%	2.86%
0,53%							

Source: Own calculations based on www.manazeruspor.sk data, 2017 (data as of 31 December 2016)

Compared to Pillar II pension funds, supplementary pension funds have achieved lower real returns even when considering the unfavourable structure of savings allocated in Pillar II. Pillar III savers suffer from high charges and a rather poor performance of pension funds.

Conclusion

The Slovak multi-pillar pension system is not really favourable for savers. Pillar II suffers from constant changes causing significant political risk - not only from diverging political opinions on the pension system but also as a consequence of changes in private pension schemes in neighbouring countries (Poland, Hungary, Czech republic) who effectively diminished (or even destroyed) pillar II schemes in favour of state PAYG schemes.

Even though there have been negative interventions affecting pillar II from 2008 to 2012 (significant investment restrictions, a decrease in contributions from 9% to 4%), several positive features were introduced recently (2012 and 2013) in pillar II, including the introduction of passive index pension funds, a decrease in management charges, changes to the fee structure resulting in the introduction of performance based fees (success fee with High-Water Mark principles) as well as a loosening of the regulation of non-guaranteed pension funds. However, the price to pay for these positive changes was the transfer of savers from equity based investments into bond pension funds (nearly 90% of savers), which might be not beneficial for all savers, especially the younger ones.

Pillar III pension vehicles are generally performing poorly and are costly. Without significant tax benefits for employers´ contributions, the pillar would never survive competition from pillar II pension funds and typical investment funds. The debate on finding an appropriate regime for pillar III schemes is still ongoing with several different views on how to make pillar III more favourable for savers.

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Pension Savings: The Real Return

2017 Edition

Country Case: Spain

Introduction

The Spanish pension system is composed of three pillars which are, like in most other EU countries: the public pillar, the occupational one, and the one consisting of invidivual pension plans.

The first pillar represents public pensions. This kind of pension falls under the umbrella of the State. The aim is to guarantee some protection against certain eventualities (such as illness, unemployment or accident) and provide means during retirement.

This pillar offers two types of pensions: the "*pensiones contributivas*" to which indiviudals contribute (normally by paying income taxes) before retiring and drawing from it, and "*pensiones no contributivas*", for which no contributions are required and which are directed towards covering basic necessities.

The three principles underlying the first pillar pensions are the following:

1. Principle of distribution: the contributions made by the active population finance the pensions at that moment.
2. Principle of proportionality: the generated pension benefits are directly proportional to the contributions.
3. Principle of contribution: the people who did not contribute will only have acces to the healthcare system and the "*pensiones no contributivas*" mentioned above.

The second pillar consists of occupational pension schemes linked to companies and entrepreneurial activities, and their objective is to generate private savings for the employees.

The constributions to these plans can either be completely made by the employer, or can also be made by the employees.

The difference between this pillar and the first one is that the distribution is based on a capitalisation system, that is, every worker contributes to his pension, with the pension dependent on the amount that the person is putting in as well as on the financial evolution of the savings.

The third pillar is composed of individual pension plans. These plans are private, meaning that an individual voluntarily contributes to a complementary pension plan. This is based on a capitalisation system, but in this case it mainly consists of Social Provision and Pension Funds. This pillar helps private savings to increase progressively in the long run.

Household Savings

Household savings have always been a traditional feature of the Spanish pension model, especially through Real Estate acquisition (housing property) and other forms of direct investment.

Historically, the lack of a well-functioning welfare system pushed citizens to build capital reserves to see them through times with an absence of income, such as retirement. However, due to the improvement of the welfare system, the Spanish society started to save less money and consumption rates increased.

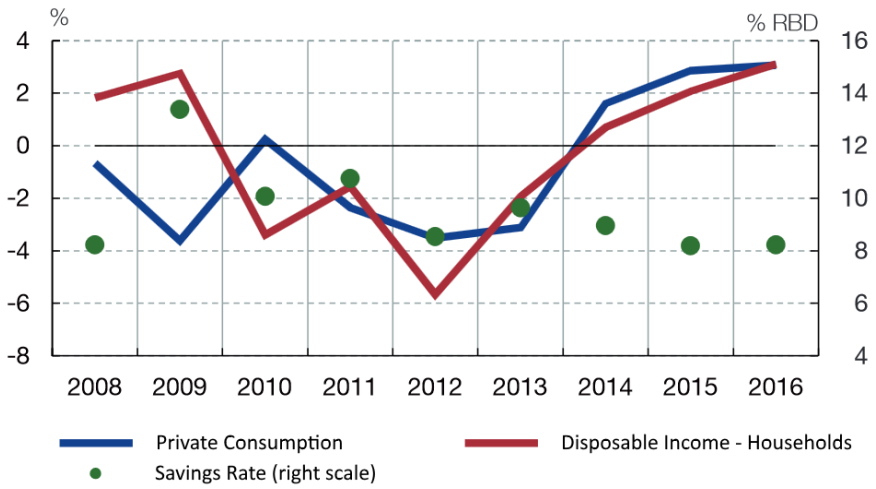
During the financial crisis that began in 2007, the level of savings increased strongly, moving from an average of around 11% of household disposible income in previous years, to 17.8% at the onset of the crises (end 2007), according to the Bank of Spain.[204]

[204] https://www.bde.es/f/webbde/SES/Secciones/Publicaciones/InformesBoletinesRevistas/BoletinEconomico/13/Sep/Fich/be1309-art6.pdf

Nevertheless, from 2009 onwards the savings rate decreased dramatically. This reduction was mainly due to a prolonged period of time during which Spanish families saw their incomes reduced because of the lack of employment opportunities. Other factors that contributed to the reduction of the household savings were the decrease of net transfers from the Public Administration through automatic stabilizers, discretionary tax measures, and the low rates of disposable income.

As illustrated in Graph ES1, the savings rates have not managed to regain the levels of the years prior to the crisis. In 2016 the savings rate was at 7.7%, 5% less than the year before due to an increase in consumption rates compared to the income rates.

Graph ES I. Evolution of the private consumption, household disponible income and the savings rate



Source: *Banco de España*

In times of economic distress, and in this case of economic crisis, it is important to take into account an additional powerful, psychological component. At its core, we find the dramatic decline of future job prospects and the hard times that have been endured by many, eroding consumer confidence. Furthermore, the economic crisis exposed structural

weaknesses in the Spanish economy (aging population, high unemployment rates and a large black market economy), and in its social welfare system, the main victim of the austerity measures.

By the end of 2016, the financial assets owned by Spanish households and non-profit institutions serving households amounted to €2.07 trillion, according to the Spanish Central Banks' financial balance sheets.[205] Moreover, according to the 4th term report from INVERCO (The Spanish Association of Collective Investment Schemes and Pension Funds), the Spanish households increased their investments in financial assets to the tune of €27,857 million, representing an increase of 1.4% compared to 2015.

If we take a closer look at the distribution of non-real estate assets owned by households, 2015 and 2016 breaks down as follows:

Table ES 1. Household's non-real estate assets – 2016 Distribution

	2015	2016	% Δ 2015/2016
Bank deposits	38.6	38.0	-1.6%
Direct Investment	26.6	27.2	2.3%
Collective investment schemes	12.4	12.6	1.6%
Insurance/ occupational pension	11.1	11.4	2.7%
Pension Funds	5.7	5.5	-3.5%
Cash	3.6	3.1	-13.9%
Other	2.0	2.0	0.0%

Source: INVERCO

As it is observable, there is not a great modification in the distribution of pension funds in 2016 compared to the previous year. The structure of relevance has not changed and the main allocation remains in bank deposits, followed by direct investments. With a significant difference, there are the collective investment schemes and insurance and occupational pensions, which saw slight growth in 2016, in terms of recipient of investments. Subsequently, the importance of pension funds

[205] https://www.bde.es/webbde/en/estadis/ccff/ccff2.html

and cash was lowered. The rest of the investments remained a 2% of the total.

According to the Spanish Central Banks' financial balance sheets, Spanish household savings held 41.47% in currency and deposits in 2016; 1.75% in debt securities; 37.67% in equity and investment fund shares; 17.12% in insurance, pensions and standardised guarantees, and a 2% in other assets. The following table shows the total amount of financial asset allocation and the percentage this represents:

Table ES 2. Spanish household financial asset allocation in 2016 (in million €):

Outstanding financial assets	2016	%
Currency and Deposits	859,059	41.5%
Debt	36,192	1.8%
Equity and investment fund shares	780,201	37.7%
Insurance, pensions and standarised guarantees	354,619	17.1%
Other Assets	41,339	2.0%
Total	2,071,410	100.0%

Source: Own elaboration, data from the Spanish Central Bank

The next table shows in more detailed the distribution of the Spanish household financial asset allocation, per quarters.

Table ES 3. Spanish household financial asset allocation in 2016 (in million €) per quarters:

2016-I	2016-II	2016-III	2016-IV	
2.015.091	2.033.234	2.049.556	2.071.410	**I. OUTSTANDING FINANCIAL ASSETS**
847.988	862.238	851.896	859.059	Currency and deposits
69.305	69.013	66.091	66.666	Currency
444.755	473.494	481.869	512.050	Transferable deposits
333.928	319.731	303.936	280.344	Other deposits
33.000	37.647	36.214	36.192	Debt securities
758	563	420	388	Short-term
32.242	37.085	35.794	35.804	Long-term
-	-	-	-	Loans
-	-	-	-	Long-term
753.499	734.459	769.003	780.201	Equity and investment fund shares
135.728	132.194	138.480	144.727	Listed shares
294.845	279.772	293.141	288.058	Unlisted shares
79.115	76.520	82.550	83.633	Other equity
243.810	245.973	254.831	263.783	Investment fund shares
339.717	345.389	350.422	354.619	Insurance, pensions and standardised guarantees
21.006	20.874	20.460	20.262	Non-life insurance technical reserves
155.851	160.942	165.283	167.340	Life insurance schemes and annuity entitlements
162.860	163.573	164.678	167.017	Pension entitlements
40.886	53.500	42.021	41.339	Other assets
619	611	613	621	Financial derivatives
13.934	14.044	14.011	14.002	Trade credits and advances
26.334	38.845	27.397	26.716	Other accounts receivable excluding trade credits
2.015.091	2.033.234	2.049.556	2.071.410	**TOTAL**

Source: Spanish Central Bank

Pension Vehicles

Pension Plans

There is a clear distinction to be made between, on the one hand insurance-based pension plans (referred to as 'retirement plans' in Spain), and pension plans on the other. The differences between the two systems are related to their potential liquidity, risk profiles and tax treatment.

Retirement plans are insurance products developed by financial institutions with one main goal: saving for retirement. These plans tend to be aimed at the mid- to low-income population, with little purchasing power. These vehicles are more flexible, and require less commitment than a pension plan. This is because they allow for early recovery of the amounts deposited. However, it is important to point out that the price of an early recovery in this kind of plan is enormous.

Pension plans are private social security instruments that are compatible with and complementary to the public pension system. Payments into pension plans complement the ones made by the public pension system, even substituting them completely in some cases. The public administration promotes them, with significant fiscal stimuli, which translate into substantial direct taxation benefits.

These fiscal privileges by the administration meant that participants couldn't withdraw the contributed funds until they reached the age of retirement (60 years minimum). However, there were exceptional circumstances that allowed for early recovery such as a serious illness or unemployment. This framework changed with the introduction of Law 26/2014, making the pension system more flexible. All contributions made from 2015 onwards can be recovered, together with its accrued interest, ten years after being paid into the fund.

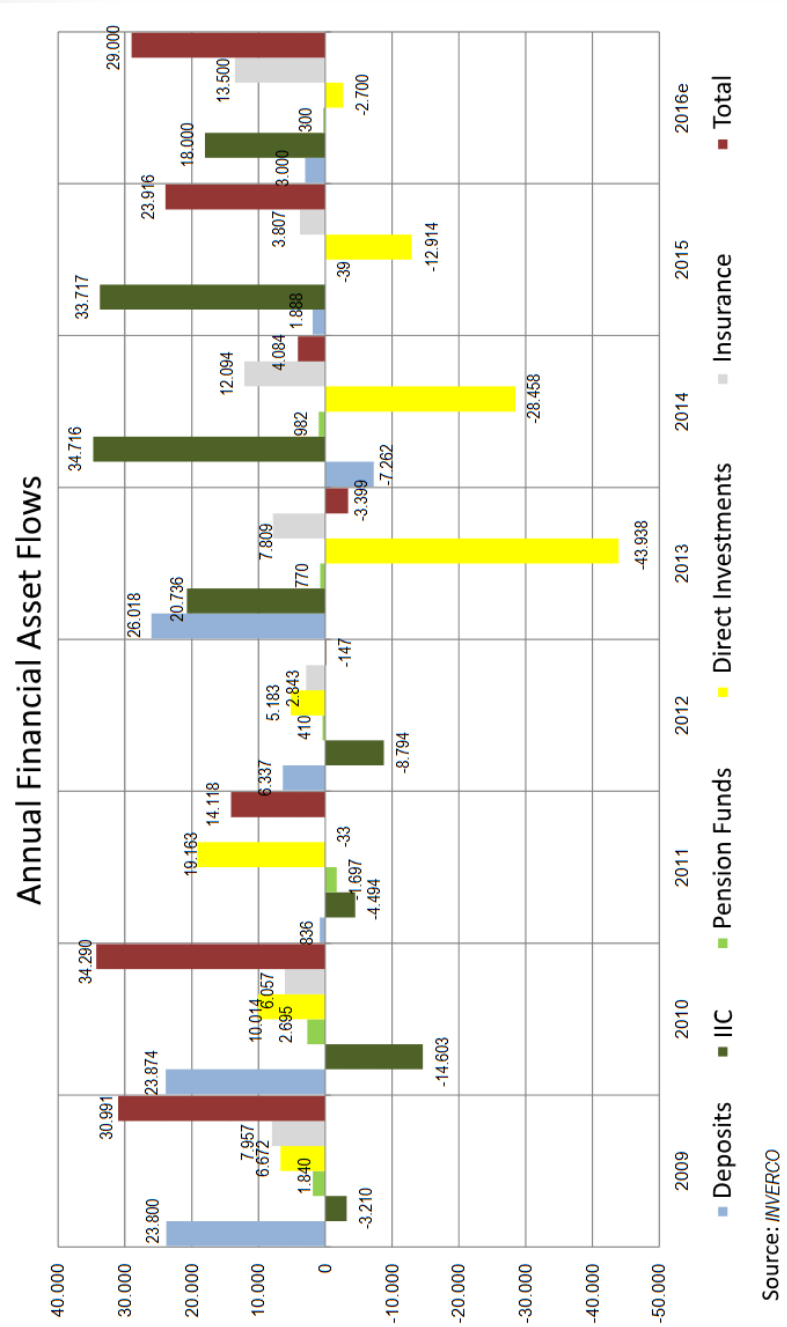
Furthermore, personal pension fund participants have the right to move their accrued capital to a different plan, either with the same asset manager or another. This movement does not involve any financial cost, fee

or commission. Moreover, it has no effect on the fiscal benefits enjoyed in the past or "promised" in the future. The movement of capital must take place within seven working days so that operators have time to verify the details and carry out the migration.

For the fourth year in a row, the financial assets of reference for the Spanish households were the Collective Institutional Schemes (IIC for their acronym in Spanish). Over this period, households have duplicated the trend on Investment Funds, becoming the largest instrument for this period of time. At the end of 2016, the total volume of IIC was €264 billion, which represents around 13% of total household savings[206]. Also, Pension Funds enjoyed a positive growth rate during these four years of 2.4% annually. Investments in other financial assets were more heterogeneous: investment in life insurance products increased by more than 10%, investments in equities suffered from the uncertainty of the variable income markets and slightly decreased, and the investments in fixed income remained constant.

[206] http://www.inverco.es/archivosdb/ahorro-financiero-de-las-familias-iics-y-fp-2016.pdf

Graph ES II. Distribution of the annual financial asset flows (2009 – 2016)



Source: *INVERCO*

In 2016, investments in IIC reached unprecedented levels, both in terms of assets under management as well as in number of participants. This is thanks to a renewed trust of Spanish savers who prefer Investment Funds and Pension Funds as their instruments to complement their savings for retirement.

The total Collective Schemes (including Pension Funds) grew by €23.44 billion, bringing the total to €501.1 billion at the end of the year, 4.9% higher than in 2015. The IIC increased their assets under management by €21.12 billion, 5.7% more than during the previous year, and Pension Funds saw an increment of 2.32 billion Euros[207]. This is shown in the following table:

[207] http://www.inverco.es/archivosdb/ahorro-financiero-de-las-familias-iics-y-fp-2016.pdf (page 33)

Table ES 4. Evolution of the total IIC, total Pension Funds and total Collective Investment Schemes (2011 – 2016)

TOTAL COLLECTIVE INVESTMENTS - BREAKDOWN	2011	2012	2013	2014	2015	2016	Variation 2016	
							mil.€	%
Investment Funds	132.267	126.523	157.546	196.805	220.299	235.718	15.419	7,0%
Movable Assets	127.772	122.322	153.834	194.844	219.877	235.341	15.463	7,0%
Fixed Capital Assets	4.495	4.201	3.713	1.961	421	377	-44	-10,4%
Investment Companies	24.458	24.120	28.199	33.184	34.803	33.501	-1.301	-3,7%
Movable Assets (SICAV)	24.145	23.836	27.331	32.358	34.082	32.794	-1.288	-3,8%
Fixed Capital Assets (SII)	312,5	284,1	868,2	826,3	721	707,335	-13	-1,8%
IIC Foreign [(1)]	45.000	53.000	65.000	90.000	118.000	125.000	7.000	5,9%
Total IIC	**201.725**	**203.644**	**250.746**	**319.988**	**373.101**	**394.219**	**21.118**	**5,7%**
Individual System	51.089	53.160	57.911	64.254	68.012	70.487	2.476	3,6%
Employment System	31.067	32.572	33.815	35.262	35.548	35.431	-118	-0,3%
Associate System	836	795	1.005	940	958	921	-38	-3,9%
Total Pension Funds	**82.992**	**86.528**	**92.730**	**100.457**	**104.518**	**106.839**	**2.321**	**2,2%**
TOTAL COLLECTIVE INVESTMENTS	**284.717**	**290.171**	**343.476**	**419.402**	**477.620**	**501.058**	**23.438**	**4,9%**
Annual Variation	*-6,2%*	*1,9%*	*18,4%*	*22,1%*	*13,9%*	*4,9%*		

Source: Inverco & CNMV

(1) Estimated INVERCO data, including institutional investors

Pension Funds

For the past five years Pension Funds have been growing in assets under management, bringing them to €106.84 billion by the end of 2016, which represents an increase of €2.32 billion (that is, 2.2% more than in 2015).

For the second year in a row, the individual system - or third pillar - was the main driver behind this growth, with an annual increase of 3.6%. The employment and associated systems experienced a decrease of -0.3% and -3.9% respectively, as shown in the table below.

The composition of Pension Fund portfolios in 2016 as presented in the last quarterly report of the Dirección General de Seguros y Fondos de Pensiones (DGSFP, the Spanish Insurance and Pension Funds Authority) showed the following distribution:

Table ES5. Distribution of the Pension Funds (per quarter in 2016)

	Q1	Q2	Q3	Q4
Equities	26.66%	28.74%	29.92%	32.00%
National government bonds	29.14%	28.27%	27.02%	25.59%
Foreign government bonds	11.90%	11.62%	11.71%	11.44%
Credit bonds	17.11%	18.50%	18.68%	17.56%
Deposits and money market instruments	15.18%	12.87%	12.67%	13.41%

Source: DGSFP
http://www.dgsfp.mineco.es/PlanesFondos/Documentos/2017/Boletines%20trimestrales/Informacion%20Trimestral%20de%20planes%201T%202017.pdf

The employment system represents 33.16% of all assets under management held in 2016, and the associated system just 0.86%. On the other hand, the individual system represents 65.97% of investments, which are sub-divided as follows: 8.84% for short-term fixed income, 7.13% for long-term fixed income, 20.14% for fixed income, 10.28% for mixed income, 7.54% for variable income and 12.05% for guaranteed plans.

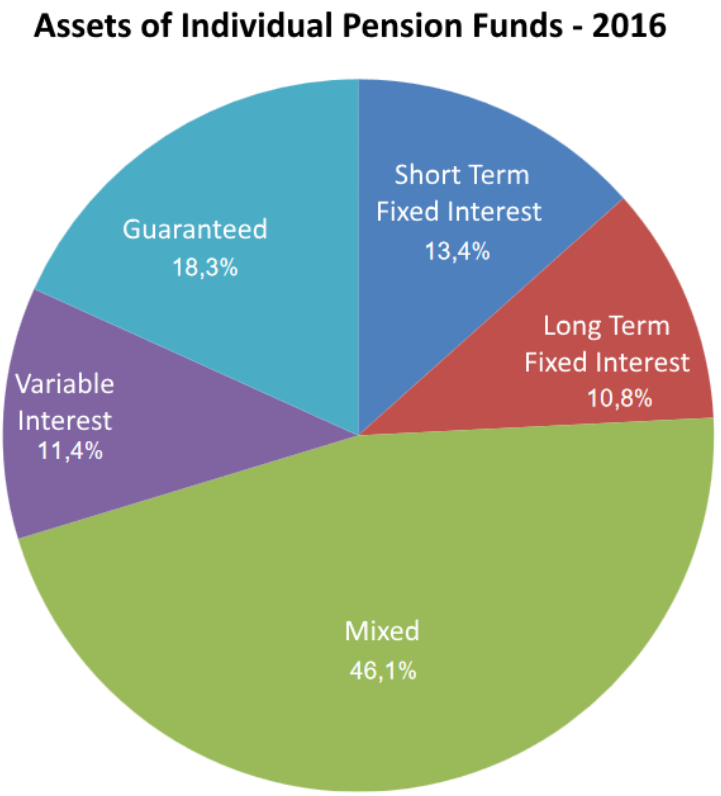
Table ES6. Breakdown of the total pension funds

ASSETS (in millions of €)	2010	2011	2012	2013	2014	2015	2016	Variation 2016	
								mil.€	%
EMPLOYMENT SYSTEM	**31.272**	**31.170**	**32.572**	**33.815**	**35.262**	**35.548**	**35.431**	*-118*	*-0,3%*
ASSOCIATE SYSTEM	**926**	**835**	**795**	**1.005**	**940**	**958**	**921**	*-38*	*-3,9%*
INDIVIDUAL SYSTEM	**52.552**	**51.142**	**53.160**	**57.911**	**64.254**	**68.012**	**70.487**	*2.476*	*3,6%*
Short Term - Fixed Interest	9.699	9.381	9.918	8.835	8.863	8.625	9.445	*820*	*9,5%*
Long Term - Fixed Interest	6.820	6.080	5.494	6.677	8.829	7.072	7.613	*541*	*7,6%*
Mixed - Fixed Interest	14.126	12.203	11.647	11.738	14.249	20.219	21.522	*1.303*	*6,4%*
Mixed - Variable Interest	4.526	3.998	3.566	5.326	6.595	9.872	10.983	*1.111*	*11,3%*
Variable Interest	4.267	4.000	4.694	5.813	6.796	7.785	8.054	*269*	*3,4%*
Guaranteed	13.114	15.479	17.841	19.522	18.922	14.438	12.870	*-1.568*	*-10,9%*
PENSION FUNDS - TOTAL	**84.750**	**83.148**	**86.528**	**92.730**	**100.457**	**104.518**	**106.839**	*2.321*	*2,2%*

SOURCE: INVERCO

The following graph reflects the percentage of investments in the different categories of individual pension funds. As illustrated, the mixed plans attracted 46.1% of investments, while guaranteed plans represented 18.3%, short-term fixed income 13.4%, variable income 11.4%, and long-term fixed income 10.8%.

Graph ES III.Breakdown of the Individual Pension Funds (based on Assets Under Management)



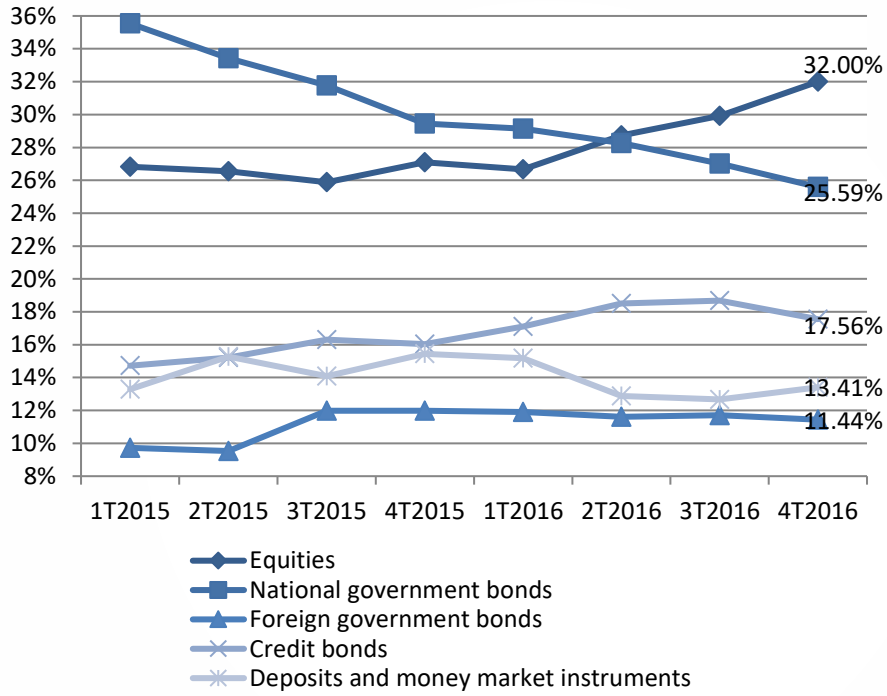
Source : INVERCO

The evolution of these variables over the last two years is shown below. As observable, investments in equities surpassed investments in national government bonds with 32% and 25.59% respectively at the end of 2016. Credit bonds attracted 17.56% of investments, followed by deposits and

money market instruments, with 13.11% and foreign government bonds with 11.44%.

The most remarkable feature is the negative trend of investments in National government bonds, which in the first term of 2014 still attracted around 40% of investments.

Graph ES IV.Evolution of the Individual Pension Funds (per quarters in 2015 and 2016)



Source: INVERCO

Life Insurance

According to UNESPA[208], total assets under management of the entire insurance sector at the end of 2016 amounted to €218.57 billion, which represents an increase of 5.66% with respect to 2015. The disaggregated

[208] http://unespa-web.s3.amazonaws.com/main-files/uploads/2017/05/NdP-Seguro-de-Vida-Q4-2016.pdf

numbers are, on one hand, €177.82 billion for life-savings contracts (not considered pension plans, representing 81.35%, and an increase of 6.03% compared to the previous period) and, on the other hand, €40.75 billion for pension funds (pension plans representing 18.64%), which are managed by the same insurers and grew by 4.09% compared to 2015. As stated in the fiscal book of UNESPA (the business association of the Spanish Insurance Industry), the total volume of income for the sector was €76.75 billion, which represent an increment of 7.06% compared to 2015. Moreover, 48,032 employees worked in the insurance sector in 2016, a decrease of 426 people. Furthermore, the amount of tax contribution in 2016 was €7.08 billion, which represents an increase of 1.87% compared to the past year.

33,247,200 people contributed to life-insurance plans in 2016. 89.25% of them had a life-insurance contract (29,673,615 in absolute terms) and 10.75% of them had a pension fund contract (3,573,585 in absolute terms)[209].

The most common life-insurance plans in 2016 were income-based plans, which represented around 48% of the total amount of life-insurance plans, amounting to €84.67 billion. The second most common were corporate pension plans for the employees (PPSEs), representing around 27% of the total deferred capital plans, being €48.51 billion. Other plans include insurance pension products (PPAs), systemic individual savings plans (PIASs), the permanent and temporal plans, the long-term individual saving insurance plans (SIALPs), and asset-linked plans.

The life-insurance plans of the 2nd pillar are shown in the following table. The table shows the number of contributors at the end of 2016, the volume of provisions, and the annual growth rate for both variables. The total volume was €35.94 billion, which represented a decrease of 2.51% compared to 2015.

[209] http://unespa-web.s3.amazonaws.com/main-files/uploads/2017/05/NdP-Seguro-de-Vida-Q4-2016.pdf

Table ES 7.Life-insurance plans for the 2nd pillar (in million €):

LIFE INSURANCE PRODUCTS

	TYPE OF PRODUCT	Nº Insured		Technical Provisions	
		31-12-2016	Δ 2015-2016	31-12-2016	Δ 2015-2016
PPSE (corporate employee pension plans)	Deferred Capital	30.005	18,49%	176.309.265,31	19,46%
Implementation of pension obligations	Risk	2.379.830	-4,25%	739.249.377,01	-7,71%
	Deferred Capital	210.271	-3,33%	2.729.110.231,26	-4,31%
	Income (Accumulation phase)	206.826	-3,50%	10.725.163.416,50	0,80%
	Income (Decumulation phase)	367.816	11,88%	13.983.785.320,18	-5,11%
	Unit/Index Linked	23.288	0,01%	1.138.098.924,93	4,28%

Source: UNESPA

The life-insurance plans of the 3rd pillar are shown in the following table. The amount of people who participate in these plans rose by 4.46%, bringing the total up to 8,664,031 people in 2016. Moreover, the total volume of individual life-savings plans grew by 8.43% to a total of €135.76 billion. The following graph shows the disaggregated life-insurance plans for the individual schemes:

Table ES 8.Life-insurance plans of the 3rd pillar (in million €):

PPA (Planes de Previsión Asegurados)	Insurance Pension Products	1.017.113	0,53%	12.934.964.826,45	3,17%
Saving Insurance / Retirement	Deferred Capital	3.071.048	-0,66%	43.707.040.542,20	8,05%
	Life and temporary income	1.634.467	-2,34%	55.259.869.322,52	8,45%
	Asset transformation into permanent income	8.431	NA	768.578.217,56	NA
	PIAS (systemic individual savings plans)	1.799.232	17,76%	10.222.734.452,18	27,47%
	SIALP (long-term individual saving insurance plans)	480.815	66,80%	1.990.980.828,19	118,08%
	Unit / Index-linked	652.925	-6,57%	10.891.017.898,08	-9,96%

Source: UNESPA

PPAs

The Assured Prevision Plans (PPAs) are equivalent to the pension plans, but they are guaranteed by an insurance company. The features in terms of benefits and fiscal treatment are the same. However, contrary to the pension plans, PPAs are completely safe for the insured thanks to the fact

that the risk is taken on by the insurance company that guarantees the interests.

Life-saving plans

These are life-insurance plans with the objective of saving in the long-term. These products manage and invest the insured's savings. They are designed as medium and long-term products, usually to complement the pension. There are several categories:

- Differed capital plans: The insurance company has to pay all the accumulated savings, plus an interest, by an established date.
- Permanent and temporal income plans: the money saved in the accumulation phase, plus interests, is recuperated as annuities in the decumulation phase, usually on a monthly basis. Among them:
    - Permanent: plans ensuring that the insured is going to receive money during the decumulation phase, until the end of the insured's life.
    - Temporal: plans which have been previously established by both the insurance company and the insured. The insured is going to receive the money during the decumulation phase, until the plan's money dries up.

Systematic Individual Savings Plan (PIAS)

PIAS are products that offer fiscal advantages upon payment because the interest is exempt in case certain requirements were fulfilled during the saving phase. That is, to have contributed at least five years and to perceive it as a permantent income. The annual limit is €8,000, which is compatible with long-term saving plans (SIALP & CIALP).

Long-Term Individual Saving Plans (SIALP)

This is an insurance product with a similar fiscal treatment to the PIAS in that it is exempt from taxes after five years. Contrary to PIAS, it is not necessary to receive the money as an annuity. This kind of products – along with the long-term individual savings account (CIALPs) – limits participant contributions to €5,000 per year.

Unit-linked products (Vinculados a Activos)

These products are linked to assets and the participant is assuming the risk.

According to UNESPA[210], at the end of the first quarter of 2016, 1.8 million savers (17.76% annual increment) invested a total sum of €10.22 billion in PIAS. On the other hand, 1.02 million people invested a total amount of €12.93 billion in PPAs.

In addition to PPA's and PIA's there are corporate social welfare plans for employees (PPSE). The latter are similar to pension plans of the employment type, as contemplated in Art. 51.4 of Law 35/2006 and the Royal Decree 1588/1999 modified by the Royal Decree 1684/2007. Although the tax treatment is similar to that of pension funds they are not as well established as PPA's and PIA's.

Charges

Spanish savers have greatly benefited from the regulator's recent intervention in fees and commissions. Until this moment, the transparency of these key aspects was insufficient and inadequate. The reform established a legal limit on management and administration fees attributable to investors. However, there were no measures introduced in order to limit transaction fees.

In 2012, Aguirreamalloa, Corres y Fernández[211] exposed these sales incentives in that commissions paid by fund providers to financial advisers were often presented to participants as ordinary expenses or commissions (such as management or deposit fees, subscription and reimbursement fees, etc.). This led to situations where financial advisors who placed pension products could, in some cases, make more money than the portfolio managers.

[210] http://unespa-web.s3.amazonaws.com/main-files/uploads/2017/05/NdP-Seguro-de-Vida-Q4-2016.pdf

[211] Aguirreamalloa, J; Corres, L. and Fernandez, P. — Pension Funds Returns in Spain 2001-2011, IESE Research document, February 2012

Article 84 of the Royal Decree 304/2004[212] established specific limits to the deposit or management fees charged to subscribers for this type of products. This was slightly modified by Royal Decree 681/2014.[213] Nonetheless, the regulation allows variable commissions to be set based on yields, although the providers have to respect certain limits such as the following:

- Pension fund managers can charge a 1.5% commission (previously 2%) of the yearly value of the administered account. This limit must be respected by the pension fund as well as by every pension plan that forms the fund, and individually for each subscriber.
- Pension fund depositary entities may charge a maximum of 0.25% (previously 0.5%) of the value of deposited accounts. They must comply with this limit for every individual pension plan, the pension fund as a whole, and individually for each subscriber.

The following table shows the evolution of the administration and management fees for pension funds over the last nine years[214]. The fees for the 2nd pillar were 0.18% in 2016, and the ones for the 3rd pillar 1.14%. The difference between the fees paid in the 2nd and the 3rd pillars has become smaller over this period of time thanks to a decrease in fees in the 3rd pillar, especially from 2014 onwards. Nevertheless, at more than six to one, the proportional difference in Administration and Management fees between pillars is still significant.

Table ES9. Administration and Management fees

	2008	2009	2010	2011	2012	2013	2014	2015	2016
2nd PILLAR	0.18%	0.16%	0.17%	0.21%	0.21%	0.22%	0.22%	0.23%	0.18%
3rd PILLAR	1.65%	1.41%	1.46%	1.52%	1.39%	1.42%	1.28%	1.14%	1.14%

Source: DGSFP

[212] http://www.boe.es/boe/dia5/2004/O2/25Q)dfs/A08859-08909.pdf
[213] http://www.boe.es/boe/dias/2014/08/02/pdfs/BOE-A-2014-8367.pdf
[214] http://www.dgsfp.mineco.es/sector/documentos/INFORME%20SECTOR%202016.pdf

A similar pattern is repeated for the deposit fees, where the difference between retail and corporate fees has diminished throughout the same period of time, as shown below. In 2016 depositary fees represented 0.03% for the 2nd pillar and 0.14% for the 3rd pillar, amounting to a four to one proportional difference between pillars. This is thanks to a decrease in the 3rd pillar depositary fees, and it shows the significant negotiating power of corporate investors in price setting with product providers, and with the high commissions charged by retail distributers. Consequently, it is understandable that the regulator was pressed to limit the management and deposit fees. This in turn has proven effective in reducing sale fees charged to retail investors.

Table ES11 - Depositary fees

	2008	2009	2010	2011	2012	2013	2014	2015	2016
2º PILLAR	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
3rd PILLAR	0.23%	0.22%	0.22%	0.2%	0.18%	0.19%	0.16%	0.14%	0.14%

Source: *DGSFP*

According to Aguirreamalloa, Corres y Fernández (2012), administrators failed to inform pension fund participants about the portfolio management policies. These authors criticised the quality of the information provided, which they deemed insufficient for taking decisions on the value of the management of the fund. Nowadays all fees and commissions attributable to the pension plan have to be included, both in pre-contractual documentation as well as quarterly and semi-annual reports that entities must send to participants. Like this, investors are aware of commissions and fees that their subscription to the plan will entail, before they make their decision to invest. Furthermore, once invested in the plan, they receive periodic information about paid fees and their actual impact on their product and its returns.

In addition, all pension plans of the 3rd pillar are obliged to provide the Key Information Documents (KID) to potential investors. This KID should include the necessary information for participants to make an informed investment

decision. This document should contain key information, briefly and concisely, to allow for a clear understanding of the product. It should include the main features and nature of the product, the costs and the risk profile, as well as relevant information about its returns.

Although pension products are not included in the PRIIPS regulation[215], the KID model is strongly influenced by it. There has been a notable effort to include pension funds in this regulatory scope, two years before its official implementation (once the transitory period passes of the Royal Decree that introduced the KID). Unlike plans in the 3rd pillar, plans in the 2nd pillar do not need to present a KID. Although the same information must be presented in the pre-contractual information to participants upon joining the plan, including expenses and fees.

Taxation

It could be said that the Spanish private pensions system is similar to the EET model. This system allows for savers that invest in pension products to enjoy fiscal stimuli, leaving the invested capital exempt from taxation. Moreover, the revenue generated by the capital investments is only taxed if it has generated profits. This illustrates the underlying political strategy that the government has taken to encourage savings through taxation measures when the pension system is in question.

It would have been interesting for end-investors to have truthworthy information on net returns (after tax and inflation) of long-term investment products. But a general comparative and objective study is not possible. It is due to the fact that net returns are different for each pension saver and for each fiscal year. This is obviously a consequence of the difference in tax expenses derived from personal income tax in the capital recovery phase due to the different marginal rates applied to total income, with future fiscal policies being difficult to predict at the time of investment.

[215] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R1286&from=EN

The following section is a summary of the different fiscal treatments that products receive:

Retirement Plans

This system does not contemplate fiscal benefits for contributions made to retirement plans, which were differentiated from pension plans earlier on.

If the policy holder chooses to recover the whole invested amount, together with its generated returns, at the age of retirement, the lump sum will be taxed as capital gains in the income tax declaration of that year. These gains will be considered as the difference between the capital received and the premiums paid, to avoid double taxation.

On the contrary, when the pay-outs are deferred payments (temporary or lifetime) the result of applying a percentage added to the return obtained until the constitution of the payment, will be considered as capital gains.

Thus, benefits received for retirement or disability reasons in the form of deferred payments by beneficiaries of life or disability insurance policies, will be integrated in their tax base as capital gains from the moment the amount exceeds that of the premiums that have been paid according to the contract.

Life insurance products

All fiscal benefits for contributions on life insurance products were eliminated in 1999. Today returns on the accumulated capital are taxed like any other return on financial capital.

If the policy holder is the one perceiving the payment from the insurance policy as a lump sum, this amount is treated as capital gains (the difference between capital received and the sum of the paid premiums). This difference is included in the savings tax base, being taxed at 19% up to the first €6,000; at 21% from €6,000 to €50,000, and at 23% for amounts over €50,000.

If the capital is received as income, it is also treated as capital gains, and it is included in the savings tax base. Each annuity has a different percentage applied to it, depending on how many years the income will be paid or the age of the beneficiary at the start of payments.

In case of death of the insured party before the end of the policy contract, the beneficiaries will pay tax on their inheritance, which will vary depending on the regional regulation. It must be noted that Spanish regional governments (*Comunidades Autonomas*) have the competency to decide on tax rates, reductions and deductions within their regions. This leads to significant differences inside the Spanish territory.

PPAs (Insured Provision Plans, "Planes de Prevision Asegurados")

The commitment to this type of private social welfare products is reflected in the favourable fiscal treatment that they receive. All contributions reduce the labour income tax base for investors by up to €8,000 euros annually. On the other hand, payments are taxed as labour income in accordance with the age of the saver at the moment of the set-up of the payment scheme, excluding the capital gains taxation. It could therefore be said that these products enjoy the same fiscal treatment as pension plans.

PIAS (Individual Systematic Savings Plans, "Planes Individuales de Ahorro Sistematico")

The PIAS is an insurance-savings instrument which was created after the last fiscal reform (1 January 2007). It is complementary to the PPAs and other Pension Plans and it also benefits from a favourable fiscal treatment. They were first defined by the Third Additional Provision of Law 35/2006 on Personal Income taxes, and then modified by section 69 of the first article of Law 26/2014.

The participant can save by making individual or periodical contributions. Just as for the other pension products, there is a maximum annual deductible amount that the participant can save per year. In this case, the maximum amount is €8,000. Moreover, there is a maximum amount that

the contributor can save in this kind of plan, which is €240,000. Contrary to similar products, a contributor cannot have more than one PIAS.

If these requirements are met and the first contribution to the PIAS was made within a five years period, the saver does not pay any taxes on the investments returns. That is, when the contributors receive lifelong payments, the generated returns are completely exempt from taxation. On the contrary, there is no tax deduction if it is recovered as a lump sum.

The taxed percentage of the life-time annuities depends on the age at recovery, as follows:

- Under 40 years: 40%
- In between 40 and 49 years: 35%
- In between 50 and 59 years: 28%
- In between 60 and 65 years: 24%
- In between 66 and 69 years: 20%
- 70 years and over: 8%.

Pension Plans

We could consider private pension funds and plans to constitute the most popular products to save for retirement in Spain. This is, without any doubt, due to the important fiscal benefits in terms of personal income tax. These advantages have also been extended to other insurance products that have emerged as more flexible alternatives.

These fiscal advantages are the reason why investors have chosen private pension funds as the main non-public way of saving financial resources for retirement. In fact, the most significant contributions to these plans tend to coincide either with the end of the fiscal exercise (guaranteeing the maximum deductibility) or the payment of personal income taxes.

Law 26/2014 introduced new tax measures for Spanish pension plans and similar products. Deductions on the personal income tax base following contributions to pension plans remain unchanged. There is an exception for €8,000 or 30% of annual income from work or professional activity.

As for the rest of the retirement and pension products defined by Spanish law, there are three possibilities for the recovery of the accumulated capital after the investment period has finished:

- **Lump sum**: before 2007, there was the option to receive a lump sum as a unique payment with an implicit tax reduction of 40%. After 2007, cases in which this reduction was applicable were reduced. Moreover, a transitional regime was established[216], which is still in force, when the recovery of the sum occurs within two years of the retirement age. Those who retired before 2010 and haven't already withdrawn their capital have eight years to do so and those who retired between 2011 and 2018 have eight years to also enjoy the same treatment. This makes it almost obligatory for pensioners to recover the amount within two years to avoid being disadvantaged tax wise, in a system in which contributions and accumulated returns are both taxed, although one could argue that the taxation of these contributions as well as the benefits received are deferred in time.
- **Annual annuity (lifelong or temporary)**: This is an option in which the amount recovered is taxed, although it is deferred over the years that the payments last. The amount of the payments will be treated as labour income and are added to other incomes that the pensioners receive (public pension, dividends, coupons, etc.). Nonetheless, there is an additional advantage for these annual payments from insurance products (life, insurance, PIAS, PPAS, PPSE), that depends on the age at which the saver/policy holder starts to recover his investments, as shown in relation to PIAS.
- **Mixed payments**: In this case, both of the mentioned possibilities are combined, so that there is a lump sum received and the rest is deferred in time through annual payments, so both types of fiscal treatments are enjoyed.

As indicated, the amount paid in taxes upon retirement depends on the decision the investor makes regarding the type of recovery he prefers. In any case, there is an inevitable imbalance reflected in the difference

[216] BOE number 288 of the 28th of November 2014

between the fiscal burden that the contributor supports when he contributes part of his income to savings/pension products and what he will effectively pay when he receives the capital. Therefore, the net fiscal balance changes depending on the total annual income received and the progressive marginal applicable rate on income taxes.

These marginal rates were reduced in 2015 to 19.5% for contributors with lower income (20% in the past) and 46% for the higher brackets (47% in the past). A deeper look reveals that for income lower than €12,450, the tax rate has fallen from 20% to 19.5%; for amounts between €12,450 and €20,200 from 25% to 24.5%; for amounts between €20,200 and €35,200 it dropped from 31% to 30.5%; for incomes between €35,200 and €60,000 it went from 39% to 38%; and finally for amounts above the €60,000 threshold, the rate decreased from 47% to 46%.

This is very significant in that tax implications are especially relevant for retail investors when considering the final return on their pension/investment products, since they must consider how much of their return is lost due to inflation rates and taxation upon recovery.

The most precise estimation of real returns can only be made at the end of the plan's investment phase. The reason for this is that the closer we come to the recovery date, the clearer the net fiscal effect will be, allowing us to calculate deductions and the tax expense of the recovery of the investment and its returns.

Over the last few years, we have seen a change in tax treatment thanks to policies aimed at stimulating savings. This in turn makes it a difficult task to decide between pension funds and alternative retirement savings products, since information on future net returns is not reliable. The decision process is replete with long term uncertainty.

Pension Returns

Spanish capital markets returns

IBEX 35 is the Spanish stock exchange index and is the most representative index to study national large cap returns.

The year 2016 started in negative territory for the IBEX 35, due to the growth of the emerging economies, especially the ones strongly dependent on oil prices. Moreover, the Brexit referendum saw increased volatility causing losses over the two first months.

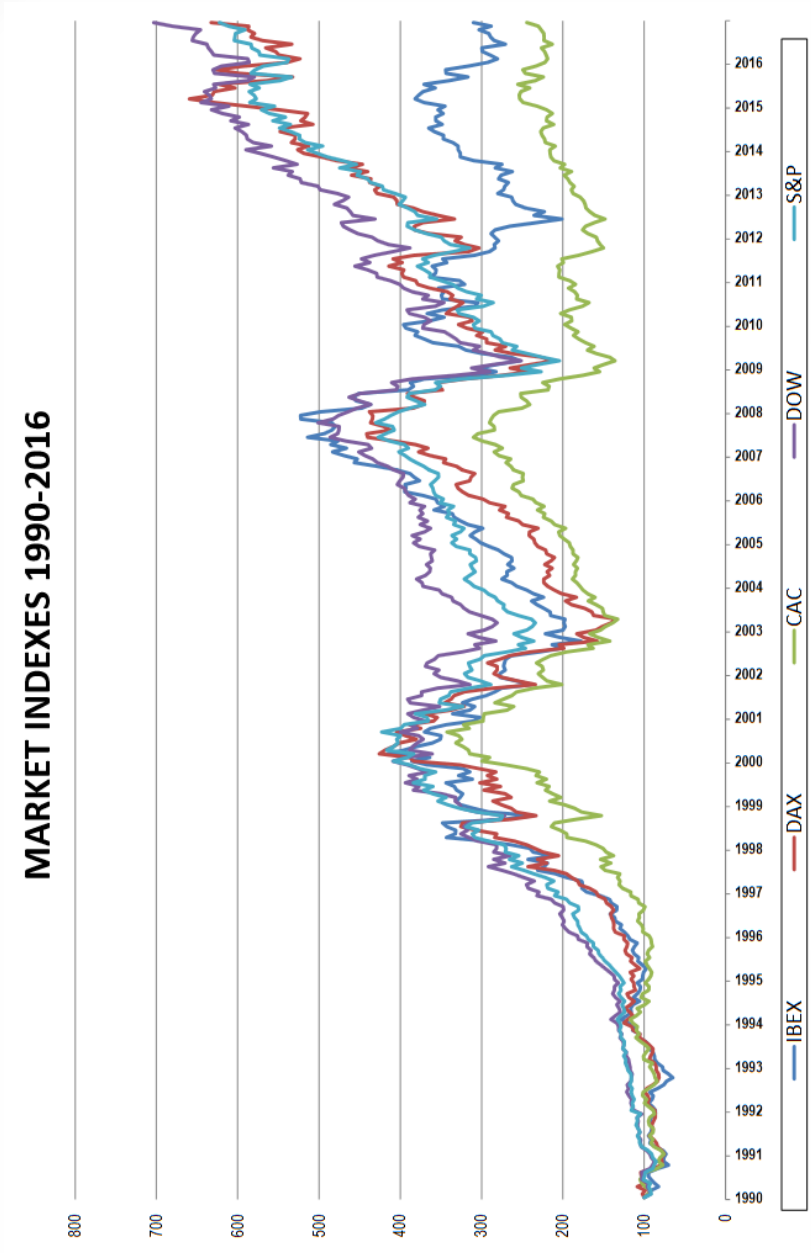
This situation changed following the adoption of certain measures at an ECB meeting in March, of which the most relevant measures included the lowering of interest rates from 0.005% to 0%, to reduce deposit interest rates by ten basic points, and to open the range of bonds in euros with investment degree which were emitted by non-credit entities[217].

The tendencies followed by the stock exchange indexes are positive over the last 26 years. As shown in the following graph, during periods of economic growth, the index trends evolved more evenly than during the years with negative rates.

Following the financial crisis of 2008, differences between the DAX, the DOW and the S&P reached higher levels that they did previously to the crisis. The CAC and the IBEX, on the other hand, followed a flatter tendency and, even though they both recovered in the last years, they have not reached levels prior to the crisis.

[217] http://www.inverco.es/archivosdb/ahorro-financiero-de-las-familias-iics-y-fp-2016.pdf

Graph ES V.Main index performances



Source: INVERCO

The IBEX 35 struggled ever since the financial crisis to recuperate its original level. This is due - amongst other factors – to the slow economic recovery, the political uncertainty experienced by the country, and a very unstable European macroeconomic context.

2016 was the second year in a row during which the IBEX35 experienced a negative evolution, with 2.0% of accumulated losses. However, this is better than in 2015 when IBEX 35 experienced a decrease of 7.2%218.

Pension fund performance

Taking as a reference the amounts published by the business association INVERCO, the annual average return for Spanish pension funds can be broken down as follows (in thousands of €):

[218] http://www.inverco.es/archivosdb/ahorro-financiero-de-las-familias-iics-y-fp-2016.pdf

Table ES11 - Return on Spanish Private Pensions (%)																		
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2000 – 2016*	2000-2016 Average
Non-mandatory 2nd Pillar Pension Fund from associations or worker unions to members																		
-	-0,10	-3,84	5,61	6,56	9,49	8,16	3,05	-11,10	9,23	0,95	-1,11	6,94	9,51	6,88	2,57	2,45	55,25	3,25
Non-mandatory 2nd Pillar Pension Funds from firms to employees																		
-	-0,64	-3,72	6,73	5,52	8,39	5,36	2,44	-10,50	9,28	2,01	0,00	8,04	7,70	7,14	2,88	2,74	53,37	3,14
3rd Pillar Pension Funds – Fixed returns (short term)																		
3,83	3,64	3,83	1,95	1,77	1,04	1,26	1,94	2,13	1,80	-0,64	1,38	3,47	2,08	1,37	-0,20	0,27	30,92	1,82
3rd Pillar Pension Funds – Fixed returns (long term)																		
0,68	0,62	-0,73	2,62	1,92	1,78	0,34	0,75	2,03	3,96	-0,47	1,39	4,79	4,66	8,93	-0,46	1,25	34,06	2,00
3rd Pillar Pension Funds – Fixed returns (mixed) 3rd Pillar Pension Funds – Fixed returns (mixed)																		
-2,20	-2,41	-5,16	3,92	3,16	5,33	3,58	1,32	-8,79	6,05	-1,54	-2,21	5,41	6,11	3,61	0,78	0,71	17,67	1,04
3rd Pillar Pension Funds – Variable Returns - mixed 3rd Pillar Pension Funds – Variable Returns - mixed																		
-4,97	-7,73	-17,20	8,70	5,60	12,16	10,09	2,96	-23,80	14,21	-0,82	-7,01	8,62	12,51	4,77	2,50	2,70	23,29	1,37
3rd Pillar Pension Funds – Variable Returns 3rd Pillar Pension Funds – Variable Returns																		
-10,60	-16,30	-30,10	16,18	8,88	18,73	18,30	3,93	-38,40	27,20	1,63	-10,40	10,43	22,19	7,63	5,58	4,34	39,22	2,31
3rd Pillar Pension Funds – Guaranteed Capital Pension Funds																		
-	-	-	-	4,66	4,64	1,44	1,48	-0,68	3,77	-3,96	1,16	5,48	9,41	11,37	0,27	2,12	41,16	2,42
Weighted average annual returns, before inflation and taxes																		
-1,66	**-2,87**	**-7,12**	**5,71**	**4,76**	**7,70**	**6,07**	**2,23**	**-11,14**	**9,44**	**-0,36**	**-2,10**	**6,65**	**9,27**	**6,46**	**1,74**	**2,07**	**36,87**	**2,17**
Inflation – CPI Spain, Eurostat																		
4,00	2,51	4,01	2,69	3,28	3,72	2,72	4,28	1,45	0,90	2,87	2,35	3,01	0,31	-1,13	-0,31	1,41	38,07	2,24
Annual returns, after inflation and before taxes																		
-5,66	**-5,38**	**-11,13**	**3,02**	**1,48**	**3,98**	**3,35**	**-2,05**	**-12,59**	**8,54**	**-3,23**	**-4,45**	**3,64**	**8,96**	**7,59**	**2,05**	**0,66**	**-1,20**	**-0,07**

** The starting point is the first year for which there is data*

Source: Own elaboration, based on INVERCO and Bank of Spain data

As in the previous year, the average of the annual returns after inflation but before taxes in 2016 remained almost flat at -0.07%. The high level of fees and commissions charged with regard to these pension products is the main reason behind these disappointing results. In times with historic macroeconomic upheaval, it is significant to observe that these funds have barely managed to maintain their value against inflation.

As it is observable, the nominal returns of the non-mandatory 2nd Pillar Pension Fund from associations or worker unions to members in 2016 was 2.45%; Non-mandatory 2nd Pillar Pension Funds from firms to employees was 2.74%; the 3rd Pillar Pension Funds – Fixed returns (short term) was 0.36%; 3rd Pillar Pension Funds – Fixed returns (long term) was 1.27%; 3rd Pillar Pension Funds – Fixed returns (mixed)3rd Pillar Pension Funds – Fixed returns (mixed) was 0.83%; 3rd Pillar Pension Funds – Variable Returns - mixed 3rd Pillar Pension Funds was 2.75%; the 3rd Pillar Pension Funds – Variable Returns 3rd Pillar Pension Funds was 4.71%; and the 3rd Pillar Pension Funds – Guaranteed Capital Pension Funds was 2.11%.

The Weighted average annual returns - before inflation and taxes - were 2.15%; the Harmonized Index for Consumer Prices (HICP) showed that the inflation rate was 1.41% in 2016. In 2015 the HICP evolution was close to flat (at 0%) so there was no return devaluation; and the Annual returns, after inflation and before taxes was 0.74%.

The studies performed by Aguirreamalloa, Corres y Fernández (2012), mentioned earlier, concluded that the other main reason behind these low returns (apart from high fees and commissions) was the conservative investment strategy followed by Spanish private pension funds. The OECD reports that Spanish funds are investing more and more of their portfolios in debt products. Although this has worked well throughout the economic crisis, it could become an obstacle to the generation of adequate real returns for savers.

This growing trend has become especially noticeable in the portfolios of life insurance products. Part of this is due to the new regulation introduced

with the Solvency II Directive[219] as it has low tolerance for assets with high volatility, such as private and non-quoted assets, making insurance companies guarantee and maintain investors' capitals through investment in debt instruments with a supposed lower volatility. This has led to a priority positioning in Government debt instruments, which have historically offered lower returns than the rest of the market.

In this sense, the Royal Decree that approved the regulation on pension funds and plans, the 304/2004 one[220], in articles 69 to 77, stipulated the Spanish pension fund portfolio allocation requirements. It indicates that pension funds must be invested, mostly, in investment instruments and deeds that are commercialised in regulated markets. On the contrary, instruments from non-regulated markets may be part of the portfolios, but they must constitute a low percentage of the overall assets, where the regulator can also include an extensive list of eligible investment instruments.

It should be noted that if the present investment policies is maintained, the capacity for Spanish pension plans to generate returns is very limited. This situation seems especially worrisome for the 1st pillar public pension system, as the only possibilities we see are further fiscal stimuli as a way of promoting private pension saving (since another cut in fees and commissions seems improbable).

Objectively, asset managers have maintained the purchasing power of these funds and covered fees and commissions, although value generation has come from the fiscal authorities.

Conclusion

On average, the real returns before taxes on private pension plans in Spain since 2000 have practically been flat (-0.07% annualized) even though the Spanish capital market performance has been truly positive (both fixed income and equities). Furthermore, over the last few years, the local

[219] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:335:0001:0155:en:PDF
[220] https://www.boe.es/buscar/pdf/2004/BOE-A-2004-3453-consolidado.pdf

securities market has thrived, together with minimal inflation. The lowering of legal limits set on fees and commissions in the last few years has been crucial in improving those return indexes. Even with all these favourable elements, pension plans have not shown themselves to be adequate instruments capable of offering attractive positive returns.

The fiscal regime in Spain promotes private pension systems, albeit for questionable reasons (either to prop up the sustainability of the public pension system or to provide the necessary stimuli for the private insurance and financial sector in Spain). Some of these measures have consisted of tax deductions for contributions, and tax benefits during the investment period. Moreover, pension funds are exempted from paying tax on capital gains, received dividends, corporate income tax or VAT on management and deposit fees.

The artificially low tax burden on returns falls exclusively on the saver who may have to pay higher marginal income tax if the capital is recovered as a lump sum. This creates an added incentive to replace the lump sum recovery method with annual payments that defer payment of due tax over the payback period. In this sense it could be stated that the fiscal system in Spain is more favourable for the providers of savings / pension instruments than for savers themselves, especially as a consequence of the significant tax reductions that have been put in place to encourage contributions to these products, even though they have difficulties generating sufficient returns to maintain the deposited savings' long-term buying power (at least for the period between 2000 and 2015)

Regarding the evolution of the Spanish equity and bond markets, it seems pension products could offer better long-term returns for participants if there were significant changes introduced to their choice of portfolios of assets. This could only occur if there were changes in the criteria required for institutional investors to comply with solvency requirements. Admittedly it seems that with the present disinformation and lack of protection of retail investors, it is doubtful that taking on more risk is the solution.

Policy Developments

We cannot conclude this study without mentioning the latest regulatory developments that could potentially change the legal framework of private pension savings in Spain.

On 14 December 2014 Order ECC/2329/2014 came into effect. It regulates the calculation of the expected returns on life insurance operations. It is an order that requires insurance companies to disclose the returns that clients could expect to achieve when contracting a life insurance savings policy. Moreover, it compels them to calculate returns with homologated criteria that consider the deduction of the expected fees and commissions. This in turn allows savers to make informed decisions by facilitating comparison between different life insurance saving policies and by fostering transparency in the market.

Until recently, insurance companies were free to sell their products using their own criteria, choosing whether to divulge the fees reducing returns, or not. Nowadays, in order to provide the expected return information they must all use the same variables to calculate the figure, offering an equal term similar to the way that annual percentage rate (APR) works with lending. In fact, it is colloquially known as the "APR of insurance".

This order affects most of the life insurance savings modalities such as PPAs, PIAs, deferred capital policies and saving plans. It excludes life-risk policies that ensure only death or disability contingencies and unit--linked products in which the policy holder assumes the investment risk without guaranteed returns.

A priori, the measure seems beneficial both for policy holders (who now enjoy more reliable, understandable and complete information) and for insurance companies (that won't have to enter into complex calculations to present their offers). This fact can increase trust and, therefore, the demand of these products, as it offers greater security. For this reason, it has been especially controversial that in the new DGSFP resolution draft, on the information obligations of insurers that commercialize PPA's, it was

stipulated that the new term should be complimented by the old guaranteed technical interest. This could lead to misunderstandings due to the similarities with pension plans, and it opened a new debate on the necessary balance between the quantitative criteria of more disclosure and the quality and relevancy of information offered, providing more clarity rather than feeding the confusion.

The debate is divided into two clearly defined positions, although it seems to be stuck at present due to the political situation and economic instability.

Conversely, Order ECC/2316/2015, from November 4, relating to information obligations and financial product classification, is based on a colour "traffic light" system and a numeric scale that express the risk of the products.

In fact, in the absence of other measures, this visual code could end up becoming a new safeguard against banks committing fraud on a massive scale by distributing toxic products, as happened in the past (i.e. MIFID's suitability assessment test that was introduced by European legislation). Consumer protection cannot be limited to a single tool, and a well-functioning system has to be guaranteed with solid regulation and effective policies in order to prevent mass commercialisation of high risk products.

Moreover, there are many products that have been excluded from the scope of this order, such as collective insurance products, PPSE's, insurance policies concerted by pension plans for risk cover and pension benefits or unit-linked products, all of which are complex products for retail savers. On the other hand, entities can choose whether to use the colour coding "traffic lights" or a number on a scale from one to six in order to define the risk (which could also be colour coded). There is no obligation to include the risk indicator on product publicity, except in cases where information disclosed is about its characteristics and risks. In the end these measures have a high probability of turning into new channels for misleading information involving consumer savings and investment.

Pension Savings: The Real Return

2017 Edition

Country Case: Sweden

Introduction

The Swedish pension system is divided into three pillars:

- Pillar 1 - The national pension
- Pillar 2 - Occupational pension plans
- Pillar 3 - Private pension

The Swedish pension system is a combination of mandatory and voluntary components; Table SE1 shows how the pension capital is distributed between the different types of providers in the pension system. The average pension in Sweden was 1,834 EUR (17,867 SEK) per month before taxes in 2016 whereof 1,264 EUR (12,312 SEK) came from the national pension, EUR 440 (4,288 SEK) from occupational pensions and 96 EUR (933 SEK) derived from private pension savings. The outcome furthermore differed quite significantly between genders. For women the average total pension was 1,571 EUR (15,302 SEK) per month before taxes and for men 2,142 EUR (20 867 SEK) per month before taxes[221]. Although a lot of money is locked in the pension system in Sweden, the Swedish household savings rate is quite high.[222]

[221] Orange report 2016
[222] Pensionsmyndigheten, "Så blir pensionen 2017"

Table SE 1. - Capital Managed (billions of SEK)								
	2009	2010	2011	2012	2013	2014	2015	2016
Income-based pension	827	895	873	958	1,058	1,185	1,230	1,321
Premium pension	340	408	393	471	602	759	839	959
Occupational pension	1,403	1,509	1,705	1,795	1,948	2,227	2,369	
Private pension	402	423	406	412	433	465	478	

Source: The Swedish Pensions Agency; Orange report 2016

There is no set age at which people must retire, but the national pension can be drawn from the age of 61 onwards in Sweden. Nor is there an upper age limit on how long a person may work, and everyone is entitled to work until the age of 67. The Swedish Pensions Agency administers the national pension and related pension benefits and provides information about them. The Swedish Social Insurance Inspectorate ensures that the Swedish Pensions Agency conducts its administration with due process and efficiency. The occupational and the private pension can be drawn from the age of 55 onwards.

The new national pension system in Sweden was introduced in 1999. The most important change in the reform was going from a defined benefit system to a defined contribution system. Before the reform, pensions were considered a social right and people were guaranteed a certain percentage of the wage before retirement. Following the reform, the outcome of the pension now consists of the pension savings accumulated during active employment before retirement. In this system, pensions depend on economic and financial development, which means that it is not possible to know what a pension will consist of beforehand. With the new pension system, the need for information about pensions is even more important. The occupational pension system has developed in the same direction; most of the occupational pension plans are now defined contribution systems or hybrids with both defined contribution and defined benefit components.

Due to the fact that we live longer and the pension capital is supposed to last much longer the current debate on pensions in Sweden focuses on raising the retirement age to solve the issue of lower pensions. The total pension amount for people born between 1938 and 1946 shrank from 86% to 77% of the final salary. And the national pension, which every Swedish citizen with a salary or another taxable benefit is entitled to, shrank from 61% to 49% of the final salary for the same age groups.

Pillar I: The national pension

The national pension consists of an income-based pension, a premium pension and a guarantee pension. 18.5% of the salary and other taxable benefits up to a maximum level of 7.5 income base amount[223] per year is set aside for the national retirement pension. 16% is set-aside for the income pension, where the value of the pension follows earnings trends in Sweden. The income-based pension is financed on a pay-as-you-go basis, which means that pension contributions paid in are used to pay retirees the same year. The remaining 2.5% of the salary and other taxable benefits are set-aside for the premium pension, for which the capital is placed in funds. The individual can either choose what fund or funds to place their savings with, or if no choice is made, the pension will be placed in the default alternative fund. This system is unique to Sweden and the first individual choices were made in 2000. The aim was to achieve a spread of risk in the pension system by placing a part of the national pension on the capital market, enhance the return on capital and to enable individual choices in the national pension system.[224] The Swedish Pensions Agency calculates that by 2030 the premium pension will constitute 20% of the total pension.

The capital for the income based-system is deposited in the four buffer funds: the first, second, third, fourth and sixth national pension funds. The result of the income based pension system is affected by several key economic and demographic factors. In the short run, the development of employment is the most important factor, but the effect of the stock and

[223] 47,356 EUR (461,250 SEK) for 2017.
[224] *Vägval för premiepensionen*, Ds 2013:35

bond markets is also of significance, particularly in case of major changes. In the long run, demographic factors are of most importance.

Earned pension rights and current benefits in the income based system rise with the growth in the level of per capita earnings. If the rate of growth of the wage would be slower than that of average wages, as a result of a fall in the size of the work force for instance, total benefits would grow faster than the contributions financing them, which could induce financial instability. If the ratio of assets to liabilities in the income-based system falls below a certain threshold, the automatic balancing mechanism that abandons indexation by average wage growth is activated.

The third element of the national pension is the guarantee pension. It is a pension for those who have had little or no income from employment in their life. It is linked to the price base amount calculated annually by Statistics Sweden and the size of the guarantee pension depends on how long a person has lived in Sweden. Residents of Sweden qualify for a guaranteed pension from the age of 65. To receive a full guaranteed pension, an individual must in principle have resided in Sweden for 40 years after the age of 25. Residence in another EU/EEA country is also credited toward a guaranteed pension. In addition to the national pension, pensioners with low pensions may be entitled to a housing supplement and maintenance support.

For administering the income based pension system a fee is deducted annually from pension balances by multiplying these balances by an administrative cost factor. In 2016, the deduction amounted to 0.03%[225]. The deduction is made only until the insured begins to withdraw a pension. At the current level of cost, the deduction will decrease the income-based pension by approximately 1% compared to what it would have been without the deduction.

The premium pension system is a funded system for which the pension savers themselves choose the funds in which to invest their premium

[225] The Swedish Pensions Agency, Orange report 2016

pension moneys. At the year-end 2016, there were 851 eligible funds registered in the premium pension system, managed by 108 different UCITS. The premium pension can be withdrawn, in whole or in part, from the age of 61. The pension is paid out from selling off the accumulated capital. The individual choice in the premium pension system furthermore results in a spread on return on the pension capital depending on the choice of fund or funds. Table SE2 shows the allocation of assets in the premium pension.

Table SE 2. Funds in the Premium Pension System in 2016 and Capital Managed 2009–2016, December 31, billions of SEK

	2009	2010	2011	2012	2013	2014	2015	2016
Equity fund	179	214	159	193	240	295	347	388
Mixed funds	12	17	41	51	63	77	67	69
Generation funds	38	43	60	71	90	114	128	147
Interest funds	21	24	28	24	27	27	25	127
AP7 Såfa (default)	90	110	105	132	182	246	272	328
Total:	**340**	**408**	**393**	**471**	**602**	**759**	**839**	**959**

Source: The Swedish Pensions Agency, Orange report 2016, p.21

The premium pension has been criticized for having too many selectable funds and for generating large variation in pension outcomes. In 2016, a governmental investigation on how to change the premium pension so that more people get better returns was completed. The investigation's most important proposal is to introduce mandatory re-evaluation choices every 7th year. If individuals do not confirm their chosen fund allocation their capital will be automaticallty moved to the default fund (AP 7 Såfa).[226]

Pillar II: Occupational pensions

The occupational pension system in Sweden is mainly driven by collective agreements. A Swedish company is not required by law to pay a pension to its employees but an occupational pension plan is mandatory if there is a collective agreement at the workplace. The occupational pension system covers over 90% of the workforce, the self-employed are for example

[226] *Fokus Premiepensionen* (SOU 2016:61)

excluded from the occupational pension plans and it is mostly the smaller companies in new sectors of businesses that do not have a collective agreement.[227] There are four main collective agreements for the different sectors and each agreement has its own pension plan. The four collective agreements are: the SAF-LO Collective Pension (blue-collar workers) with 2.8 million members, the Supplementary Pension Scheme for Salaried Employees in Industry and Commerce ITP (white collar employees) with 2 million members, the Collectively Negotiated Local Government Pension Scheme (KAP-KL) with 1 million members and the Government Sector Collective Agreement on Pensions PA-03 with 500,000 members[228].

In all four collectively negotiated pension schemes, the employees are allowed to choose a fund manager for at least part of the pension amount. To ensure that the employers receive an occupational pension that is as high as possible there is a 'choice centre' for each collective pension plan. The 'choice centre's' task is to contract good managers for the employer's occupational pension. The employees can choose between different types of traditional insurance and/or unit-linked insurance. The size of this individual portion depends on the size of the premiums paid by the employer in the form of an annual pension provision, the length of the period during which they are paid, and how the funds are managed. For two of the collective pension schemes, KAP-KL and SAF-LO, the employees can choose a fund manager for the whole amount. If the individual does not choose a fund manager the pension capital will be placed in the default alternative, which in all four agreements is a traditional insurance procured by the choice centre of the occupational pension plan.

If there is no collective agreement at the workplace the company can choose to have an individual occupational pension plan for their employees. Among the companies that do not have a collective agreement, some have chosen to have an occupational pension plan and some do not pay out any pensions at all to their employees. These individual pension plans can vary in shape and level but common to them all is that they often have worse

[227] AMF, *Tjänstpensionerna i framtiden – betydelse, omfattning och trender*, p. 17.
[228] *Pensionsmyndighetens hemsida*: www.pensionsmyndigheten.se/tjanstepensionen-thml

provisions and higher costs compared to the collectively negotiated pension schemes.

In December 2016 Sweden transposed the IORP II Directive. The purpose of the new Directive is to ensure the soundness of occupational pensions and better protect pension scheme members by means of stricter capital solvency requirements. The new directive also clarifies the legal framework for actors in the occupational pension business.[229]

Pillar III: Private pensions

Private pension saving is voluntary but it is subsidized via tax deductions. In 2014, 34.5% of those aged 20 to 64 made contributions to a private pension account.[230] The tax deduction for private pension savings is only profitable for high-income earners.

Private pension savings can be placed in an individual pension savings account (IPS) or in private pension insurance. Money placed in an IPS and in private pension insurance is locked until the age of 55. After that the individual can choose over how many years the pension should be paid out. The minimum payout is 5 years in both IPS and private pension insurance. However, only money in private pension insurance can be paid out for life (annuity).

Unlike the national pension plan and the occupational pension plans, private pension plans are individual. This results in less transparency both when it comes to offered products within the private pension plans and the charges on these products.

The deduction for private pension savings has been reduced over the years. From 1 January 2015 it was reduced from 1,254 EUR to 190 EUR (12,000 SEK to 1,800 SEK) per year, equivalent to 16 EUR (SEK 150) in monthly savings. On 1 January 2016 the deduction was abolished. The motive for this is that the deduction favours high-income earners. In 2015, the share of

[229] See http://fi.se/sv/forsakring/tjanstepension-iorp-2/om-iorp-2/ for more on IORP II.
[230] http://www.statistikdatabasen.scb.se/

private pension savings dropped to 24.2%. Those who still contribute to private pension accounts are thus subject to double taxation.

ISK

"Investeringssparkontot" (Investment and savings account - ISK), is a flat rate savings product with an annual standard rate tax based on the value of the account and the government-borrowing rate. Cash, securities traded on a regulated market or an MTF, and fund shares are the permitted holdings for this type of account. The cash holdings are covered by the deposit guarantee. The securities and the fund shares are covered by the investor protection guarantee. The account is not an insurance product. It is not possible to name a beneficiary, and standard inheritance laws apply.

The product was introduced in January 2012. After the lowering of the deduction for private pension savings, ISK is now regarded as a low tax alternative to private pension savings. ISK has enjoyed widespread popularity and the number of ISK accounts has increased dramatically. In 2016, the number of unique account holders exceeded 1.5 million SEK (see Table SE3). In the same year, ISK funds accounted for 7% of the households' total fund assets as compared to 24% for private pension insurance. The relative importance of ISK is however likely to increase in the future; 49% of net savings in funds in 2016 was allocated to ISK accounts. The Premium Pension (1st pillar) is the most important saving vehicle in funds accounting for 67% of net savings and 27% of total fund assets (see Table SE4).

Table SE 3. ISK accounts

Year	Number of accounts	Number of account holders
2012	222,664	210,895
2013	493,221	453,911
2014	891,550	788,201
2015	1,840,152	1,528,939

Source: Swedish Investment Fund Association

Table SE 4. Household fund assets			
Fund type	Fund assets (SEK)	Net saving (%)	Share of assets (%)
Direct fund investments	467,757	-43	13
ISK	244,789	49	7
IPS	97,703	-9	3
Private pension insurance	841,37	28	24
Premium Pension (1st pillar)	961,472	67	27
Trustee-registered funds	303,381	3	9
NGOs	86,592	-1	2
Swedish companies	384,71	2	11
Others	112,055	4	3
Total	3,499,830	100	100

Source: Swedish Investment Fund Association

Pension vehicles

Occupational pension plans

ITP

The ITP agreement consists of two parts: defined contribution pension ITP 1 and defined benefit pension ITP 2. Employees born in 1979 or later are covered by the defined contribution pension ITP 1. In ITP 1 the employer makes contributions of 4.5% of the salary per year, up to a maximum of 7.5 income base amount. If the salary exceeds this level, the amount of the contribution is also 30% of the salary above 7.5 income-base amount. Half of the ITP 1 pension must be invested in traditional pension insurance but the individual can choose how to invest the remaining half. It can be placed in traditional insurance and/or unit-linked insurance. The premiums of those who do not specify a choice are invested in traditional pension insurance with Alecta. The eligible insurance companies for traditional insurance are Alecta, AMF, Folksam Liv, Skandia Liv, and for unit-linked insurance they are AMF, Danica Pension, SEB Trygg Liv, SPP Liv fund insurance and Swedbank insurance.

SAF-LO

The SAF-LO occupational pension plan is a defined contribution plan by definition. The terms of the plan were improved in 2007, mostly in response to perceived unfairness in the terms of the pension provisions for blue-collar and white-collar workers. Like for ITP 1 the employer now makes contributions of 4.5% of the salary, up to a maximum of 7.5 income-base amounts. If the salary exceeds this level, the amount of the contribution is also 30%. The individual can choose how to invest the pension capital and it can be placed in traditional insurance and/or unit-linked insurance. The eligible insurance companies for traditional insurance are Alecta, AMF, Folksam Liv, Skandia Liv, SEB and for unit-linked insurance they are AMF, Danica Pension, Folksam liv, Handelsbanken, Länsförsäkringar, Movestic, Nordea, SEB, SPP and Swedbank.

PA 03

The pension plan for central government employees, PA 03, is a hybrid of defined contribution and defined benefit. The defined contribution component in PA 03 consists of two parts: individual old age pension and supplementary old age pension. The total premium amounts to 4.5% of the pensionable income up to a ceiling of 30 income-base amounts. Of the total premium, 2.5% and 2% is allocated to the individual pension and the supplementary pension respectively. The individual can choose how the contribution of the individual retirement pension should be placed and managed. Contributions to the supplementary pension cannot be invested by the employee and are instead automatically invested in a traditional low-risk pension insurance fund.

The defined-benefit pension applies to those who earn more than 7.5 income base amounts. If the individual earns between 7.5 and 20 income-base amounts, the defined-benefit pension comprises 60% of the pensionable salary on the component of pay that exceeds 7.5 income base amounts. If the individual earns between 20 and 30 income base amounts it comprises 30% of the pensionable salary on the component of pay that exceeds 20 income base amounts. There is also a defined benefit pension

on income less than 7.5 income base amounts in accordance with transitional provisions due to the implementation of PA 16 (below).

In 2016, a new pension plan, PA 16, for central government employees was implemented. PA 16 covers those born in 1988 or later. Just like PA 03, PA 16 has two defined contribution components. The individual pension (2.5 % of income up to 7.5 income base amounts) can be invested by the employee, whereas the supplementary pension (2% of income up to 7.5 income base amounts) is invested in a low-risk pension insurance fund. The contribution for earnings above the ceiling amounts to 20% and 10%, respectively. PA 16 also contains a defined contribution called flexible old-age pension to which 1.5% of income is contributed. This pension should work as a form of partial pension.

The eligible insurance companies providing individual retirement pension in the shape of traditional insurance are Alecta, AMF, Kåpan, and as unit-linked insurance they are AMF, Danica Pension, Folksam, Handelsbanken, Läsförsäkringar, SEB and Swedbank.

KAP-KL

The KAP-KL agreement consists of two parts: defined contribution pension AKAP-KL and defined benefit pension KAP-KL. Employees born in 1986 or later are covered by the defined contribution pension AKAP-KL. In AKAP-KL, the employer pays in an amount of 4.5% of the salary towards the occupational pension. If the salary exceeds 7.5 income base amounts, the amount is increasing with 30% of the salary that exceeds 7.5 income base amounts up to a maximum of 30 income base amounts. If you are covered by KAP-KL, the employer pays in an amount of 4.5% of the salary to your occupational pension. For a salary over 30 income base amounts, no premium is paid. Instead, there is a defined benefit old age pension that guarantees a pension equivalent to a certain percentage of your final salary at the age of retirement. You start to earn a defined benefit old age pension from the age of 28 and it applies to the part of the salary that exceeds 7.5 income base amounts. The individual can chose how to invest the pension capital and it can be placed in traditional insurance and/or unit-linked

insurance. The eligible insurance companies for traditional insurance in KAP-KL are Alecta, AMF, Folksam, KPA, and for the unit-linked insurance in KAP-KL they are AMF, Danica, Folksam, Handelsbanken, KPA, Länsförsäkringar, Lärarfonder, Nordea and Swedbank.

Charges

Pillar I

The costs of administration and fund management in the funded part of the public pension system - the "*premium pension*"- are deducted from the premium pension capital. However, in this case, the deduction continues to apply after the insured begins to withdraw the pension. The current cost deduction of the premium pension capital is about 0.3% per year. At this level of costs the deduction will decrease the premium pension by an average of about 9% from what it would have been without any cost deduction. The deduction is expected to decrease in the future. The net charges (after deductions) in the public pension system are reported in Table SE5.

Table SE 5. Net charges Pillar I (%)

	2012	2013	2014	2015	2016
Income pension	0.19	0.2	0.2	0.21	0.19
- Adminstrative fee	0.03	0.031	0.033	0.028	0.03
Premium pension	0.37	0.36	0.33	0.3	0.28
- Adminstrative fee	0.1	0.1	0.09	0.07	0.07

Source: Orange report 2016, p. 41

To reduce the costs in the premium pension system, the capital managers associated with the premium pension system are obliged to grant a rebate on the ordinary management fee of the funds. In 2016, the rebates to pension savers were equivalent to a discount in fund management fees of about 0.49 percentage points. The rebates on the ordinary management fees in the premium pension system are of great importance; without them pensions would be approximately 15% lower. Furthermore the pension

savers are in a position to influence the costs of their premium pensions by choosing funds with lower management fees.[231]

To meet the new need of information in the new pension system the orange envelope was introduced in 1999. It contains information about contributions paid, an account statement, a fund report for the funded part and a forecast of the future pension. The purpose of the orange envelope is to get more people interested in their pension and get more attention with the help of the special design, the orange colour and a big concentrated distribution once a year. The orange envelope has now become a brand, a trademark for pensions. Banks and insurance companies use it in their sales campaign and in media the orange envelope is used to illustrate pensions.

Pillar II

The disclosure of charges in the occupational pension system is also quite good, although it can be difficult for the average citizen to understand the information that is available. In the occupational pension system, there is typically a yearly fixed fee and a percentage fee on the capital (i.e. management fee). These are relatively low and range between 0.1 and 0.5% (see Table SE6).

Table SE 6. Charges Pillar II

ITP 1		
Traditional insurance	**Fixed cost, SEK**	**Management fee, %**
Alecta	0	0.13
AMF	50	0.23
Folksam	0	0.25
Alecta (default)	0	0.13
Skandia	85	0.27
Unit-linked insurance		
AMF	0	0.24-0.34
Danica Pension	0	0.13-0.23

[231] Orange report 2016, p. 23.

SEB	0	0.12-0.22
SPP	0	0.10-0.16
Swedbank	0	0.15-0.29

SAF LO		
Traditional insurance	**Fixed fee, SEK**	**Management fee, %**
Alecta	65	0.2
AMF	40	0.18
Folksam	65	0.2
AMF (default)	40	0.18
SEB	65	0.2
Unit-linked insurance		
AMF	60	0.24-0.34
Danica Pension	65	0.18-0.46
Folksam LO	50	0.20-0.37
Handelsbanken	65	0.2-0.4
Länsförsäkringar	65	0.12-0.2
Movestic	65	0.12-0.3
Nordea	65	0.21-0.35
SEB	45	0.14-0.4
SPP	65	0.13-0.27
Swedbank	65	0.28-0.4

PA 03 & PA 16		
Traditional insurance	**Fixed fee, SEK**	**Management fee, %**
Alecta	75	0.2
AMF	75	0.18
Kåpan Pensioner (default)	6	0.12
Unit-linked insurance		
AMF	75	0.24-0.34
Danica Pension	0	0.39
Handelsbanken	75	0.35
Länsförsäkringar	75	0.4

SEB	75	0.14-0.4
Swedbank	75	0.33-0.4

KAP-KL		
Traditional insurance	**Fixed fee, SEK**	**Management fee, %**
Alecta	75	0.2
AMF	75	0.18
Folksam	72	0.2
KPA (default)	48	0.15
KPA Pension	48	0.15
Unit-linked insurance		
AMF	75	0.24-0.34
Danica Pension	0	0.39
Folksam LO	75	0.34-0.44
Folksam Tjänstemannapension	75	0.34-0.44
Handelsbanken	75	0.35
KPA Pension KPA SmartPension	75	0.4
Länsförsäkringar	75	0.4
Lärarfonder	75	0.38-0.45
Nordea	75	0.3-0.4
SEB	75	0.31-0.4
Swedbank	75	0.33-0.4

Source: The Swedish Consumers' Insurance Bureau[232]

Pillar III

For the private pension system, however, it is difficult to get a good overview of the available pension products and hence the charges on these products. There are two tax-favored (pre-2016) private pension veichles: IPS and private pension insurance. The majority of pension providers of IPS and private pension insurance charge a fixed fee (see Tables SE7 and SE8).

[232] http://www.konsumenternas.se/pension/pensionens-olika-delar/pensionsguiden/om-kollektivavtalade-tjanstepensioner/jamfor-kollektivavtalade-tjanstepensioner

These typically range between 10 and 40 EUR per year. In IPS, only two out of eleven providers charge a management fee. Instead, the individual is subject to fund fees which vary substantially by fund type and pension provider.

In private pension insurance accounts, the fee structure depends on whether the capital is unit-linked or traditional. Traditional insurance only imposes a management fee whereas unit-linked insurance both contains management and fund fees. In some cases, investors also pay a deposit fee of 1 to 2%. The savings invested in these products will decrease since the deduction for private pension savings was abolished in January 2016.

Table SE 7. Individual Pension Savings Account (IPS) – Fees

	Fixed fee, SEK	Management fee, %	Fund fee (mixed funds), %
Aktieinvest	0	0.00	0.10-1.90
Avanza Bank	0	0.00	0.00-2.50
Danske Bank	150	0.00	1.00-1.40
Handelsbanken	0	2.00	0.40-1.50
Indecap	125	2 (max SEK 125)	0.70-1.30
Länsförsäkringar Bank	125	0.00	0.40-2.20
Nordea	140	0.00	0.40-2.75
Nordnet Bank	0	0.00	0.40-2.70
SEB	150	0.00	1.10-1.35
Skandiabanken	0	0.00	0.20-2.50
Swedbank	0	2 (max SEK 125)	0.20-1.60

Source: The Swedish Consumers' Insurance Bureau
http://www.konsumenternas.se/pension/pensionens-olika-delar/om-eget-pensionssparande/jamfor-ips

Table SE 8. Pension Savings Insurance – Fees				
Traditional insurance	**Fixed fee, SEK**	**Management fee, %**	**Fund fee (standard portfolio), %**	**Deposit fee, %**
Folksam Pensionsförsäkring Traditionell	288	0.87		1.00
SEB Traditionell Försäkring	179	1.10		0.00
Skandia Framtid Internet Traditionell	0	0.64		2.00
Skandia Framtid Rådgivning Traditionell	0	0.84		2.00
SPP PLUSpension Traditionell	0	0.56		0.00
Unit-linked				
Avanza Pension PrivatPension Depå	0	0	0.1	
Brummer Life PrivatPension Rådgivning Fond	0	0.25-0.65	0.02	
Danica Pension PrivatPension Fond	120	0.5	0.58	
Danica Pension PrivatPension Netto Fond	120	0	0.47	
Folksam Pensionsförsäkring Fond	0	0.7	0.33	
Handelsbanken Privatpension Fond	295	0.75	0.40	
Länsförsäkringar Privatpension Fond	60	0.5	0.43	
Movestic Pension Privat Fond	240	0.4-0.55	0.87	
Nordea Ålderspension Fond	269	0.4	0.53	
Nordnet Privatpension Depå	269	0	0.10	

SEB Privat Pensionsförsäkring Fond	141	0.65	0.51
SEB Svensk Depåförsäkring	0	0.9	0.51
Skandia Privatpension Depå	289	0.95	0.20
Skandia Privatpension Internet Fond	0	0.1-0.65	0.51
Skandia Privatpension Rådgivning Fond	0	0.65	0.51
SPP PLUSpension Fond	360	0	0.26
Swedbank Pensionsförsäkring Depå	0	0.65	0.15
Swedbank Pensionsförsäkring Fond	240	0.65	0.15

Source: The Swedish Consumers' Insurance Bureau
http://www.konsumenternas.se/pension/pensionens-olika-delar/om-eget-pensionssparande/jamfor-privata-pensionsforsakringar

ISK

On ISK there is an annual standard rate tax, based on the value of the account as well as the government-borrowing rate. The financial institutions report the standard rate earnings to the tax authorities and there is no need to declare any profit or loss made within the account.

The calculation of the standard rate earnings is based on the average value of the account as well as the government-borrowing rate. The average value of the account is calculated by the account value of the first day of each quarter added together, divided by four, and the sum of all deposits during the year divided by four. The average value of the account multiplied with the government borrowing rate as of 30 November the previous year, plus 0.75 percentage points (minimum 1.25%), gives the standard earnings.[233] The standard earnings are reported to the tax authority by the financial institutions. The standard earnings are taxed with a 30% tax. In

[233] Before 2016, the standard earnings were given by the average value of the account multiplied with the government borrowing rate.

2016, the government borrowing rate was 0.65%, which means that the calculated average value of an account is taxed with 0.42%. The table below reports the total and average standard earnings for years 2012-2015, respectively.

Table SE 9. ISK standard earnings		
Year	Standard earnings (mln. SEK)	Average standard earning per account holder
2012	714	3,387
2013	2,023	4,458
2014	5,467	6,936
2015	3,952	2,585

Source: The Swedish Tax Agency

In contrast to individual pension savings accounts, the investment and savings accounts are free from management fees. The taxation of the accounts is very favourable, and the Swedish Pensions Agency considers the investment and savings account as a great alternative to the individual pension savings account. There is no binding period, and withdrawals can be made free of charge at any given time. The taxation of the account is more favourable during periods with low borrowing rates, as the standard rate earnings are based partially on the government-borrowing rate. Since ISK was introduced in 2012, the economy has been characterized by low interest rates and a positive stock market development. This, in combination with the abolishment of the deduction for private pension savings, has contributed to the rapid spread of ISK accounts.

Taxation

Taxation during the accumulation phase looks different in the different pillars. In the public pension, individual contributions are deductible from the tax base and there is no tax on returns. Employers can partially deduct contributions to the second pillar.[234] When it comes to private pension savings, there was a tax deduction of 1,800 SEK per year available but it was

[234] Deductible contributions amount to maximum 35% of the wage of the employee. However, the deduction cannot exceed 10 prise base amounts.

abolished in January 2016. There is no tax on returns in the first pillar. By contrast, returns in the occupational pension system and in private pension vehicles are subject to an annual standard rate tax based on the value of the account and the government-borrowing rate. Specifically, the value of the account on January 1st multiplied by the government borrowing-rate gives the standard earnings which are then subject to a 15% tax.

During the decumulation phase, all pension income in Sweden is taxed as earned income. The rate varies depending on the size of the pension payment due to the progressive income taxation in Sweden. The Swedish income tax is even higher for pensioners than workers because of the earned income tax credit.[235] The Swedish tax system works as follows. A proportional local tax rate applies to all earned income, including pension income. Furthermore, for incomes above a certain threshold, the taxpayer also has to pay central government income tax. The government income tax consists of two brackets. The marginal tax rates in each bracket are 20% for incomes between 44,168 EUR and 64,250 EUR (430,200 SEK and 625,800 SEK) and 25% for incomes from 64,250 (625,800 SEK)[236] and above.

Table SE 10. Taxation on pension schemes

	National pension	Occupational pension	Private pension
Contributions	Individual contribution deductible, not employer's part	Partially deductible	Non-deductible from January 1 2016
Tax on investments	Not subject to tax, instead the capital is taxed with income tax when payed out.	Subject to tax rate on standard earnings (15% in 2016)	Subject to tax rate on standard earnings (15% in 2016)
Pay-out	Income tax	Income tax	Income tax

[235] The Swedish earned income tax credit is a refundable tax credit for all individuals aged below 65.
[236] Financial year 2016, https://www.skatteverket.se/download/18.361dc8c15312eff6fd119/1457956106182/belopp pochprocentkort_2016.pdf

Pension Returns

This section reports on returns on pension capital in the first and second pillars. There are no readily available data on returns in the private pension system – one would have to turn to the homepage of each pension provider for this information.

Pillar I

Table SE11 shows average annual returns for default investors and those who opted out of the default. The average fee for the default fund and for "active" investors over this period is 0.14 and 0.42%, respectively.

Since the start of the premium pension in 2000, the default fund has on average performed better than the average "active" investor. It is important to remember that the "active" investors also include inert investors, i.e. investors that at some point made an active but then remained passive. The average returns for the "truly" active investors are therefore underestimated. In fact, Dahlquist, Martinez, and Söderlind (2016) find that investors who are actively involved in managing their pension accounts earn significantly higher returns than passive (inert) investors.

The level of acticity has changed significantly since the launch of the Premium Pension in year 2000. 67% of those who entered the system in year 2000 chose their own portfolio of funds. Among those as many as 32% have not made any subsequent choice. This can be compared with individuals that joined the system in 2010, for example. Of those only 1.6% percent opted out of the default in the first year. Five years later only 10% had made an active choice. The fact that the default fund on average has outperformed the active investors in most years is probably one explanation as to why an increasingly larger share chooses to stick with this option.

Table SE 11. Average return (%) on Capital in the Premium Pension System						
	AP7 Såfa (default)			Other funds		
Year	**Nominal**	**After charges**	**Net return**	**Nominal**	**After charges**	**Net return**
2002	-27.3	-27.4	-29.6	-33.3	-33.9	-36.1
2003	18.4	18.2	16.3	17.3	16.7	14.8
2004	10.1	10.0	9.6	8.1	7.6	7.2
2005	24.9	24.8	24.3	33.0	32.4	31.9
2006	10.5	10.4	9.0	12.9	12.3	10.9
2007	4.6	4.5	2.3	6.0	5.6	3.4
2008	-36.1	-36.3	-39.7	-33.4	-33.8	-37.2
2009	35.0	34.8	35.1	34.5	34.1	34.4
2010	14.6	14.4	13.1	11.3	10.9	9.6
2011	-10.7	-10.9	-13.5	-10.8	-11.1	-13.7
2012	17.6	17.4	16.5	10.2	9.8	8.9
2013	31.8	31.7	31.7	16.8	16.4	16.4
2014	28.9	28.8	29.0	17.0	16.6	16.8
2015	6.3	6.2	6.2	6.5	6.2	6.2
2016	15.2	15.1	14.1	8.6	8.3	7.3
Average return	**9.9**	**9.8**	**8.7**	**7.1**	**6.7**	**5.5**

Source: The Swedish Pensions Agency

Pillar II

Table SE12 shows returns for the occupational pension system. The first column shows the average return over the last 5 years. The next three columns display the nominal return, the nominal return net of charges, and the real return (net of charges and inflation) for year 2016, respectively. The inflation in 2016 was 1%.

Table SE 12. Return on capital, 2nd pillar, %				
ITP1				
Traditional insurance	**Av. return 5 years**	**Return 2016**	**Net of charges**	**Net return**
Alecta	12.54	5.80	5.67	4.67
AMF	11.80	8.60	8.37	7.37
Folksam	11.88	8.12	7.87	6.87
Alecta (default)	12.54	5.80	5.67	4.67
Skandia	7.06	4.20	3.93	2.93
Unit-linked insurance				
AMF	13.70	11.00	10.66	9.66
Danica Pension	16.82	16	15.77	14.77
SEB	16.94	9.74	9.52	8.52
SPP	*16.08*	*13.08*	*12.92*	*11.92*
Swedbank	*15.03*	*8.58*	*8.29*	*7.29*
SAF-LO				
Traditional insurance	**Av return 5yrs**	**Return 2016**	**Net of charges**	**Net return**
Alecta	12.54	5.80	5.60	4.60
AMF	11.80	8.60	8.42	7.42
Folksam	11.88	8.12	7.92	6.92
AMF (default)	11.80	8.60	8.42	7.42
SEB	8.86	4.00	3.80	2.80
Unit-linked insurance				
AMF	13.70	11.00	10.66	9.66
Danica Pension	16.78	15.80	15.34	14.34
Folksam LO	15.51	10.07	9.70	8.70
Handelsbanken	16.35	9.40	9.00	8.00
Länsförsäkringar	*13.00*	*13.00*	*12.80*	*11.80*
Movestic	11.97	9.60	9.30	8.30

Nordea	*13.29*	*11.49*	*11.14*	*10.14*
SEB	16.65	9.74	9.34	8.34
SPP	*16.08*	*13.08*	*12.81*	*11.81*
Swedbank	*15.29*	*9.41*	*9.01*	*8.01*

PA-03				
Traditional insurance	**Av return 5yrs**	**Return 2016**	**Net of charges**	**Net return**
Alecta	12.54	5.8	5.6	4.6
AMF	11.8	8.6	8.42	7.42
Kåpan Pensioner (default)	8.6	7.3	7.18	6.18
Unit-linked insurance				
AMF	13.7	11	10.66	9.66
Danica Pension	15.46	15.9	15.51	14.51
Handelsbanken	15.43	11.54	11.19	10.19
Länsförsäkringar	14.16	11.47	11.07	10.07
SEB	14.41	13.66	13.26	12.26
Swedbank	14.59	9.91	9.51	8.51

KAP-KL				
Traditional insurance	**Av return 5yrs**	**Return 2016**	**Net of charges**	**Net return**
Alecta	12.54	5.80	5.60	4.60
AMF	11.80	8.60	8.42	7.42
Folksam	6.14	5.33	5.13	4.13
KPA (default)	7.80	6.70	6.55	5.55
KPA Pension	7.80	6.70	6.55	5.55
Unit-linked insurance				
AMF	13.70	11.00	10.66	9.66
Danica Pension	15.46	15.90	15.51	14.51

Folksam LO	15.20	9.52	9.08	8.08
Folksam Tjänstemannapension	15.35	11.86	11.42	10.42
Handelsbanken	15.12	11.54	11.19	10.19
KPA Pension KPA SmartPension	15.12	7.60	7.20	6.20
Länsförsäkringar	14.16	11.47	11.07	10.07
Lärarfonder	14.40	10.98	10.53	9.53
Nordea	14.05	11.49	11.09	10.09
SEB	14.73	13.66	13.26	12.26
Swedbank	13.97	9.91	9.51	8.51

Source: The Swedish Consumers' Insurance Bureau

Conclusion

The Swedish pension system is considered robust and sustainable. The balancing of the income-based system contributes to preserving the system's debt balance and secures the long-term nature of the system. The premium pension, which is a system unique to Sweden, also contributes towards spreading the risk in the system and enhancing the return on capital by enabling people to place part of their national pension capital on the stock market. As a result of the change in the Swedish pension system, individual responsibility will increase and the occupational pension will constitute a bigger part of the total pension in the future. The occupational pension system in Sweden covers 90 percent of the working population. The collectively negotiated pension schemes are procured for a large number of workers, which leads to lower costs, and more transparent pension plans. Individual pension plans are, on the other hand, often exactly individual, which leads to increased costs and less transparency.

The statistics on performance, fees and taxes in the area of individual pension savings is quite insufficient. Neither the Swedish Pensions Agency, nor the Swedish Consumers' Banking and Finance Bureau, nor the Swedish Consumers' Insurance Bureau, or any other similar provider of statistics,

have been able to provide the requested data. The Swedish central bank does publish quarterly financial market statistics including statistics on individual pension savings. The statistics include taxes and fees, deposits, withdrawals and change of value. Although the statistics include relevant information, it is not possible to calculate the average performance, or average taxes and fees-percentage (the financial institutions report taxes and fees as a single post) due to the lack of knowledge regarding the size of the managed capital at the time of taxation, change of value and so on. It is also difficult to find statistics on performance in the so-called ISK accounts, the new, and very popular, low-tax alternative to private pension insurance. All of the 15 financial institutions that provide ISK accounts offer a vast number of selectable funds.

Although the Swedish pension system is considered robust and sustainable there is reason to be concerned. As life expectancy increases, the gap between wages and pensions will increase. To stop this development the actual retirement age must be raised and the individual also need to take more responsibility for their pension savings. This makes it even more important with accessible good pension savings products with low fees.

Another source of concern is that the pension system is becoming increasingly complex. The number of occupational pension plans per individual is increasing both because job switches across sectors become more common and because pension capital can be moved between companies. All three pillars also contain many elements of individual choice both during accumulation and decumulation phase. Pension systems that are too complex risk leading to inertia and distrust, which in turn could lead to worse saving and retirement outcomes. Well-designed default fund options with low fees and appropriate risk exposure as well as comprehensive, user-friendly information/choice centers are necessary features in a complex pension system.

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- Vägval för premiepensionen, DS 2013:35, http://www.regeringen.se/rattsdokument/departementsserien-och-promemorior/2013/05/ds-201335/

Pension Savings: The Real Return

2017 Edition

Country Case: The Netherlands

Introduction

Although the Dutch can boast to have one of the best pension systems in the world (in a recent annual Mercer pension system review, the Dutch ranks second, only marginally trailing the Danish pension system), many in the Netherlands worry about the future of their old-age income. A recent survey by consultancy company Willis Towers Watson, for example, showed that 28 percent of those enrolled expect to have a pension shortfall in the next 15 years and hence not enough means to support themselves financially. This is a larger share than in other countries covered in the same survey. Only 7 percent of other Europeans for example felt the same way.

One reason why a significant number of Dutch are more worried in the short term could be due to the fact that they have a lot to lose from the structuraly low interest rates, with the world's largest pension reserves. In many ways the Dutch have a luxury problem compared to their counterparts in many other countries. Perhaps that's the reason why at the end of the day 58 percent says not to worry at all about their income when they retire. The three pillars of the Dutch pension system are the reason since together, they form a strong structure.

In this report we will provide an outline of the Dutch pension system, which is in many aspects unique in the world, and take a look at the annual returns on investment of pension funds and calculate the real return, adjusting the nominal return for various charges, taxes and inflation. After all, healthy returns are the only way to keep those 58 percent of Dutch savers worry-free and to further increase that percentage.

Description of the Dutch pension system

The Dutch pension system rests on three pillars. We will describe all three in some detail.

The first pillar

Pillar one is a social insurance scheme and consists of the Dutch state pension, called AOW (Algemene Ouderdomswet or General Old-age Law). It provides a state pension for all elderly inhabitants of the Netherlands, regardless of their nationality. For a long time'elderly' (for the purpose of this law) meant 65 or older. Recently the age was increased to beyond 65, mainly to maintain the system's viability in the future as, due to ageing, the costs threaten to become too high. The reason for this is the fact that AOW is a pay-as-you-go system: it is financed by those in the workforce and the proceeds are used to pay the elderly. Each person between 15 and 65 years of age, either working or on benefits, contributes to the AOW-financing via a deduction from the salary or a benefit. In addition, the AOW is partially financed by taxes the government collects each year. Every inhabitant of the Netherlands is automatically enrolled in the AOW-system in such a way that he or she is entitled to 2 percent of the maximum monthly allowance for each year he/she has lived in the Netherlands between the ages of 15 and 65 (so someone living in the Netherlands during that entire period is entitled to a full monthly AOW-allowance since 65-15 = 50 x 2 percent = 100 percent of the allowance).

A single person is entitled to a monthly allowance (gross) of €1,224.96. Married or couples living together receive (gross) €845.74 a month each. The AOW generally makes up approximately a fifth of the entire old-age pension as pillars two and three - especially pillar II - are the most important ones for a large part of the Dutch population. For a typical Dutch male the second pillar provides just over a third of his total retirement income. For the female population, AOW does constitute a larger part of their retirement income, approximately half, with the second pillar representing a share of 35 percent. The reason for this is the fact that women only recently became active on the labour market. For a long time,

a traditional Dutch family was supported by one income, mostly earned by the male. This meant that for a long time, the female population was not enrolled in the second pillar (see below) and therefore the retirement income of that part of the population is largely determined by the AOW.

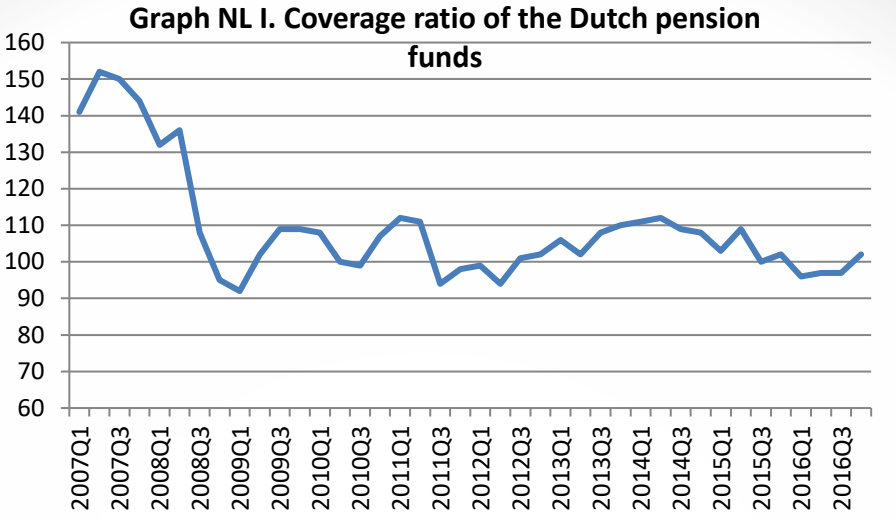
The second pillar

Pillar two is a system of collective pension schemes operated by pension funds or insurance companies. Little over a decade ago, there were more than 1000 pension funds operating in the Netherlands. Over the years, many merged or were liquidated (with their assets and liabilities transferred to other pension funds or insurance companies). As a consequence, the number of pension funds (active and dormant) dropped to 290 by the end of 2016 (the counting is based on the data on pension funds available from the DNB, the Dutch central bank). The number of active pension funds is expected to fall further in the years to come.

Whereas the first pillar, the AOW, is a pay-as-you-go scheme, the second pillar is financed by capital funding. Each person enrolled in a pension fund contributes to its pension fund (with the employer paying a part of the contribution, often 50 percent or even more). The money is then invested in order to fund the retirement payouts.

Although enrollment in a second pillar scheme is not compulsory as such, in many cases it really is. This is because labour unions and employers in the Netherlands can decide to set up a pension scheme for a company or a sector, which the government can then make mandatory for everyone working in that company or in the entire sector. In practice, almost every working person is enrolled in a pension scheme. The government makes it mandatory in order to achieve economies of scale. That, in turn, makes it possible for pension funds to operate more efficiently in terms of costs and fees they have to pay for investing the funds. In practice, more than 90 percent of Dutch employees are enrolled in one or more pension fund(s). An employee can be enrolled in more than one pension fund if he/she for example moves to another job in another sector. In that case he/she starts building his/her pension with the pension fund of the new sector or

company. His/her old pension capital can be left in the former pension fund or, subject to some rules, transferred to his/her new pension fund. This can be done if both pension funds have sufficient capital as required by law. The law defines 'sufficient' as being at least 105 percent of the value of future liabilities (i.e. retirement outflows). This so-called coverage ratio is calculated by discounting the future pension liabilities. Future pension liabilities for a period of up to 20 years are calculated by using the actual market interest rates for 0 to 20 years. The discount interest rates for periods from 20 years onwards are calculated by the Dutch central bank. Interest rates calculated this way are called Ultimate Forward Rates (UFR). Until recently, this UFR was fixed at 4.2 percent. From mid July 2015 this changed and the UFR is now a 120-month moving average of the 20-year forward rate which in effect means that it is much lower than the 4.2 percent used previously. As a consequence, the coverage ratio of the Dutch pension funds fell further. The lower the interest rates on financial markets, and hence the UFR, the higher the value of future liabilities is and the greater the chance the required coverage ratio (in Dutch 'dekkingsgraad') will drop below 105. When this cover ratio falls below 105, the pension fund involved is required to submit a plan on how it plans to get the coverage ratio back to above 105 in three - at the most five - years. It also has to submit contingency plans in case the coverage ratio does not rise above 105 over that period of time. When the coverage ratio falls below 130 but stays above 105, the pension fund involved is not allowed to adjust pensions for annual inflation. This is only allowed when the coverage ratio is above 130.



Source: DNB Dutch central bank

According to the statistics from the Dutch central bank, the coverage ratio was more than sufficient for almost all pension funds prior to the current crisis. For example, in the fourth quarter of 2007, only two pension funds had a coverage ratio below 105. 151 pension funds reported a coverage ratio of between 105 and 130, and 283 of them had a coverage ratio of 130 or more. By the final quarter of 2016, however, 93 pension funds did not comply with the rules as they had a coverage ratio below 105. Some 3.8 million Dutch were affected, more than 70 percent of all those enrolled. Additionally, 115 funds were in the 105-130 zone and only 11 reported the coverage ratio of 130 or higher (available information shows that in the course of 2017 so far, the situation has strongly improved, with the number of pension funds below the 105-threshold falling to 77).

Note that this system does not mean that there is an individual pension account for each participant though. The system is highly based on solidarity between generations as young workers pay relatively more in the first part of their career and relatively less in the later stages. Differences in gender or age do not play a role. The same applies to health: medical examination of those about to enroll in a pension fund is prohibited. This

concept works fine as long as we do not get into a situation where there are more ageing workers than young ones entering the workforce.

Sidenote: this solidarity is increasingly under pressure as many young employees in the Netherlands fear that they will end up paying relatively large sums into their pension funds but that there will be insufficient funds in there to draw a decent income when they retire (due to ageing, a relatively large number of the Dutch will reach retirement age in the coming years and hence draw quite a lot of funds from their pension funds). There are more and more of those calling for a radical overhaul of the Dutch pension system whereby each individual would have his/her own capital instead of all monthly payments going into one pile of money. Chances are that the second pillar of the Dutch pension system will undergo profound changes in the years to come.

The third pillar

Pillar three is made up of individual pension products sold by insurance companies. Life insurance is an example. Another product used in the Netherlands is the so-called 'pensioensparen', a special-purpose savings account aimed at accumulating supplementary income after retirement. Anyone in the Netherlands can enroll in this pillar, either simply to save for retirement (there are those who do not fall in the second pillar scheme described above, for example entrepreneurs or those working in a sector or a company without a pension fund of its own) or to supplement the retirement income from the first and the second pillar. The purchase of various third-pillar products is attractive due to tax benefits associated with them.

Pension Vehicles

Second pillar

As mentioned, there are many pension funds operating in the Netherlands. However, their number has declined in recent years and is expected to fall even further. Some of the funds are financial giants, with millions of people

enrolled and hundreds of billions of euros in assets while others have just a few (tens) participants and a couple of millions of euros invested. In the table below we provide some statistics for the 5 largest pension funds in the Netherlands.

Table NL 1. LARGEST PENSION FUNDS IN THE NETHERLANDS

Pension fund	Sector / company	Assets (bn EUR)
ABP	Civil service	422.3*
Zorg en Welzijn	Medical services	209.3*
Metaal en Techniek	Metal	71.9**
Bouwnijverheid	Building companies	52.5**
Metalelektro	Electrometal sector	40.5**

**Assets at the end of 2016, as reported in annual reports or other financial disclosure documents*
*** Assets at the end of 2015, as reported in annual reports or other financial disclosure documents*

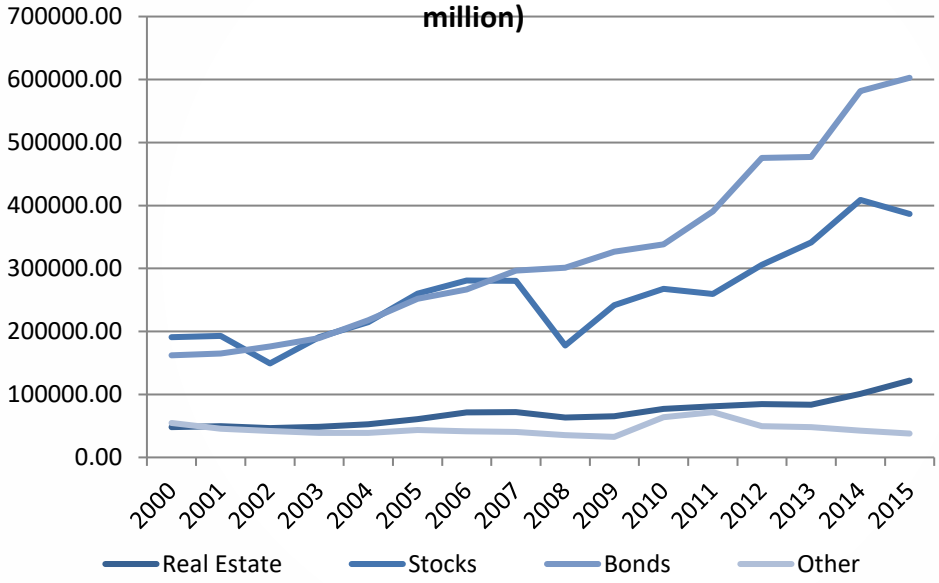
There are three different sorts of pension funds in the Netherlands. First, we have the industry-wide pension funds. Those administer and operate the pensions for an entire sector, such as food companies or the civil service. The civil service pension fund, ABP, is by far the largest in the country with assets worth €422.3 billion and 2.8 million people enrolled. Second, there are corporate pension funds, administrating and operating pension schemes for companies. Finally, there are pension funds for independent professionals, for example medical specialists.

Pension funds are independent entities, i.e. they are strictly separated from the company (if applicable) on whose behalf they administer and run the pension scheme. One of the consequences is that if a company files for bankruptcy, employees are safe in the knowledge that their pensions are not affected. Situations such as, for example, in the United States with a company filing for bankruptcy and its personnel losing not only their jobs but their pension savings as well, are not possible in the Netherlands. Pension funds are run by a board consisting of an equal number of

employee representatives (labour unions) and employer ones. Pension funds are by far the most important pillar for Dutch citizens.

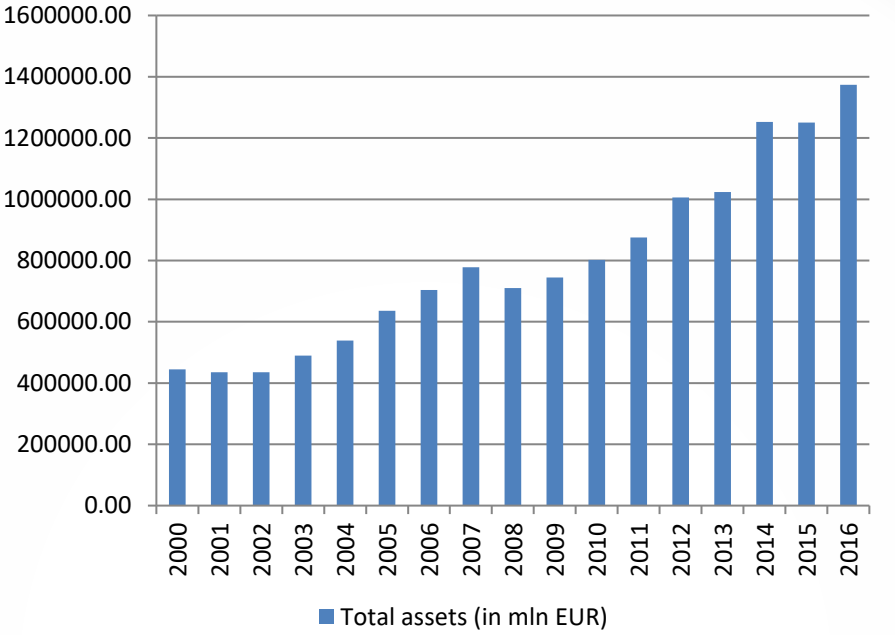
By the end of 2016, all Dutch pension funds together had assets worth €1,373.2 billion. To put that into perspective: the Dutch gross domestic product is approximately €600 billion. In other words, the pension assets from the pension funds alone (i.e. excluding third pillar assets) exceed the Dutch GDP by well over 200 percent. The total share managed by the 15 largest pension funds represents 62 percent of assets. The five largest ones hold 58 percent of all pension assets in the Netherlands.

Graph NL II: Pension fund assets invested in stocks, bonds, real estate and other assets over time (in € million)



Source: DNB Dutch central bank

Graph NL III. Assets of pension funds



Source: DNB Dutch central bank

Third pillar

The third pillar is not mandatory and is run by private insurance companies offering various pension-like products like saving for retirement or life insurance. Every employee can choose whether or not to take part in it, sometimes provided he/she fulfills the conditions to enroll as stated by the law. The most important condition in order to benefit from tax benefits associated with these products is that one has to have a shortfall in his/her pension (called 'pensioentekort' in Dutch). There is an annual maximum amount any Dutch inhabitant can pay in for his retirement income. This maximum, determined by the Dutch tax authority on a yearly basis, ensures one has an acceptable retirement income. If for any reason one contributes less than the maximum amount allowed, he/she is considered to have a pension shortfall and the person involved can deposit the amount equal to the difference between the maximum allowed retirement contribution and

the paid contributions into a savings account for retirement income. This difference is subject to a maximum which in 2017 amounted to € 12,598. There is a tax benefit involved since contributions can be deducted from the taxable income, effectively reducing the income tax one has to pay. Moreover, the pay-out upon retirement is taxed at a lower tax rate than a current income. Once one determines that he/she has a pension shortfall and decides to deposit the difference on that special-purpose savings account, the deposit(s) cannot be withdrawn before retirement.

The share of those third-pillar products in the retirement mix of the Dutch households is relatively low. Currently life insurance schemes for example account for circa 10 percent of the accrued pension rights of the Dutch households (down from almost 14 percent at the end of 2013), according to calculations made using statistics on pensions from the Dutch central bank. This shows that the second pillar is far more important and more relevant for the Dutch than the third pillar is.

Charges

Obviously, in order to make money, pension funds must spend money, i.e. there are various fees and other costs involved with investing their assets on the financial markets.

However, these costs were very difficult to obtain and when they were available, they must be interpreted with a great deal of caution. For example, even the Dutch central bank stated in an article from May 2014 that “there are reasons to believe that not all costs are reported”. The reason is not that the pension funds do not want to report them, but rather that even they are not able to determine them. For example, some companies that invest the assets of pension funds do not report all costs separately, because it is not in their interest to do so. The Dutch financial watchdog AFM has called upon those companies to disclose all costs. Another difficulty is that transaction costs, i.e. costs associated with transactions in the financial markets such as purchase or sale of stocks and bonds or shares in investment funds for example, are not always available.

The consequence is that in previous years when the DNB asked the Dutch pension funds to provide the supervisor with, among others, an analysis and details of all the costs they incur, 70 pension funds were not able to report all costs associated with their investments. According to the Dutch financial watchdog AFM, "readers of annual reports are not able to get a clear picture of the relationship between costs, returns and risks pension funds are taking"[237]. Just to illustrate how important costs are in the whole picture: according to the AFM, lowering costs by a 0.1% point leads to a 3% point higher retirement income in the medium term.

Recently, much effort has gone into making sure all costs are accounted for. The first results are already observable. Recently, the Dutch central bank started publishing a new set of data, containing total charges – that is including transaction costs – for individual pension funds under its supervision. This will help various stakeholders to develop a much clearer picture of the performance of Dutch pension funds than they do currently. Sadly, the data is only available starting from 2015.

This new data set does enable us to calculate the real performance of the Dutch pension funds more accurately starting from the reporting year 2015. For this report, therefore, we have used the new data set to recalculate the real return of pension funds in 2015. Since the new data set does not provide charges for the period prior to 2015, we have calculated the real returns for the period 2000 up to and including 2014 using the (incomplete) data the Dutch central bank reported for 2007 onwards. Since the Dutch central bank does provide absolute costs, we re-calculated those costs as a percentage of total assets. Costs thus obtained are reflected in the table below.

[237] Research report by AFM on information on various charges pension funds incur and how they report those in their annual reports, entitled 'Op naar een evenwichtige verantwoording over deze kosten in jaarverslagen van pensioenfondsen', July 2014

Table NL 2. Pension fund charges (% of total assets)	
Year	**Charges**
2007	0.20
2008	0.24
2009	0.19
2010	0.15
2011	0.19
2012	0.21
2013	0.23
2014	0.17
2015	0.5*
2016	0.5**

** Charges as reported in the new data set by the Dutch central bank*

*** Estimate, based on the change in total charges at the largest pension fund in the Netherlands, ABP, in 2015 and 2016*

Source: DNB Dutch Central Bank / own calculations

It is important to note that the real annual return for the years prior to 2015 is most likely lower than calculated, given the fact that the new data set shows that total charges were significantly higher than in previous years. For example, the new data set shows that average charges were 0.5% of total assets, more than double the charges the central bank reported for previous years. Another indicator pointing towards the same trend comes from some sporadically conducted research on total charges undertaken in previous years. For example, in 2012 reasearchers at consultancy bureau Lane, Clark & Peacock put those costs for the Dutch pension funds at 0.53% of their assets. CME Benchmarking, a Canadian global benchmarking company, calculated that the average cost of Dutch pension funds in 2012 amounted to, on average, 0.44% of their assets, with the median being 0.41 percent.

Taxation

Pension funds are exempted from paying company taxes in the Netherlands[238]. The money Dutch employees pay into their pension funds during their working life is deducted from their gross income and therefore not taxed. In this sense, they enjoy a tax break as their taxable income decreases, as a result of which they fall into a lower tax bracket. As stated, pension funds then invest these funds in order to be able to pay out an income upon reaching retirement age. The return, i.e. the increase in pension rights, is not taxed either. When the Dutch reach retirement, however, their pension is subject to the personal income tax rates in the pay-out phase. This so-called deferred taxing of pensions means the Dutch enjoy yet another tax benefit as tax rates are lower than taxes on current income. In the Netherlands, income is taxed at various rates, which increase as the income increases. The tax rates are lower for those aged 65 and older. Just as an example, in the table below, we provide the tax rates for someone older and younger than 65 years of age in 2017, as provided by the Dutch Tax Authority.

TABLE NL3. Income tax brackets for various age groups

Income bracket (EUR) / age	Younger than 65	65 and older
0 – 19,982	36.55 %	18.65 %
19,983 – 33,791	40.8 %	22.9 %
33,792 – 67,072	40.8 %	40.8 %
over 67,073	52.0 %	52.0 %

This means that the tax deferral of pensions constitutes an advantage to an individual, as his/her tax rate is lower when he/she turns 65. Using various sources - mainly the historical data from the Dutch Tax Authority - we have

[238] Article 3 of the law, available via (in Dutch) http://www.rijksoverheid.nl/documenten-en-publicaties/besluiten/2009/12/15/vennootschapsbelasting-subjectieve-vrijstellingen-artikel-5.html

been able to compute the average tariff applied to the income of retirees for the first three brackets since 2002. We have used the tariffs for the first three income brackets. In practice these are the tax brackets that apply to the vast majority of the Dutch retirees as a vast majority of the Dutch retirees fall in the first three income brackets. For each year we have calculated the average tariff and then, using those numbers, we get to the average annual tariff for the period 2002 – 2015. The average annual tariff thus calculated is 26.9%.

As stated earlier, contributions towards pensions are deducted from the gross income. In order to calculate the net tax advantage, we have to compare the average tax rate that is applied to pensions (as stated: 26.9 percent) and the average tax rate that would have applied if contributions towards pension income were not tax exempted. We can estimate this average tax rate by computing the average of the first three brackets for each year for people younger than 65 years of age and then determine the average for the period 2002 – 2015. This average is 39.25%, which means than the average person in the Netherlands enjoys 12.35% point tax advantages on his/her pension scheme due to the fact that pension contributions are tax exempted and only pension income is taxed. At the end of this report we will report on the return for an individual, after net personal income tax has been taken into consideration

Pension Returns

As stated, the pensions Dutch employees receive upon reaching the statutory retirement age depend on their pension funds achieving enough return on their investments. We will report nominal annual, aggregate returns for all Dutch pension funds from 2000 onwards, by using the statistics provided by the Dutch central bank, which supervises pension funds and insurance companies. Annual returns will be reported for life insurance companies as well.

Then we will focus on various charges and fees pension funds must pay. Those costs must be subtracted from the returns, as only net returns are available for retirement income. In order to calculate the real rate of return,

we will deduct the annual inflation in the Netherlands, as reported annually by Statistics Netherlands (CBS). Statistics Netherlands publishes two different inflation measures. One is calculated according to the EU-method (Harmonized Index of Consumer Prices, which is developed in order to be able to compare inflation rates in the EU-nations); the other is the traditionally used Dutch method of inflation calculation. Although the latter one matters for the annual indexation of Dutch pensions, we will use the EU-method of calculation of the real rate of return later on in order to make the Dutch results comparable with the results from other European countries[239].

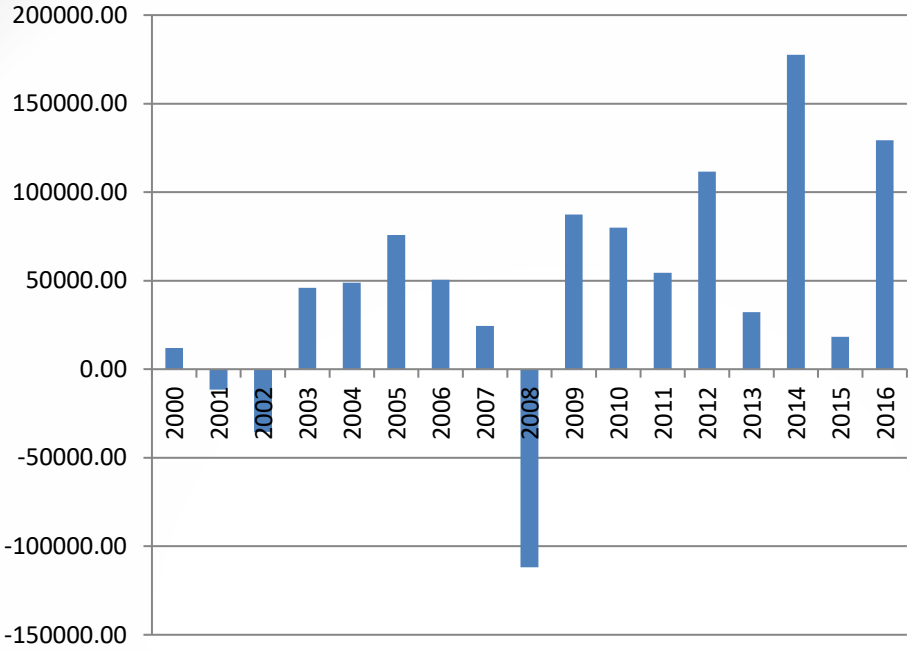
Pension funds

The Dutch supervisor of pension funds, the Dutch central bank, provides investment return figures, in billion euros, for aggregate pension funds from 1997 onward[240]. However, the data for 2016 were not available as of June 5th 2017. Therefore, we had to calculate the returns of pension funds in 2016 using a proxy, the proxy being the average of the annual returns in 2016 as reported by the three largest pension funds in the Netherlands (the only data available at that time).

[239] Just as a check, we performed the calculations of the real return using the Dutch method for inflation calculation as well. The average real return of pension funds does not change. The average real return for insurance companies does change, from 0,05 percent to 0,03 percent.

[240] http://www.statistics.dnb.nl/financieele-instellingen/pensioenfondsen/index.jsp

Graph NL IV. Investment returns of pension funds (in € mln)



Source: DNB Dutch Central Bank

In the graph, we can clearly see the correlation with the weak economic years. The so-called dotcom-crashes on the stock markets in 2000, 2001 en 2002 immediately stand out in the graph above, as does 2008, the year the American Lehman Brothers went belly up and the current economic and financial crisis started. Note that the years since 'Lehman' generally have provided very good returns for Dutch pension funds even though economic growth was low or even absent. The explanation is to be found in the monetary policy conducted by the European Central Bank and the Fed in the United States. Those central banks slashed the key interest rates to 0% and have employed various rounds of quantitative easing. This has led to the very sharp surge of stock prices but also of the prices of government bonds. As mentioned, a large part of the Dutch pension assets is traditionally invested in stock with the other part in bonds.

As stated, DNB only provides data on absolute returns, as reported by the Dutch pension funds. In order to calculate the return as a percentage, we use the DNB-figures for absolute returns and total pension fund assets per fund at the end of each reporting year. As a final step, we calculate the average yearly return for all Dutch pension funds for the period 2000 – 2016. At the time of writing, data were not available for all Dutch pension funds in 2016. As a proxy we have calculated the investment return of the Dutch pension funds for 2016 as follows:

We have taken the reported returns for 2016 of three of the five largest Dutch pension funds that were available at the cut-off date (5 June 2017). The largest pension fund, ABP, reported a return of 9.5%. The same return was reported by the second largest pension fund in the country, Zorg en Welzijn. Finally, the Metalelektra pension fund achieved 9.2% return on its assets in 2016. Those three pension funds together constitute half of all pension assets at all Dutch pension funds in 2016 which makes them representative for the entire population. We have calculated the average return (9.42%) and have applied that average as the investment return for all pension funds in 2016. Furthermore, we recalculated the results for 2015 since we were now able to use the actual data for the entire pension fund population rather than using a proxy at the time this report was written last year. The availability of the full data for 2015 has led to a revision of the results for that year in the sense that the new return is 1 % point lower than reported last year. All the results for the period 2000 – 2016 are provided in the table below.

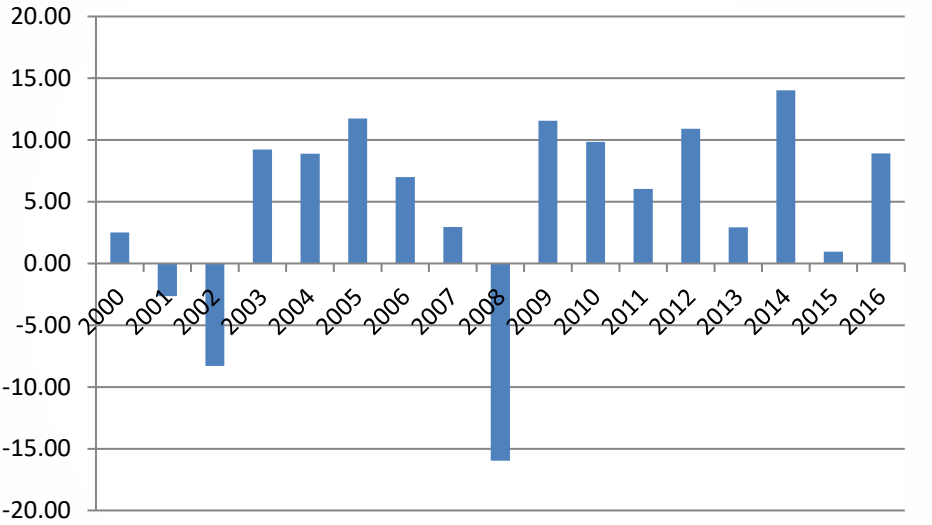
Table NL 4. Annual nominal return all Dutch pension funds 2000-2016	
Year	**Return as percentage of total assets**
2000	2.70
2001	-2.48
2002	-8.12
2003	9.40
2004	9.06
2005	11.92
2006	7.16
2007	3.14
2008	-15.76
2009	11.73
2010	9.98
2011	6.23
2012	11.1
2013	3.15
2014	14.18
2015	1.47
2016	9.42
Avg 2000-2016, per year	**4.96**

Source: DNB Dutch Central Bank, BETTER FINANCE calculations

At this stage, we have calculated nominal return on investment for each year between 2000 and 2016. By subtracting the total charges we get to the nominal return on investment after charges. However, we do run into a difficulty: as already mentioned earlier, we have nominal returns from 2000 to 2016 but charges are only available from 2007 onwards. Since we do not have data for the costs before 2007, and given their relative stability for the period 2007 – 2013, we assume those charges to be the average of those between 2007 and 2013, i.e. 0.19 %, and apply that average to the years 2000 to 2006 in order to calculate the nominal return on investment after charges. The Dutch central bank has recently started to publish total charges incurred by pension funds, starting from the year 2015. Total charges for 2016 were not available at the cut-off date of June 5th 2017. In this report we have recalculated the real return for 2015 by using the newly

available total charges. Total charges for 2016, however, had to be estimated. We have looked at the change in charges incurred at the largest pension fund in the Netherlands, ABP, and have found that there was no change, the costs remained equal to those in 2015. Therefore, we assume that this is also the case for the entire population and have set the total charges in 2016 at the same level as in 2015, i.e. 0.5% of total assets. With this assumption we are able to calculate the nominal return on investment for Dutch pension funds for the period 2000-2016 after charges and before taxes and inflation. The result is given in the graph below.

Graph NL V. Returns after charges, before taxes and inflation 2000-2016 (in %)

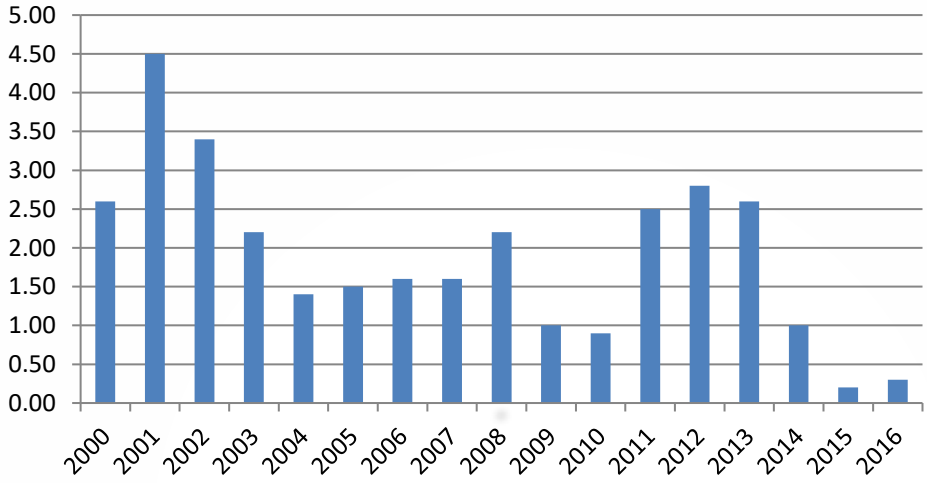


Source: BETTER FINANCE calculations

The next step on the way to calculating the real return on investment of the Dutch pension funds is to subtract the annual inflation rate from the nominal returns after charges. As already mentioned, Statistics Netherlands publishes two inflation statistics, one based on the EU-harmonized method and one on the Dutch method. We will use inflation figures calculated using

the EU-harmonized method for the period 2003 onwards[241] since those are only available since 2003. For the period 2000-2002 we use the inflation data calculated based on the traditional Dutch method[242] [243].

Graph NL VI. Dutch inflation 2000-2016 (in %)



Source: Statistics Netherlands

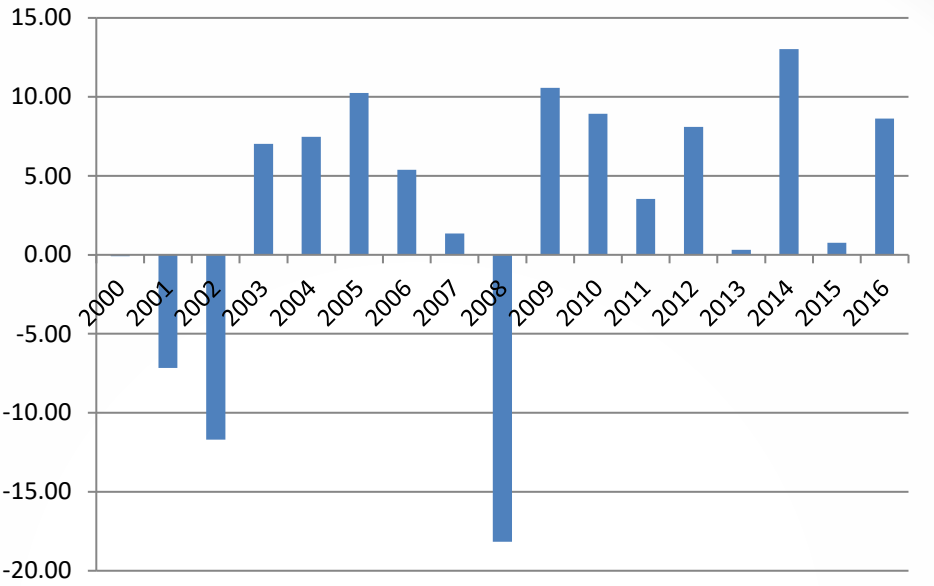
When we use the annual inflation data from 2000 and adjust the return after charges for inflation, we get the following outcome:

[241] http://statline.cbs.nl/Statweb/publication/?DM=SLNL&PA=80087NED&D1=4&D2=0&D3=12,25,38,51,64,77,90,103,116,129,142,155,l&VW=T

[242] http://statline.cbs.nl/Statweb/publication/?DM=SLNL&PA=70936NED&D1=0&D2=454,467,480,493,506,519,532,545,558,571,584,597,610,623,636,649,662&VW=T

[243] Comparing the inflation data calculated using the two methods mentioned above we find that they do not differ significantly during the period under consideration. For example, the average real return of pension funds does not change. Therefore, using the Dutch-method based inflation data for 2000 – 2003 is warranted.

Graph NL VII. Return after charges and inflation, 2000-2016



Source: BETTER FINANCE calculations, Statistics Netherlands[244]

[244] In percentages

The same results presented in a table:

Table NL5 . Returns after charges and inflation, before tax, 2000-2016	
Year	**Return after charges and inflation (in %)**
2000	-0.09
2001	-7.17
2002	-11.71
2003	7.01
2004	7.47
2005	10.23
2006	5.37
2007	1.35
2008	-18.17
2009	10.56
2010	8.94
2011	3.55
2012	8.10
2013	0.32
2014	13.03
2015	0.77
2016	8.62
Average 2000-2016	**2.84**

Source: BETTER FINANCE calculations, Statistics Netherlands

So, now we can draw the final conclusion that the Dutch pension funds have had some good and some terrible years with regard to their annual returns. When we adjust those returns for charges, taxes and inflation, we conclude that, over the period 2000-2016, the yearly average real return has been 2.84%.

As mentioned before, the Dutch pension system consists of three pillars, with the first being a guaranteed state elderly pension and the second pillar with nearly all Dutch employees enrolled in one of the hundreds of pension funds. As we have just seen, the average yearly real return on investment of pension funds is 2.84%.

Third pillar vehicles

At the moment it is impossible to calculate the real rate of return on many products that fall into this third pillar-category. In 2006, it emerged that companies providing these products have charged costs that are much higher than real, disclosed, costs. Those who purchased such products were not (fully) informed about costs, such as entry costs and various annual fees. Moreover, many costs were hidden in the value of the product, making it next to impossible to disentangle the full extent of the costs. In fact, it emerged that as much as 50%of the amount paid in, was in some cases not used for investments to achieve some targeted retirement income but went towards various costs at the issuer. That in turn meant that many people were in for a shock when they learned just how much extra retirement income they would get from this third pillar: it was significantly less than what they were counting on and often even significantly less than what they were told it would be upon their retirement.

This 'woekerpolis'-affair as it is known in the Netherlands ('woekerpolis' can best be translated as exorbitant profit affair) is an ongoing affair with households and insurance companies engaging in talks with each other in order to compensate the Dutch households for the damages incurred as a result of incorrect information on, among others, costs. There have even been cases that were brought before the judge in the Netherlands. The affair has already been called the largest financial scandal in Dutch history.

In 2008, another product was launched (partly in reaction to the 'woekerpolis'-affair) called banksparen (saving for retirement). One has to have a pension shortfall, as mentioned earlier, to be able to purchase this tax-preferential product. The interest rate depends on the plan one chooses and varies from variable interest rate to a fixed rate for 30 years and also differs depending on which company one chooses to purchase this product from. Currently, the interest rate falls between 0% for variable rates to

2.25% for a 20-year fixed interest rate[245]. Adjusted for inflation, the real return on this product generally lies far below 0 percent (for variable rates) and just slightly above 0 percent for fixed interest rate schemes (assuming the inflation rate will remain below but close to 2 percent during the 20 year period). This is before charges, which, as stated cannot really be computed due to the 'woekerpolis'-affair.

As for life insurance schemes, which form a large part of the third pillar products and hence can be used as a proxy for the returns of this pillar, we used the total return after charges and taxes but before inflation and the amount invested on behalf of owners of life insurance policies.

In this edition, we were able to recalculate the nominal and real return for 2015 using the complete data set for that year (in the previous version of this report, we had to work with incomplete data). Those updated results are reported in the table below.

[245] Various interest rates available from website www.homefinance.nl on http://www.homefinance.nl/pensioen/pensioensparen/rentes-pensioensparen-opbouwfase.asp?o=2&t=360

Table NL 6. Real return of life insurance companies in the Netherlands (in Million €)					
Year	Investment result (after charges and taxes - in Million €)	Investments on behalf of policy holders (in Million €)	Return (in %)	Annual inflation (in %)	Real return (in %)
2000	2,771	70,928	3.91	2.6	1.31
2001	2,593	76,96	3.37	4.5	-1.13
2002	240	68,535	0.35	3.4	-3.05
2003	2,793	76,814	3.64	2.2	1.44
2004	2,306	82,755	2.79	1.4	1.39
2005	3,322	95,972	3.46	1.5	1.96
2006	3,935	99,693	3.95	1.6	2.35
2007	6,951	100,755	6.90	1.6	5.30
2008	-5,58	87,46	-6.38	2.2	-8.58
2009	2,07	101,246	2.04	1	1.04
2010	180	106,624	0.17	0.9	-0.73
2011	-460	105,555	-0.44	2.5	-2.94
2012	360	110,79	0.32	2.8	-2.48
2013	2,208	106,48	2.07	2.6	-0.53
2014	-2,988	111,112	-2.69	1.00	-3.69
2015	3547	104934	3.38	0.2	3.18
average			1.68	2	-0.32

Source: BETTER FINANCE calculations, Statistics Netherlands

The average annual return - after charges and taxes but before inflation - for life insurance companies in the Netherlands between 2000 and up to and including 2015, amounts to 1.68%. The average annual inflation rate in the Netherlands over the same period was 2.00%. Therefore, the average real annual return of insurance companies in the Netherlands for the period between 2000 and 2016 was -0.32%.

Putting all those calculations together, we get the following table:

Table NL 7. Average real return of pension funds and insurance companies in the Netherlands, 2000-2016						
	Nominal return pension funds (1)	Return insurance companies after charges (2)	HICP annual inflation rate (3)	Charges pension funds (4)	Real return pension funds (1-3-4)	Real returns insurance companies (2-3)
2000	2.70	3.91	2.6	0.19	-0.09	1.31
2001	-2.48	3.37	4.5	0.19	-7.17	-1.13
2002	-8.12	0.35	3.4	0.19	-11.71	-3.05
2003	9.40	3.64	2.2	0.19	7.01	1.44
2004	9.06	2.79	1.4	0.19	7.47	1.39
2005	11.92	3.46	1.5	0.19	10.23	1.96
2006	7.16	3.95	1.6	0.19	5.37	2.35
2007	3.14	6.9	1.6	0.19	1.35	5.30
2008	-15.76	-6.38	2.2	0.24	-18.17	-8.58
2009	11.73	2.04	1.0	0.19	10.56	1.04
2010	9.98	0.17	0.9	0.15	8.94	-0.73
2011	6.23	-0.44	2.5	0.19	3.55	-2.94
2012	11.1	0.32	2.8	0.21	8.10	-2.48
2013	3.15	2.07	2.6	0.24	0.32	-0.53
2014	14.18	-2.69	1.0	0.15	13.03	-3.69
2015	1.47	3.38	0.2	0.17	0.77	3.18
2016	9.42	n.a.	0.3	0.50	8.62	n.a.
Avg.	4.96	1.68	1.9	0.22	2.84	-0.32

Source: BETTER FINANCE calculations

Conclusion

The Dutch employees are far less dependent on a State pension compared to other Europeans since their individual pension plans account for the main part of their retirement income. The Dutch have some 1,400 billion€ stashed away for their retirement in their pension vehicles in the second and third pillars of the pension system.

Generally, the pension funds that invest the most part of pension contributions tend to provide decent returns after taxes, charges and

inflation. For the period considered here, 2000-2016, the average annual real return is 2.84%. The pension vehicles in the third pillar, such as life insurance companies, return far less. Indeed, on average they caused an annual loss of 0.32% (with the exception of 2016, since at the time of writing no data was availble for 2016 returns in the sector). However, two things have to be mentioned in order to put this performance into some perspective. In the first place, the third pillar is relatively small and a relatively small number of individuals are enrolled in it. Secondly, generally speaking the real return in bad years, such as 2002 and 2008, is much better than the return of the pension funds, so one could say that the third pillar schemes partly cushion the blow in times when stock prices drop significantly. Given the warnings by some analysts that stock prices are (extremely) inflated by the monetary policy conducted by, among others, the American Federal Reserve and the European Central Bank, in recent years, and the danger that stock prices could fall sharply, this cushioning effect could be very important in the coming years.

Finaly, one note of caution must be made with regard to the average returns from pension funds. In recent years, the real average return has been positively influenced by two factors simultaneously. First of all, the policies of the European Central Bank have sent stock and bond prices up. For pension funds, what with those institutions sitting on a large pile of both, the financial gains have been incredible. This is what we can clearly see in the yearly returns: since the ECB started with its current policies, the annual returns have been above average. Second, at the same time the annual nominal returns have been helped by the ECB's policies with the inflation rate tumbling, and leading to a situation in which nominal returns equal real returns. Historically speaking it would be very odd for this combination to exist for a long time, so there might be tough times ahead. Indeed, over the course of 2016 and 2017, the annual inflation rate in the euro area has risen from around 0% or even slightly below that to 1.9%. Since the inflation rate has been very low for the first part of 2016, the increase in inflation in the last months of that year were insufficient to pull the average for the year significantly higher. However, as things stand now, the annual inflation rate will be significantly higher in 2017, which could

have severe implications for the real rate of return in 2017 and subsequent years.

Thanks to the fact that pension funds and life insurers are under supervision of the Dutch central bank, one can access a wealth of financial data for those sectors. However, like in many other European countries, even the supervisors or indeed pension funds themselves often are not able to provide a complete overview of costs and charges. Even in June there were no data available for the previous year as many pension funds, among them three of the 'big five', failed to publish their annual report. The data on life insurers for 2016 was still not available as of June 5th 2017.

All in all, the Dutch enjoy a positive real return on their pension savings, with the non-weighted average being 2.52% (2.84% for pension funds and a loss of 0.32% for the third pillar vehicles). The average return from the standpoint of an individual is much higher due to the preferential tax treatment of their contributions. These are exempted from income taxes at the time they are made; pensions are taxed when one turns 65 but then the income tax rate is much lower.

When looking back, the Dutch generally have no reason to be dissatisfied with their pension schemes. However, looking into the future, one can see some dark clouds gathering above the Dutch pension system. First and most obviously, there is the current financial and economic crisis. Pension funds have been severely hit by historically low long-term interest rates, so much in fact that many of them were forced to cut the pension benefits as their coverage ratio (the ratio between assets and future obligations) fell (far) below 105 points. According to the Dutch law, when the coverage ratio falls below that level, the pension fund concerned has a few years to get the coverage ratio back above that threshold. If it fails to do so, it has to slash its pension benefits. Various pension funds have cut their benefits by almost 10%. Also, rarely has any pension fund been able to adjust pension benefits to the annual inflation in recent years, incurring de facto pension cuts of up to 15% since the beginning of the crisis.

Given the medium and long-term macro-economic outlook, chances are that the long term interest rates will stay at historically low levels for quite some time. This hurts the Netherlands relatively badly since with low long-term interest rates, many pension funds will not be able to adjust the pension benefits to the annual inflation. In combination with the annual inflation rates returning to normal levels, this does not bode well for the real pension benefits in the Netherlands.

Ageing is another issue at hand affecting the Dutch pension system. Currently, the Dutch pension system is characterized by a large degree of built-in solidarity. However, many young people fear that by the time they reach their retirement age, there will not be enough money for a decent pension income. Therefore, the Social and Economic Council, arguably the most important advisory and consultative body to the government consisting of employers' representatives, union representatives and independent experts, recently proposed changes to the Dutch pension system. Although it proposes to keep a large degree of solidarity intact, it wants to change the system in such a way that each individual would have his or her own pension savings account, with the possibility of choosing how the money is invested. Recently, the Dutch government published its plans for the overhaul of the current pension system in the Netherlands. One of the proposed changes, if implemented, would mean that starting in 2020, the money paid in by the young part of the Dutch population in the Pillar II pension scheme would be used for their pensions in the future. At the moment, the money they contribute to the pension funds is used for payment of the pensions of the elderly. This solidarity between generations is one of the most important characteristics of the Dutch pension system and if changed, it would truly constitute a fundamental change of the pension system as the Dutch know it.

Pension Savings: The Real Return

2017 Edition

Country Case: United Kingdom

Introduction

The pension system in the UK is based on three pillars.

Pillar I

Pillar I is a social insurance program consisting of two elements:

The Basic State Pension

Every employee or self-employed person is required to contribute to this plan and each person can receive their basic pension on reaching the age of retirement (state pension age). The legal age of retirement is 65 years for men. Since April 2010, the statutory retirement age for women has gradually increased from 60 to 65. The statutory retirement age will gradually increase from 2018 to be fixed at 66 years in 2020 for both men and women. The basic pension depends on the number of years of contributions to National Insurance. To qualify for a full pension, thirty years of contributions are necessary. The perceived pension at the full rate since April 2016 for a single person amounts to £119.30 (€135.9) per week. It increases every year according to the following components, with the largest figure being taken into account:

- the average percentage growth in wages
- the Consumer Price Index increase
- 2.5%

It increased by 2.5% in 2015 and 2.9% in 2016.

The Additional State Pension

Employees (and not the self-employed) who earn more than £5,824 (€6,632) per year contribute to the Additional State Pension system and receive an income in addition to the Basic State Pension. The Additional State Pension depends on the number of years of contribution and earnings. Anyone wishing to save for retirement under pillar II and III may leave the State Second Pension. If the employee opts-out towards an occupational scheme, the employer and the employee pay lower contributions and the employee cannot qualify for the State Second Pension.

The current pillar I program was replaced by a new one for people reaching the State Pension age from 6 April 2016 onwards: A single-tier State pension replaced the basic and additional pensions. The full new State Pension is £122.30 (€139.3) per week.

Pillar II

Pillar II is a system of occupational/company pension plans. There are two categories of schemes:

- Salary-related schemes (Defined benefit)
- Money purchase schemes (Defined contribution)

The number of employees saving in a workplace pension plan has risen from 12.3 million in 2003 (65% of eligible employees), to 16.2 million in 2016 (78%)[246]. However, it is estimated that, by 2018, due to the automatic enrolment reform (see below) eight to nine million people will start saving, or saving more. If employers do not offer a company scheme, they have the opportunity to contribute to an individual retirement savings plan contracted by the employee. In this case, contributions must be at least equal to 3% of salary paid.

[246] Source: Official Statistics on workplace pension participation and saving trends of eligible employees, Department for Work and Pensions, 15 June 2017.

Automatic enrolment: Public Authorities sought to ensure that part of the population does not fall into poverty in retirement by establishing a safety net at the professional level. The Pension Act of 2008 aims to solve the pension problem facing people whose savings are not sufficient to ensure a decent retirement[247]. The purpose of this legislation was to protect the 13.5 million UK employees who were not affiliated to any pension plan (other than the basic plan that offers a very low pension level).

Employers are required to automatically enroll all employees whose annual income is more than £10,000 (€11,388) to a basic scheme to which they contribute. Employees have to explicitly opt out of it if they do not wish to contribute. Minimum compulsory contributions will progressively rise up to 8% of the employee's salary from April 2019, of which 3% will be paid by the employer and 5% by the employee. In practice, most employers use defined-contribution schemes for this purpose. British employers who don't have their own scheme have to join a national multi-employer scheme.

Automatic enrolment aims to increase the number of individuals newly saving or saving more in a workplace pension by 9 million. The total amount saved by eligible savers was £87.1 (€99.2) billion in 2016. However, among those targeted by the reform (that is, people whose savings are insufficient to cover their needs at retirement), 4.5 million are not automatically enrolled in the new system. This includes young employees who are less than 22 years old, employees over the State Pension age (65) and those whose annual income is less than £10,000 (€11,388). Employees may also request to opt out of the system. Occupational schemes are subject to the same limitations in terms of contributions and capital as individual savings plans (see below).

Pillar III

Pillar III consists of individual retirement savings plans.

[247] According to the Department for Work and Pensions (2013), 12 million people were not saving enough to ensure an adequate income in retirement.

Anyone participating in the pillar I State Pension scheme has the opportunity to leave the State Second Pension and subscribe to a Personal Pension Plan with a bank, an insurance company, a building society or other financial intermediaries. The offer of individual retirement savings products in the UK is highly standardised and controlled by the State. There are two types of Personal Pensions: Stakeholder Pensions and Self-Invested Personal Pensions (see below for more details.)

A Personal Pension is a defined contribution scheme. The accumulated savings can be withdrawn at any age between 55 and 75 (in practice, it is between 60 and 65 in most pension schemes), even when the beneficiary is still employed.

The savers normally convert the accumulated rights into an annuity for life, which is subject to taxation. However, they may withdraw a non-taxable lump sum of a maximum of 25% of the accumulated savings from the scheme. Beyond this threshold, withdrawals are taxed at the income tax marginal rate of the retiree. Another alternative to the annuity for the subscribers is to quit their retirement savings plan and to receive taxable income from it (called Unsecured Pension – USP). After turning 75 years old, they are able to make annual withdrawals. USP can be transmitted to heirs.

Since April 2015, new flexibilities are available to members of defined contribution pension funds. Pension fund members have the opportunity to keep a portion of their rights invested in the fund, with a drawing right ("flexi-access Drawdown") on the amounts concerned, and an additional tax exemption on the amounts withdrawn up to one third of the envelope of these drawing rights.

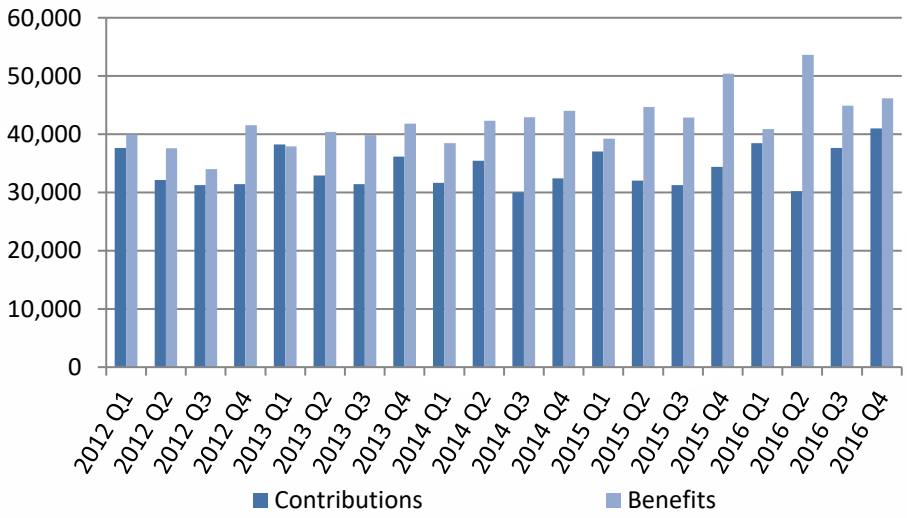
Since the retirement system in the United Kingdom is predominantly a pre-funded one, life insurance and pension funds represent the majority of total assets held by UK households.

Table UK 1. Financial Savings of UK households at the end of 2016 (non-real estate)		
	% of total assets	2016/2015 (%)
Currency and bank deposits	24.9	6.8
Investment funds	2.3	-18
Direct investments (debts products, shares and other equity)	10.5	6.8
Life insurance and annuity entitlements	10	4.6
Pension schemes	52.2	11.5
Total	100	8.2

Source: ONS

Many occupational and individual pension funds have reached maturity and the gap between benefits and contributions widens.

Graph UK I. Contributions and benefits of pension funds in the UK (SA data in £ Bn)



Source: Office for National Statistics. Data include self-administered pension funds and pension fund management by insurance companies

Pension Vehicles

Pillar II

There are several types of pension schemes, including defined contribution schemes and defined benefit schemes.

Defined benefit schemes

Defined-benefit schemes are protected by the Pension Protection Fund (PPF). PPF pays some compensation to scheme members whose employers become insolvent and where the scheme doesn't have enough funds to pay members' benefits. The compensation may not be the full amount and the level of protection varies between members already receiving benefits and those who are still contributing to the scheme.

Final salary schemes - Trustees are responsible for paying retirement and death benefits. The pension depends on the number of years the employee belonged to the scheme (pensionable service), the final pensioner salary and the scheme's accrual rate.

Career average revalued earnings (CARE) schemes - CARE schemes are similar to final salary schemes, apart from the fact that pensions depend on the employees' averaged earnings over their career (the pensionable earning) instead of the last salary before retirement. Pensions are indexed based on price inflation.

Defined contribution schemes

The amount of the pension depends on contributions paid by the employer and the employee, the fees charged for the management of the scheme and the performance of investments.

Small self-administered pension schemes (SSAS)

SSASs are pension schemes whose members are normally company directors or key staff. The investment policy of SSASs is more flexible than the common law system. The fund may lend money to the employer and it

may borrow and invest in a broad range of products, including the employer's shares.

SSASs are managed by insurance companies, pension consultants and fund managers.

Hybrid schemes

The sponsor of a hybrid scheme commits to a minimum pension amount. The pension can be higher depending on the outcome of the investment policy of the fund.

Cash balance plans

In cash balance schemes, the employer is committed to a minimum amount of pension savings from the scheme for each period of service of his/her employees. At retirement, the accumulated capital is converted into an annuity.

Multi-employer schemes

Multi-employer schemes have been around for a long time and are common in the public sector.

The National Employment Savings Trust (NEST), established in 2011 by the government, is one of the schemes complying with the legislation on auto-enrolment (see above). It is a low-cost pension scheme and is required to accept membership from any employer. In 2017 there is no longer any restriction on the amount of annual contribution, but most employees do not go beyond the annual tax-free allowance (currently £40,000 / €45,552).

Since the implementation of the auto-enrolment legislation, other inter-fund companies have been created and are in competition with NEST: NOW: Pensions (or just simply NOW), a UK subsidiary of the Danish national pension fund ATP, the so-called "People's Pension", Smart Pension, creative auto-enrolment.

Pillar III

Self-invested personal pensions

Self-invested personal pension plans are a type of Personal Pension Plan where the subscriber decides its own investment strategy or appoints a fund manager or a broker to manage investments. A large range of investments are allowed, although some of them (notably, residential property) are subject to heavy tax penalties and are, therefore, excluded in practice.

Group personal pension plans

Group personal pension plans are defined contribution plans arranged by the employer. The liability resides with an independent pension provider, usually an insurance company.

Charges

Annual Management Charges (AMC) are usually the main charges levied on pension funds. They are applied as a percentage of the assets of the fund. However, some schemes charge additional fees such as, for example, a contribution charge or a flat fee. In some cases, audit, legal, custodial or consultancy fees are added to the AMC and deducted from members' pension pots[248]. OFT's report also showed that some providers do not include the costs of administering schemes, of IT systems or of "investment management services" in AMC. Moreover, transaction costs are never included in the AMC, but this latter practice can be justified by the fact that a major part of trading costs is the bid-ask spread of quotes or orders in order-driven markets, a cost that should be considered as an inherent component of investment returns.

To summarise, there are some operational expenses that are not included in AMC, but to which extent is unknown. Fees charged to members may be significantly higher than the average, depending, among other things, on

[248] Department for Work & Pensions (2013,2).

the size of the scheme. It has also been noted by OFT[249] that some providers charged higher AMC to deferred members than to active members. In order to protect members of pension funds against the most abusive practices, a stakeholder pension scheme cannot charge an AMC superior to 1.5% and it cannot charge its members for starting, changing or stopping contributions, nor for transferring funds.

A cap on the charges for default funds within the framework of the automatic enrolment obligation, equivalent to 0.75% of funds under management, was introduced on 6 April 2015 by the Financial Conduct Authority (competent for contract-based workplace pension schemes) and the Department for Work and Pensions (competent for trust-based pension schemes). The same regulation also prevents firms from paying or receiving consultancy charges and from using differential charges based on whether the member is currently contributing or not. In 2017, the government reviewed the automatic enrolment legislation that includes a review of the charge cap.

There are various estimations available on the average weight of charges levied on pension funds in the UK.

- Charges are especially high in personal contracts other than group personal plans. According to Oxera[250], there is a contribution charge of 0 to 1% and an average AMC of 0.95% in personal defined contribution schemes.
- The Association of British Insurers (ABI)[251] found that schemes newly set-up for automatic enrolment supported a 0.52% AMC on average, against 0.77% for pre-existing schemes. NEST's AMC is 0.3% of assets, plus a contribution charge of 1.8% of any new contribution. Administration fees charged by NOW amount to 0.3% of assets plus £1.50 per member per month.

[249] Office of Fair Trading (2013)
[250] Oxera (2013)
[251] Association of British Insurers (2012)

- According to the Office of Fair Trading (OFT), the weighted average annual management charge for new contracts decreased from 0.79% in 2001 to 0.51% in 2012.
- According to the Department for Work and Pensions[252], average charges in schemes qualifying for automatic enrolment prior the implementation of the charge cap were 0.42% in surveyed trust-based schemes and 0.55% in contract-based schemes in 2015. In schemes non-qualifying for automatic enrolment, average charges arose to 0.67% in trust-based schemes and 0.81% in contract based schemes.

Both latter sources are the most consistent and recent ones and we use them below to calculate investment returns before and after charges, although taking into account only AMC underestimates the actual level of charges.

The fall in average AMC is attributed to several factors by OFT: The growing size of assets under management generated economies of scale and increased the bargaining power of employers. The AMC cap on stakeholder pensions created a new competitive benchmark. Advisers' remuneration has been excluded from AMC by some providers ahead of the regulation preventing this method of adviser remuneration from January 2013 onwards (The Retail Distribution Review, RDR).

In order to calculate the average weight of charges in total outstanding assets since the year 2000, we used assumptions of OFT on the average annual rate for switching providers (6.7% of assets) and the average annual rate for successful re-negotiations (3.6% of assets). Since no data are available on average AMC in 2000, we assumed that the average AMC represented 0.79% of managed assets in 2000, as in the following three years which are documented by OFT. Data for 2013 were estimated using the Department of Work Pensions (DWP) survey that recorded a slight increase over 2011 in AMC for trust-based schemes and a slight increase for contract-based schemes. Based on these hypotheses, we find that the average AMC decreased from 0.79% in 2004 to 0.55% of the outstanding

[252] DWP, "Pension Charges Survey 2015: Charges in defined contribution pension schemes"

assets of pension funds in 2014. On average, AMC represented 0.7% of assets over the eleven years from 2004 to 2014.

Table UK 2. Average AMC on schemes set up by existing contract-based and bundled trust-based pension providers in each year (%)

From 2000 to 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual average 2004-2014
0.79	0.77	0.76	0.75	0.73	0.71	0.69	0.67	0.65	0.69	0.55	0.7

Sources: OFT, GAD, DWP, own calculation

Starting from October 2017, existing early exit charges in occupational pension schemes cannot exceed 1% of the member's benefits and no new early exit charges can be imposed to members who joined that scheme after 10 October 2017.

Taxation

Tax relief on contributions

Contributions to personal pension plans are deducted from the taxable income, limited to an annual allowance of £40,000 (€45,552).

Non-taxable persons benefit from a tax relief at 20% of the first £2,880 (€3,280) of individual contributions per year.

Moreover, there is a lifetime allowance of £1 million (€1.14 million). Pension savings are tested against the lifetime allowance when the beneficiary receives their pension benefits. The charge is paid on any excess over the lifetime allowance limit. If the amount over the lifetime allowance is paid as a lump sum, the rate is the marginal rate applicable to the taxpayer. If it is paid as a pension or by cash withdrawals, the rate is 25%.

Taxation of the funds

Pension funds do not pay any tax on the income of their assets (interest, dividends, rents) nor on capital gains.

Taxation of pensions

Pensions are included in the income tax base. There are currently three marginal rates in the UK: 20% on income from £11,501 to £45,000 (€51,246), 40% on incomes from £45,001 to £150,000 (€170,819) and 45% above. There are income tax allowances of £11,500 (€13,096)[253].

Pension Returns

When looking into Pension Returns, we will consider the returns of private pension funds as the most descriptive proxy as other options such as life insurance carry marginal weight in the British market. As for other instruments such as shares, bonds and packaged products, we do not have statistics that show in which proportion these products are used for purely private pension provision.

Asset allocation

Pension fund returns depend on their asset allocation.

[253] This amount applies to people born after 6 April, 1938.

Table UK 3 . Breakdown of self-administered pension fund asset holdings (%)						
	Public sector securities	Shares	Corporate bonds	Mutual funds	Other	Total assets
2003	16	46	7	17	13	100
2004	15	43	8	19	15	100
2005	12	43	8	21	16	100
2006	12	41	9	22	17	100
2007	13	33	10	26	18	100
2008	14	29	12	25	19	100
2009	14	29	13	30	15	100
2010	13	26	11	34	16	100
2011	16	22	10	33	18	100
2012	17	21	10	34	18	100
2013	18	20	9	34	18	100
2014	19	20	10	32	19	100
2015	21	17	10	34	18	100

Source: ONS, "MQ5: Investment by Insurance Companies, Pension Funds and Trusts", various years

The share of direct holdings of corporate securities (shares and bonds) consistently decreased from 53% in 2003 to 27% in 2015. British pension funds remain among the most exposed to the stock market, either directly or through investment funds[254]. However, faced with the uncertainty of returns achieved by the stock market and the weak performance of government bonds, managers reallocated part of their investments to alternative asset classes.

The amount of tax depends on the income tax rate of each retiree. We assume that the pensioner withdraws the maximum tax-free lump sum: 25% of the accumulated savings. In other words, we multiply the applicable tax rate by 0.75. The retiree will pay an amount of income tax on their

[254] Equity fund assets represent more than two thirds of total UCITs assets in the United Kingdom. Since pension funds hold a major portion of total outstanding mutual funds in the UK, we consider that equity funds are also predominant in holdings of mutual funds by pension funds in the UK.

nominal investment return, which depends on their applicable marginal tax rate and their tax allowance, in relation to their total income

We calculated the real investment return for four cases:

Table UK 4. Case description

	Tax allowance (£)	Marginal Tax rate	Income tax	Average tax rate
Case 1: An annual income of £10,000	11,500	20%	0	0%
Case 2: An annual income of £20,000	11,500	20%	1,800	9%
Case 3: An annual income of £50,000	11,500	40%	9,200	18%
Case 4: An annual income of £150,000	-	40%	51,400	34%

Sources: GAD (nominal returns in 2000), ONS, OFT, DWP, IODS calculation

Nominal investment returns

We calculated nominal investment returns using data on autonomous pension funds available from ONS (MQ5: Investment by Insurance Companies, Pension Funds and Trusts).

Nominal investment returns for a given year are calculated according to the following formula:

$$R = \frac{Income + capital\ gains}{(Assets\ at\ year\ end + assets\ at\ begining\ of\ the\ year)/2}$$

Capital gains are estimated using the following formula:

$$CG = Assets\ at\ year\ end - assets\ at\ begining\ of\ the\ year - Net\ investments\ of\ the\ year)$$

Income includes following components:

$$Income\ of\ investment = Rents\ from\ properties + Dividends\ received + Interest\ earned$$

Real investment returns after charges, inflation and taxes

Option 1

We apply the average tax rate to the nominal investment return and calculate the resulting real investment return after taxes. Returns rise to 2.5% per year in the most favourable case, and 1.3% in the worst case[255].

[255] Data on returns on pension fund investments in the UK have not been published by the OECD this year. Hence we estimated nominal returns based on the variation of assets, net investments and data on the income of pension funds published by the Office for National Statistics (ONS). Running this estimation led us to revise results for previous years included in the previous edition of the present study. Since data on assets held by self-administered pension funds are not yet available for year 2014, our estimation relates to the years up until 2013. The main reason why these figures differ from figures reported by the OECD is because in their case capital gains were excluded from the calculation.

Table UK 5. Pension fund average annual rate of investment returns (%)								
	Nominal return before charges, before inflation, before tax	Nominal return after charges before inflation, before tax	Real return after charges, after inflation, before tax		*Case 1*	*Case 2*	*Case 3*	*Case 4*
2000	-3.5	-4.3	-5.2					
2001	-5.3	-6.1	-7.2					
2002	-13.3	-14.1	-15.8	**Real return after charges, after inflation, after tax**				
2003	15.5	14.7	13.5					
2004	12.1	11.3	9.6					
2005	19.9	19.1	17.2					
2006	11.4	10.6	7.7					
2007	1.8	1.1	-1.1					
2008	-11.4	-12.1	-15.2		1.9	1.9	1.2	1.2
2009	13.5	12.8	10					
2010	13.6	12.9	9.2					
2011	12.3	11.6	7.4					
2012	10.5	9.9	7.2					
2013	6.4	5.7	3.7					
2014	5.1	4.6	4.1					
2015	4.2	3.5	3.3					
Avg / Year	5.4	4.6	2.6					

Sources: GAD (nominal returns in 2000), ONS, OFT, DWP, IODS calculation

Option 2

We apply the marginal tax rate to the nominal investment return and calculate the resulting real investment return after taxes. In the most favorable case, the average annual return is 2.6%.

Conclusions

The United Kingdom is one of the European countries with the most developed and mature pension funds. Workers in the UK cannot rely on the social insurance program (pillar I) that provides only a very limited income. On the other hand, British households save less than other Europeans on average and they do not rely much on alternative assets as a means to prepare for their retirement. Hence, the government has implemented a compulsory framework of "auto-enrolment" in occupational schemes that should, in theory, extend the safety net to most employees.

But these initiatives can only be positive if the new money channelled to pension funds is efficiently managed and generates significant and sustainable revenues. The issue of the real returns of private pensions is thus crucial in the UK.

However, and surprisingly in a country which has known pre-funded retirement schemes for a long time, it is not easy to calculate these returns and identify its positive (managers' skills and asset allocation) or negative components (charges and taxation).

Like in other countries, the financial crisis that started in 2008 resulted in changes in asset allocation that are probably generating lower returns, with more cash and less corporate equity.

Charges negotiated by employers with pension providers within the framework of new contracts or re-negotiations decreased on average since 2005. But there was a lack of transparency and comparability of charges disclosed by pension providers. Public authorities have taken initiatives to standardise and limit the fees paid to pension providers to avoid abusive practices. The Annual Management Charges, which are the main focus of the public debate, decreased from 0.79% in 2001 to 0.55% in 2014.

Another negative factor is the inflation rate, which is higher in the UK, at 1.6% in 2016, than the EU average at 1.2%.

In total, the nominal average annual performance of employees' and employers' contributions to pension funds from 2000 to 2015 was positive by 5.4%. When taking into account inflation, charges and taxes, the investment returns are estimated at +1.2% to +2.6%, depending on the personal tax rate of the retiree.

Imprint

Editor and Publisher
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BETTER FINANCE activities are partly funded by the European Commission. There is no implied endorsement by the EU or the European Commission of work carried out by BETTER FINANCE, which remains the sole responsibility of BETTER FINANCE.

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