Long-Term and Pension Savings

The Real Return

2020 Edition

BETTER FINANCE
The European Federation of Investors and Financial Services Users
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Pension Savings: The Real Return

2020 Edition

A Research Report by BETTER FINANCE

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Acronyms

AIF	Alternative Investment Fund
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
DB	Defined Benefit plan
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
ETF	Exchange-Traded Fund
EIOPA	European Insurance and Occupational Pensions Authority
ES	Spain
ESAs	European Supervisory Authorities
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
NAV	Net Asset Value
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
TCR/TER	Total Cost Ratio/ Total Expense Ratio
UCITS	Undertakings for the Collective Investment of Transferable Securities
UK	United Kingdom

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Country Case: Denmark

Danish Summary

Det danske pensionssystem er et veludbygget 3-søjle-system. De tre søjlers betydning har gradvist ændret sig i løbet af de sidste 30 år. PAYG-systemet i søjle 1 (folkepensionen) er fortsat den væsentligste indkomstkilde for de fleste pensionister, men arbejdsmarkedspensionerne spiller en stadig større rolle. Mere end 80 pct. af arbejdsstyrken er medlem af en eller flere arbejdsmarkedspensioner. Den gennemsnitlige dækningsgrad forventes at stige i de kommende år fra det nuværende niveau på ca. 3/4.

Det danske pensionssystem er karakteriseret ved en høj grad af forudgående opsparing og ved en klar arbejdsdeling mellem de offentlige, skattefinansierede pensioner og de private, opsparingsbaserede pensionsordninger. Den samlede pensionsopsparing udgør 4.430 mia. DKK eller næsten det dobbelte af BNP.

De danske pensionskasser har klaret sig pænt igennem den finansielle krise og perioden med lavt renteniveau. Selv om den sidste tiårsperiode startede med betydelige tab, har de følgende år mere end kompenseret for disse tab. Og selv om væksten og renteniveauet har været lavt, så har den private pensionsformue I perioden fra 2007 til 2018 opnået en akkumuleret real forrentning på ca. 50 pct. Det svarer til en realrente på ca. 4 pct. om året. [Det samlede investeringsafkast for 2018 var negativt (-3,1 %) med tab for næsten alle aktivklasser. Den politiske situation med handelskrig mellem USA og Kina og Brexit påvirkede markederne i negativ retning og resulterede i samlede tab på investeringer, typisk på mellem -1 og -5 pct. De største investeringstab fik de markedsrentebaserede pensionsordninger, mens de garanterede pensionsordninger typisk opnåede et resultat på lige under nul. Det illustrerer en mere forsigtig investeringspolitik for de garanterede produkter.

Der er endnu ikke offentliggjort tal for 2020, der dog igen viste særdeles pæne stigninger over hele linjen. En fremgang der fortsatte i de første måneder af 2020 indtil verdensøkonomien blev ramt af Covid-19, som resulterede i et betydeligt fald, der dog viste sig at hurtigt at vende igen. Hvad året samlet vil resultere i er endnu uvist.

Summary

The Danish pension system is a well-established 3-pillar system. The role of the pillars has changed gradually within the last 30 years. The PAYG- system of Pillar I still provides the basic income for most elderly, but occupational DC pension schemes play an increasingly important role. More than 80% of the Danish labour force is enrolled in one or more occupational schemes. The average replacement ratio is expected to increase in the years to come from today’s level at around 75%.

The Danish pension system is characterized by a high degree of funding and clear roles for the tax-based public pensions of Pillar I and the privately funded pensions. The total value of funded pension schemes exceeds €593 billion,[110] or almost than twice the Danish GDP.

The Danish pension funds have managed the financial crisis and the low interest rate environment rather well. Although the last decade started out with substantial losses, the following years more than compensated for these losses. Although it has been a decade of low interest rates and low economic growth, money invested in a private pension scheme in 2007 has, on average, accumulated a real return of approximately 50% by 2018 (an average real return after tax of around 4% a year). The investment return for the sector in total for 2018 are negative (-3,1%) with a general negative return for almost all asset groups. Political topics such as the relations between the USA and China and Brexit have had a negative impact on the markets, resulting in overall losses – typically between -1% to -5% - for 2018. The greater losses were in market rate-based schemes with no guarantee while the investment return for guaranted DC-schemes typically was just below zero. illustrating a more cautious investment policy for guaranteed products.

The figures for the investment return for the sector in total for 2019 are not yet available but they were extremely positive, which also was the case for the first couple of months in 2020 until Covid-19 came along. Covid-19 resulted in a huge drop but came back again after 3-4 months. What the whole year of 2020 will bring is still unknown.

Introduction

The basic structure of the Danish pension system has changed gradually in the past 30 years. The expansion of occupational pension schemes is changing the system from a mainly tax-based pay-as-you-go (PAYG) system to a mainly funded DC system. This change secures a standard of living in retirement for almost everybody in Denmark that reflects the income before retirement, while also contributing to a sound economic development in Denmark. The importance of occupational pension schemes to Danish economic recovery is often overlooked.

For six years in a row (2012-2017), the Danish pension system was ranked number 1 in the Melbourne Mercer Global Pension Index. The last two years (2018 and 2019) Denmark was ranked number 2 after the Netherlands.[111] The high ranking is a result of a number of indicators concerning design of the pension system and pension coverage, as well as parameters such as demography and economic governance.

The total value of funded pension schemes exceeds DKK 4430 billion (€593 bln), or almost twice the Danish GDP.

[110] All currency conversions are made at the exchange rate provided by the ECB Statistical database for EUR/DKK on 31.12.2019, 1 EUR = 7.4715 DKK.
[111] Melbourne Mercer Global Pension Index 2019, https://australiancentre.com.au/wp-content/uploads/2018/10/MMGPI-Report-2018.pdf.

Description of the pension system

- The Danish pension system is a three-pillar system: the aim of the **first pillar** (Pillar I) is to prevent poverty in old age. Pillar I provides all Danish pensioners with a minimum pension. The pension schemes of the Pillar I are compulsory and regulated by law.
- The **second pillar** (Pillar II) is based on general agreements in the labour market and participation is mandatory for the individual members based on the employment contract, but enrolment is not statutory by law. Through occupational pension schemes, the income over one's entire life is levelled and reallocated from the active work years to post-retirement years. Pillar II aims to secure a standard of living reflecting the level of income before retirement.
- The **third pillar** (Pillar III) provides individual opportunities for supplementary saving based on individual needs.

Table DK1. Pension System Overview

Pillar I	Pillar II	Pillar III
Mandatory State Pension	Occupational Pension DC	Voluntary Personal Pension
Provides the basic income for most elderly - Pillar I prevents poverty in old age	Aiming to grant a standard of living reflecting the level of income before retirement	Supplementary saving based on individual needs
	More than 80% of Danish labour force is enrolled in one or more occupational schemes.	As Pillar II gains importance, Pillar III enrolments are diminishing
Compulsory and regulated by law	Mandatory for the individual members based on the employment contract, but enrolment is not statutory by law	Voluntary
Quick facts		
Danish pension system has been top ranked (no 2) in the Melbourne Mercer Global Pension Index		
The average replacement ratio is expected to increase in the years to come at around 75%		
The total value of funded pension schemes exceeds 590 billion euro, or more than twice the Danish GDP		
Period 2007-2017 the average real return after tax for private pension scheme has been around 4% a year		

Source: BETTER FINANCE own composition

Within the recent decades, the importance of Pillar II has increased substantially, and this trend will continue in the years to come. Eventually, occupational pensions will become more important than Pillar I schemes. At the same time the role of supplementary pension schemes of Pillar III is diminishing.

Table DK2. Participation in the three pillars

	Pillar I ATP	Pillar I Folkepension	Pillar II	Pillar III	Pillar II and/or III
Contributors (as % of the work force)	88%	0%	81%	25%	91%
Retirees (as % of retirees)	86%	99%			61%

Source: Forsikring Pension DK - Folkepension og ATP

The total value of funded pension schemes in Denmark in the last 20 years (2000-2019) is presented below (both in DKK and EUR).

Table DK3. Total value of funded pension schemes 2000-2019 (in bln)							
	Life insurance companies	Industry wide pension funds	Company pension funds	Banks	ATP	Total	Currency
2000	650	270	43	215	247	1,424	DKK
	87	36	6	29	33	191	€
2001	650	272	40	215	247	1,423	DKK
	87	36	5	29	33	190	€
2002	669	277	37	198	243	1,424	DKK
	90	37	5	27	33	191	€
2003	732	302	38	215	263	1,550	DKK
	98	40	5	29	35	207	€
2004	810	339	39	244	307	1,740	DKK
	108	45	5	33	41	233	€
2005	953	381	42	298	365	2,040	DKK
	128	51	6	40	49	273	€
2006	1,010	402	43	347	372	2,174	DKK
	135	54	6	46	50	291	€
2007	1,054	412	43	369	389	2,268	DKK
	141	55	6	49	52		€
2008	1,119	396	44	308	678	2,545	DKK
	150	53	6	41	91	341	€
2009	1,212	436	45	378	609	2,680	DKK
	162	58	6	51	82	359	€
2010	1,351	478	51	405	758	3,043	DKK
	181	64	7	54	101	407	€
2011	1,496	556	53	399	776	3,279	DKK
	200	74	7	53	104	439	€
2012	1,682	565	57	438	791	3,533	DKK
	225	76	8	59	106	473	€
2013	1,757	585	53	445	677	3,517	DKK
	235	78	7	60	91	471	€
2014	2,013	646	59	424	812	3,955	DKK
	269	86	8	57	109	529	€
2015	2,074	672	60	446	781	4,033	DKK
	278	90	8	60	105	540	€
2016	2,289	692	59	460	870	4,369	DKK
	306	93	8	62	116	585	€
2017	2,368	727	56	385	893	4,429	DKK
	317	97	7	52	120	593	€
2018	2,344	726	60	354	907	4,431	DKK
	314	97	8	47	121	593	€

Source: Danish FSA

The statutory retirement age in Denmark was in 2019 65 years and 10 months, which is almost 5 months more than in 2018. The average life expectancy after retirement was 20 years or men and 23 years for women. The retirement age will gradually be raised until it reaches 68 years for people born after 1st of January 1963.

There is still broad political agreement that the standard retirement age must be gradually increased following increased life expectancy although some politicians are starting argueing that the retirement age should not at any time exceed 70 years. There are also discussions on how people who are not able to work until standard retirement age should be treated. Some argue for a differentiated retirement age, so that some groups - typically workers with a low level of education and an early start in the labour market - should be entitled to an earlier retirement age than others and without further testing. Others argue for a right to early retirement for all citizens subject to an individual medical test. The retirement age was part of the election campaign and the centre-left government has proclaimed that there will be a reform within the next couple of years.

Table DK4. Retirement age in Denmark 2000-2019

Year	Average retirement age
2000	62.5
2001	62.4
2002	62.3
2003	62.2
2004	62.2
2005	62.3
2006	62.3
2007	62.5
2008	62.7
2009	62.9
2010	63.1
2011	63.3
2012	63.5
2013	63.5
2014	64.2
2015	64.5
2016	64.9
2017	65.2
2018	65.4
2019*	65.9

*Source: Forsikringpension.dk, *preliminary*

Pillar I

Pillar I basically consists of two pension plans: the state pension for elderly inhabitants of Denmark (Folkepension) and the ATP, a mandatory pension scheme for all employees in the Danish labour market. Both schemes are regulated by law.[112]

[112] See: "Lov om sociale pensioner" (http://www.socialjura.dk/content-storage/love/love/pensionslov/) and "Lov om Arbejdsmarkedets Tillægspension" (https://www.retsinformation.dk/Forms/R0710.aspx?id=164210).

The state pension (Folkepension)

The state pension is a tax financed PAYG pension plan. The pension is given to all elderly persons who have lived in Denmark for the majority of their adult lives. Entitlement is not conditional on employment or tax payments earlier in life, but the pension is reduced for persons who have spent a substantial part of their lives outside Denmark.

The state pension consists of a basic pension and a personal supplementary pension. For 2020 the basic pension amounts to DKK 77.028 a year (€10,309,6).[113] The pension is means-tested against personal work income, but practically everybody who is retired is entitled to the same basic pension. The pension is reduced by 30% of personal work income above a threshold. The personal supplementary pension amounts up to DKK 85.464 (€11438,7) – for married persons this figure is a little lower. The supplementary pension is means-tested against all other income, including private pensions. The supplementary pension is reduced if all other income exceeds DKK 88,700 (€11,872), and if your income exceeds DKK 365,300 (€48,892) you are not entitled to any supplementary pension. Neither the basic pension nor the supplementary pension is means-tested against disposable assets as is the case for some other social benefits targeted at the elderly.

ATP

ATP (The Labor Market Supplementary Pension Scheme) is part of the Danish welfare system for old-age pensioners. ATP is a funded plan for all employees in the Danish labour market. It is mandatory and regulated by law. Since 1st of January 2016 the che contribution has been DKK 3,408 per year (€456) which will still be the case for 2020. The relatively small contribution tells that the ATP is meant to be a supplement to the state pension and other pension plans. Two thirds of the contribution are paid by the employer, 1/3 by the employee.[114] Self-employed and people who receive some kind of social benefits – e.g. temporarily unemployed people and people who are currently not working due to disability, illness etc. - can choose to continue paying to the ATP on a voluntary basis, in which case the employer's part is financed by the state.

The ATP is a lifelong pension. It is paid out from when the saver reaches the statutory retirement age until he passes away. The annual amount depends on how many years you have been saving. The maximum amount per year is currently DKK 24,500 (€3,279). If the beneficiary dies before reaching retirement age, the saved amount is paid out to the heirs.

The pension plans of Pillar I provide all Danish inhabitants with a basic income. Combined with the tax-financed healthcare system and tax-based old age care, this prevents poverty in old age Around half of the old age pensioners of today have no other income than Pillar I pension. But for many people, Pillar I cannot ensure a sufficient income relative to their income before retiring. Because of this, Pillar II schemes play an increasing role for new generations of old age pensioners. In 1997 only 24 percent of new retired people had pensions from pillar II and III. In 2018 more than 57 percent of the newly retired

[113] The currency rate used is 1 DKK = 0.133842 EUR, according to the foreign currency conversion rate published by the ECB for 31/12/2019 https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html.
[114] The pension contribution is nominal (fixed) and equally applicable for all workers, therefore the contribution rate (%) will vary depending on the income.

people had pensions from pillar II and III. As a result, the number of poor, elderly people has fallen sharply over the past 10 years (with more than 60%).

Pillar II

The schemes of Pillar II are non-statutory plans founded upon an unofficial agreement between the government and the social partners of the labour market.[115] Society provides economic incentives for saving in pension schemes and the social partners (the term used in the Danish pension system to describe unions and employer organisations) provides mandatory enrolment either through general agreements in the labor market or through employment contracts.

Within the last 25 years, we have seen a major expansion of Pillar II. Before 1990, Pillar II schemes were almost exclusively for civil servants and white-collar workers in the private sector. But since then, Pillar II schemes have been established for a very large majority of the labor market- more than 80%. In 2030 pension payouts will exceed public pension benefits.

Total contributions to occupational pension schemes amounted to DKK 111.6 billion (€15 billion) in 2019, 2.7 times higher than the level in 2000. The total work force is around 3 million people, so the overall average contribution can be estimated to 38,000 DKK per year (€5,086).

Contribution rates during the accumulation phase have gradually increased during the last 25 years and have probably reached their final level today. Contribution rates vary a lot, but a common rate for blue collar workers is 12% of the salary and 15-18% for white collar workers. Normally, 2/3 is paid by the employer and 1/3 by the employee.

All private pension schemes are fully funded. The vast majority are defined contribution (DC) schemes. Even in the very few defined benefit (DB) schemes, where the employer guarantees a pension proportional to the salary, the guarantee must be funded in a pension fund or a life insurance company.

[115] The Danish labour market has a high organization rate. There are frequently talks between the Government, unions and employers' organizations (tri-party-meetings). Sometime, political goals are best achieved through agreements rather by legislation. Then, an informal agreement can be settled between the parties and afterwards implemented through general agreements. Pillar II schemes for the private sector are an example of this. An agreement of the three parties was made in 1989 and pension schemes and contributions were given priority in the general agreements for the next 25 years.

Table DK5. Number of private pension contracts 2001-2018			
Year	Individual schemes	Occupational schemes	Total
2001	1,255,931	2,604,127	3,860,058
2002	1,187,110	2,837,482	4,024,592
2003	1,126,061	3,016,891	4,142,952
2004	953,925	3,055,831	4,009,756
2005	1,022,752	3,361,712	4,384,464
2006	1,095,731	3,405,394	4,501,125
2007	1,112,714	3,589,372	4,702,086
2008	1,293,226	3,771,977	5,065,203
2009	1,378,350	3,898,196	5,276,546
2010	1,142,774	3,891,501	5,034,275
2011	1,208,941	4,059,209	5,268,150
2012	1,398,422	3,997,145	5,395,567
2013	1,481,007	3,801,555	5,282,562
2014	1,431,842	4,153,361	5,585,203
2015	1,403,226	4,265,022	5,668,248
2016	1,568,273	4,028,323	5,596,596
2017	1,645,745	4,403,822	6,049,567
2018	1,666,448	4,513,366	6,179,814

Source: *ForsikringogPension.dk*

Around 80% of all working people contribute to a Pillar II scheme. We only have figures of the number of contributors for a specific year. But some do not pay contributions every year. One reason could be unemployment. Therefore, the percentage of people in the work force covered by an occupational pension scheme is probably somewhat higher than 80%.

Pillar II schemes are established in either life insurance companies, in pension funds (pensionskasser) or - not very commonly – in banks (around 2%). By the end of 2018,[116] pension funds and life insurance companies had a total of 4,513,366 contracts concerning occupational pension. In the same year, around 2.4 mln. persons paid contributions to one or more occupational schemes, so many employees are enrolled in more than one occupational pension scheme.

Pillar II DB schemes

Previously, it was common for civil servants in the state and in local governments to be entitled to a tax-based DB pension. These schemes have rapidly decreased. Today, only about 30.000 civil servants in the state are still paid in this way when they retire. Civil servants in local governments now enroll in a DC scheme, and the very few remaining DB schemes are typically funded in an insurance company.

A small number of private companies still offer DB schemes for some of their employees. These schemes are funded in specific pension funds – *firmapensionskasser*. Their importance has been decreasing for many years and so have their numbers, total assets and number of insured. The number of insured has fallen 1/3 from around 18,000 in 2008 till 12,300 in 2018. Today, only 4 firmapensionskasser hold assets of more than DKK 1,000 million (€134 million). Based on AuM, they

[116] Data for 2019 were not available at the time of writing. Therefore, wherever the text of this analysis or the tables or graphs refer to 2017 figures, it means that the research team could not find the necessary updates.

only constitute 1.2% of the total market, and most of the funds do not enroll new members anymore. Less than 2,500 persons made contributions in 2019, whereas benefits were paid out to around 10,000 people.

Pillar III

In principle, Pillar III pension schemes provide the same opportunities for the individual citizen as occupational schemes. Products available and tax rules are approximately identical. Individual schemes are offered by banks, insurance companies and most pension funds, but only if the saver is already enrolled through his job.

The strong growth of Pillar II schemes has, to some degree, diminished the interest for individual savings. Also, changes in tax regulation have negatively influenced the demand for Pillar III schemes.

In 2000, approximately 1 million persons contributed to an individual scheme. In 2017, the number had decreased to 674,315. The number was only 571,360 in 2013 and then it raised again til 2017 and is now decreasing a little bit again. The huge fall in 2013 is due to the fact that there was a shift in the lump sum pension from kapitalpension to alderopsparing. People had to get used to the new lump sum pension. Also the introduction of a ceiling on the contributions to the periodic installments or fixed term annuities (*ratepension*) in 2012 is part of the explanation[117].

In 2000, contributions to individual schemes amounted to DKK 16,209 mln (€2,177 mln), or around 30% of total contributions for pension schemes. The figure decreased until 2013 and has been growing slowly thereafter. In 2018, contributions to individual schemes were almost at the same level (DKK 15,452 (euro 2,086) and for 2019 15,550 mln or €2,0181 mln) as in 2000.

Regulations have been as already mentioned been tightened, especially for periodic instalments and lump sum pensions. This may also have had an impact on the demand for Pillar III schemes. In Pillar II schemes, the change of regulations has led to growing contributions to lifelong annuities, but the same substitution has not been seen in Pillar III.

Savings in banks have played a much more important role for individual schemes than for occupational schemes. Until 2013, when the tax regulation for lump sum pension was changed, individual scheme savings were predominantly held in banks, rather than in insurance companies and pension funds. Today, around 60% of contributions are in insurance companies or pension funds and 40% are in banks.

Replacement ratio and pension benefits

Table DK5 shows the replacement ratio for the full population and split by educational background. The replacement ratio is calculated as the disposable income in the year after retirement relative to the year before retirement. The income is presented net of taxes.

[117] See https://www.forsikringogpension.dk/media/5252/pensionsindbetalinger-cps.pdf

Table DK6. Replacement ratio and educational background							
	Working before retirement Education						Not working before retirement
	Unskilled workers	Skilled workers	Short cycle higher education	Medium cycle higher education	Long cycle higher education	All	
2004	72.2	71.2	73.9	82.9	88.2	73.5	88.5
2005	71.9	71.5	75.2	82.1	89.3	73.7	91.4
2006	69.6	69.4	72.7	79.9	84.6	71.4	95.3
2007	68.1	67.7	70.8	77.3	83.3	69.7	96
2008	67.7	67.5	70	76.8	81.1	69.4	100.5
2009	67.4	66.6	69.4	76.5	77.3	68.8	100.9
2010	70.3	69.5	73	78.2	80.1	71.5	103.2
2011	67.2	66.5	73.3	76.2	77.2	68.8	101.6
2012	67.9	66.5	70.1	74.9	77.2	68.8	101.9
2013	70.2	69.2	72.7	77	78.6	71.2	107.6
2014	72.1	71.9	74.1	80	81.9	73.8	107.4
2015	71.4	71	77.3	79.6	83.5	73.5	108
2016	73.1	72.2	78.4	79	83.6	74.4	107.1
2017	72.1	71	76.1	76.3	78.3	73.1	104.8
2018	74.5	71.8	77.5	77.6	78.5	74.3	105.5

Source: Forsikfring & Pension Danmark

The average net replacement rate was 74% in 2018, which indicates a small increase from 2017. The importance of private pensions is reflected in a higher replacement ratio for people with a higher education. This is because they have been contributing to a pension plan throughout their careers with higher contribution rates, whereas people with lower education have enrolled later and their contribution rates have only gradually grown.[118] Therefore, the ratio for people with lower education is expected to grow in the forthcoming years relative to the average. The replacement rate[119] is measured as the income in the first year after retirement relative to the income in the last year before retirement. For people who were not working in the year before retirement, the replacement ratio is naturally very high, since their income before retiring was typically very low, and since they are entitled to pension from the state and sometimes even from private pension schemes.

Today, the most important source of income for pensioners is Pillar I. Approximately 40% of all current pensioners have little or no other income. Payouts from the *folkepension* amounts to DKK 120 billion per year (€16.1 billion). The ATP pays out around DKK 17,1 billion per year (€2.3 billion). Total pay-outs from private pensions schemes to pensioners were around DKK 71 billion (€9.5 billion) in 2017.

For the 50% of today's pensioners with the lowest income, 90% of their income is *folkepension* (thus, from Pillar I).

But this situation is changing with the growing importance of Pillar II. Today almost 60 percent of the newly retired people have made contributions to pillar II during their active years on the labormarket.

[118] This is because pension schemes for lower educated people in the private sector were not established until 1990. The contribution rates grew gradually thereafter, therefore people who retired today were between 35-40 years old when they enrolled, thus their contributions were low in the first many years.
[119] This replacement rate is provided from a different source than the one in the General Report.

In 2040, private pensions are expected to exceed half of the total income for about 40% of the pensioners. Even for the lowest income groups of the retired population, about 20% of their income is expected to come from private pensions under the condition of an unchanged level for the *folkepension* (of Pillar I).[120]

As stated earlier, around 80% of all working people contribute to a Pillar II scheme. But that does not necessarily mean that the remaining 20% will have a low pension replacement rate:

- A large part of the latter are people with very low income, whose coverage from Pillar I is already at around 100%;
- Another large group consists of people temporarily without a job or people with part time jobs, e.g. students, who will save for pension in Pillar II schemes when they become full time employees; and
- A third group consists of the self-employed, such as farmers, taxi drivers etc. and of employees without an occupational pension scheme; for this group, the absence of pension savings might lead to a low coverage in old age.

Pension Vehicles

Private pension schemes are placed in pension funds, insurance companies or in banks. This goes for Pillar II as well as for Pillar III.

In the description, the emphasis is on Pillar II since it is the more important of the two. If Pillar III differs from Pillar II, it is mentioned in the text.

A Danish industry-wide *pensionskasse* – or pension fund – is a legal entity owned and governed by its members. A *pensionskasse* can provide the same kind of products as a life insurance company and it is subject to the same kind of regulation as a life insurance company – specifically, the Solvency II Directive.[121]

The first occupational schemes for civil servants were established in *pensionskasser,* which provided pension schemes for a specific profession, e.g. nurses. Occupational pension schemes in the private sector originally covered employees with different professional backgrounds working in the same company. Such schemes used a life insurance company as a vehicle. Today, the differences between the legal forms have lost importance. Many occupational pension schemes for the private sector are industry-wide and are administered by life insurance companies owned by the social partners.

But still, a distinction is often made between industry-wide schemes and company schemes. Industry-wide schemes are often more standardized and with little freedom of choice left to the single member. All decisions are made collectively. The pension provider is only indirectly exposed to competition since customer mobility is low. These characteristics make in general the schemes relatively cheap. Insurance companies administering company schemes are more exposed to competition. Company schemes more often change pension providers. In general, company schemes offer more individual possibilities,

[120] See http://www.atp.dk
[121] Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (recast) http://data.europa.eu/eli/dir/2009/138/2014-05-23.

e.g. concerning insurance coverage, choosing between a guaranteed or none-guaranteed scheme etc. Therefore – as a general trend – the insurance companies have more costs, especially related to acquisition and to individual counseling.

An occupational pension scheme normally provides coverage for old age, disability and early death. Critical illness and even health care are other insurance risks that have become typical to offer. Typically, 15%-25% of the contributions are spent on coverage for social risks other than old age.

The supply of pension products is regulated partly by tax law and partly by the general regulation for insurance and banking. The regulation is the same for Pillar II and Pillar III. This means that insurance companies and pension funds on the one hand and banks on the othe1r hand provide competing products to the market. Products offered by life insurance companies and pension funds may accumulate savings but must also cover some kind of insurance risk – longevity, death, disability etc. – whereas banks can only act as an intermediary of insurance coverage supplementary to a saving product.

Tax regulation defines the products

The detailed regulation of pension products is tax regulation.

The tax regulation defines the distinctions between the 3 groups of pension products:

- Annuities (*livrente*);
- Periodic installments or fixed term annuities (*ratepension*);
- Lump sum pension (*kapitalpension/aldersopsparing*);

All kind of pension savings can be paid out from five years before statutory retirement age.

Annuities (*livrenter*) provide the beneficiary with a monthly payout from retirement to death. Income tax is deferred. Regular contributions to an annuity are deductable in the income tax base without any limit. Pay-outs are taxed as personal income. An annuity can be life-contingent, or the capital value can be paid out to the heirs in the case of death.

Periodic installments or fixed term annuities (*ratepension*) provide you with monthly installments of equal amounts for a period of minimum 10 years and maximum 25 years. A *ratepension* can be life-contingent or the capital value can be paid out to the heirs in the case of [122]the income tax base up to a maximum of DKK 71.500 (€7,340) in 2019 and DKK 73,100 (in 2020. The percentage of deduction depends on hovw many years are left before retirement. Pay-outs are taxed as personal income.

Lump sum pensions (kapitalpension/aldersopsparing) provide you with a lump sum in old age. The lump sum is paid out five years before statutory retirement age at the earliest and 15 years after this age at the latest. The regulation of this product has changed a lot during the years. Today there are two products in the market: *kapitalpension* and *aldersopsparing*. For a *kapitalpension* the income tax is deferred. When paid out the accumulated savings are taxed at 40%. New contributions to a *kapitalpension* have not been allowed since 2013. Instead you can contribute to an *aldersopsparing.*

[122] https://skat.dk/skat.aspx?oid=2559

Contributions to an aldersopsparing are not deductable and the pay outs are not taxed. So, income tax is no longer deferred when saving in this type of product. The maximum contribution was DKK 29,600 (4,000 euros) in 2017, but the regulation has been changed, so the maximum contribution is for 2020DKK 5,300 per year (Euro 709) except for the last 5 years before retirement age, where the maximum contribution per year is DKK 50,200 (see section on taxation).

Table DK7 (A). Number of persons contributing to one or more private pension schemes, 1998-2018

Year	Individual schemes						
	Annuities	Periodic instalment, insurance	Lump sum insurance	Periodic instalment, bank	Lump sum, bank	TTE lump sum, insurance or bank	*One or more individual schemes*
1998	259,000	82,000	267,000	45,000	744,000	-	1,146,000
1999	257,000	96,000	236,000	91,000	631,000	-	1,078,000
2000	260,000	102,000	221,000	124,000	600,000	-	1,064,000
2001	256,186	105,372	208,361	126,776	566,013	-	1,029,736
2002	252,354	109,068	198,518	137,834	545,463	-	1,010,388
2003	249,901	112,817	189,861	151,401	540,339	-	1,005,919
2004	260,574	117,470	182,494	168,181	543,297	-	1,017,806
2005	262,298	119,131	174,437	198,445	553,162	-	1,033,467
2006	255,074	119,054	166,014	221,825	561,435	-	1,038,035
2007	238,632	123,642	156,234	290,036	646,566	-	1,132,179
2008	232,590	124,325	145,194	259,241	529,316	-	1,017,452
2009	226,275	122,904	137,893	277,580	505,959	-	998,868
2010	216,788	91,110	128,657	191,101	479,363	1,700	855,465
2011	225,108	90,557	121,585	192,034	467,943	7,098	856,640
2012	214,991	93,408	118,720	177,146	457,700	6,795	812,337
2013	221,418	144,571	5,791	206,323	14,711	5,997	571,360
2014	237,274	137,031	3,681	203,616	2,012	220,648	631,716
2015	242,256	130,106	2,953	194,441	1,302	265,193	656,600
2016	253,018	126,346	2,591	185,565	933	291,129	650,869
2017	262,908	124,312	2,289	203,182	953	386,673	740,165
2018	268,336	131,673	2,009	187,622	830	327,887	674,315

Source: Forsikring & Pension Danmark

Table DK7 (B). Number of persons contributing to one or more private pension schemes, 1998-2018							
	Occupational schemes						
	Annuities	Periodic instalment, insurance	Periodic instalment, bank	Lump sum, insurance	Lump sum, bank	TTE lump sum, insurance or bank	*One or more occupational schemes*
1998	1,513,000	130,000	26,000	742,000	269,000	-	1,721,000
1999	1,571,000	224,000	60,000	836,000	205,000	-	1,751,000
2000	1,676,000	537,000	69,000	1,115,000	196,000	-	1,855,000
2001	1,728,748	624,144	73,330	1,148,454	195,035	-	1,917,845
2002	1,755,775	678,454	67,771	1,114,154	150,613	-	1,944,128
2003	1,782,288	896,553	68,229	1,103,331	133,711	-	1,963,281
2004	1,818,140	962,244	75,532	1,126,380	118,735	-	1,995,636
2005	1,851,642	1,009,499	87,712	1,133,902	104,503	-	2,027,786
2006	1,897,567	1,099,180	106,666	1,150,081	100,874	-	2,088,547
2007	1,971,768	1,192,310	117,778	1,183,232	97,106	-	2,150,860
2008	2,081,505	1,259,956	123,282	1,184,460	93,221	-	2,270,862
2009	2,077,861	1,251,463	127,094	1,126,765	87,099	-	2,259,965
2010	2,061,011	1,240,876	100,526	1,046,102	80,423	-	2,102,855
2011	2,091,462	1,270,709	92,699	1,009,685	75,510	-	2,242,204
2012	2,123,697	1,310,147	85,834	965,023	72,376	-	2,259,603
2013	2,143,487	1,464,161	92,614	3,537	1,951	9,552	2,265,953
2014	2,174,825	1,506,361	87,255	1,989	142	10,069	2,290,884
2015	2,197,722	1,535,244	82,409	419	37	11,343	2,310,180
2016	2,242,792	1,572,731	78,058	208	12	13,363	2,344,391
2017	2,284,406	1,613,025	74,175	154	35	16,907	2,378,569
2018	2,302,287	1,605,300	72,176	123	253	559,030	2,398,171

Source: Forsikring & Pension Danmark

Table DK8. Total pension contributions to private pension schemes (1999-2019)	
Year	Amount in DKK millions (€ millions)
1999	51,762 (6,948)
2000	57,148 (7,671)
2001	62,324 (8,366)
2002	67,596 (9,043)
2003	73,682 (9,890)
2004	82,090 (11,019)
2005	92,182 (12,373)
2006	101,626 (13,641)
2007	110,284 (14,803)
2008	112,919 (15,157)
2009	116,841 (15,683)
2010	104,872 (14,077)
2011	106,998 (14,362)
2012	107,745 (14,462)
2013	105,209 (14,122)
2014	109,821 (14,741)
2015	111,618 (14,982)
2016	116,447 (15,630)
2017	121,606 (16,323)
2018	123,548 (16,536)
2019*	127,150 (17,018)

Source: ForsikringogPension.dk

Very often a pension scheme combines the three groups into a mix, i.e. a lump sum, with periodic installments up to the maximum allowed contribution and lifelong annuities for any payment above the maximum.

Normally the distinction between the groups of products only relates to tax treatment and the pay-out phase. The investment assets and the investment policies are pooled.

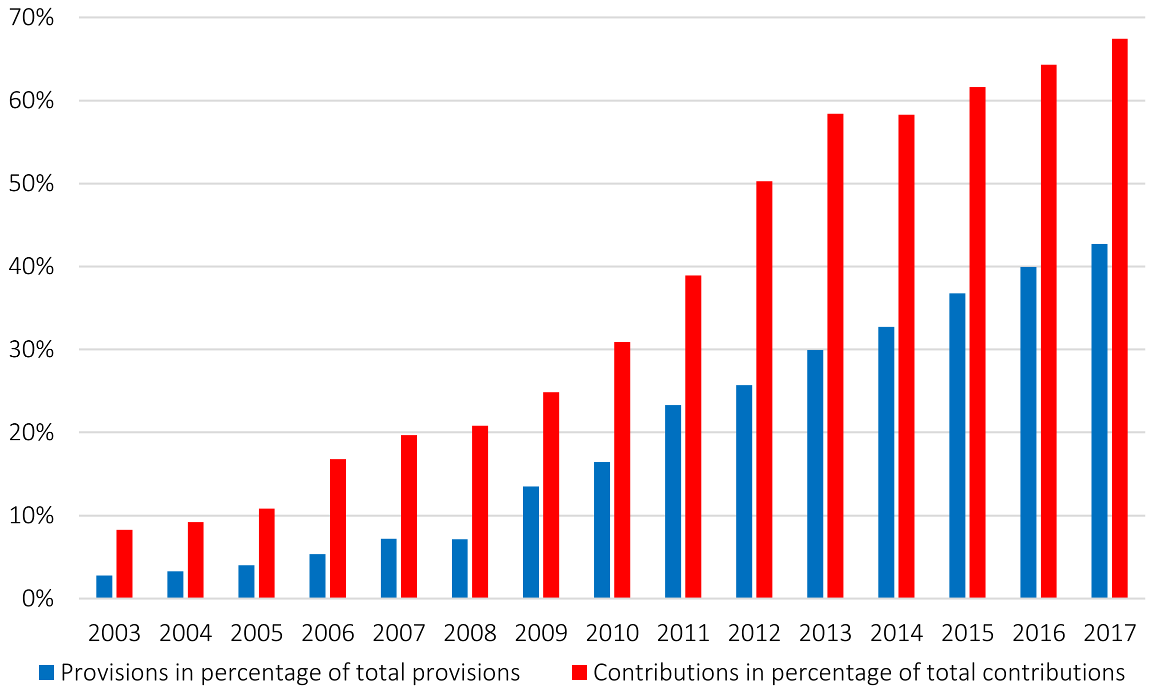
Pension savings in banks can have the form of a periodic instalment or a lump sum pay-out. There are three ways in which pension savings in banks can be invested:

- as an ordinary deposit with the interest rate offered by the bank;
- in investment funds of the customers own choice; or
- in listed equities, bonds and other financial assets owned directly by the customer.

The Danish private pension schemes are DC schemes (with a very few Pillar II exceptions). The system has gradually changed from a guarantee-based insurance approach into a market rate-based approach. Until 1994, the schemes followed a DC hybrid model. According to this model, the life insurance company or the pension fund guarantees a minimum benefit, calculated on assumptions about a number of parameters such as interest rates, costs and insurance risks like longevity, death rates and disability. The guarantee is issued by the pension provider, not by the employer. The model was originally meant to have no or very little risk, since the regulatory assumptions were very cautious. Therefore, the realized result was always a surplus, and the customers were granted a bonus. But the interest rate and the longevity assumptions turned out to be riskier than expected. Therefore, the Financial Supervisory Authority (FSA) gradually lowered the maximum allowed interest rate to 1% for new contracts and introduced new requirements for longevity. At the same time, the FSA gradually raised the required provisions for existing guarantees. The guarantees are often binding for the insurance company/pension fund. However, some occupational pension schemes have been able to decide collectively to cancel the guarantees and change to a classical DC model. Others have offered their customers compensation if they were willing to cancel the guarantee individually. Thus, the high guarantee schemes play a much less important role today than a few years ago.

In 2006, contributions to guaranteed schemes amounted to 83% of total contributions. In 2018, this figure has decreased to 28%. So, today around 60% of all new savings are placed in DC schemes without guarantee or with a guarantee only against loss. Measured by the provisions, the guaranteed schemes have decreased from 95% in 2006 to 60% in 2018. In addition, the high-rate guarantees – above 4% in interest rate – have decreased even more, from 58% in 2005 to 13% in 2018[123].

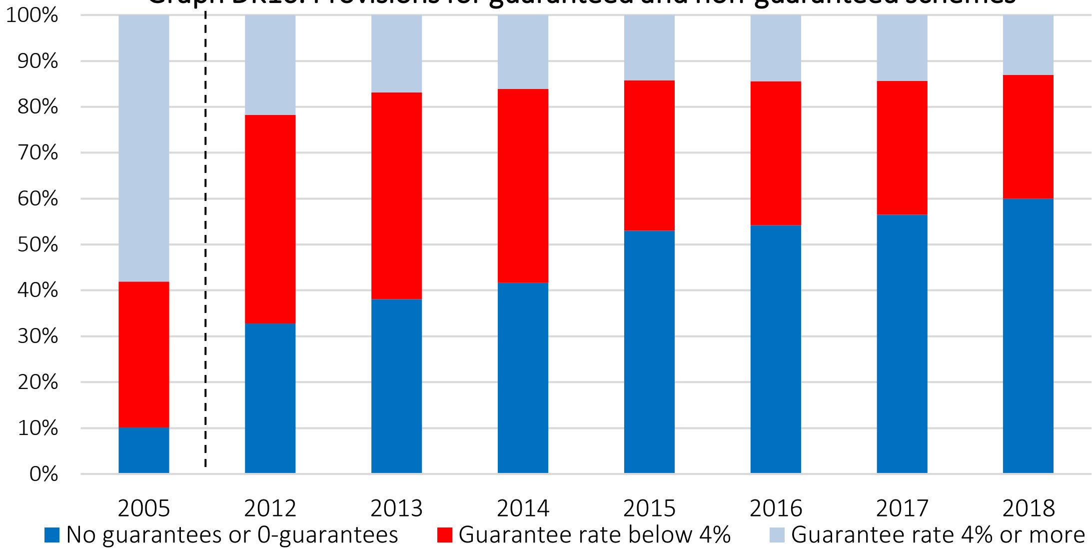
Graph DK9. Relative development of provisions and contributions for pension schemes without guarantees



Source: Forsikring & Pension Danmark

[123] https://www.finanstilsynet.dk/~/media/Tal-og-fakta/2019/MU/Markedsudviklingsartikel_LP_2018-pdf.pdf?la=da, tabel A2.

Graph DK10. Provisions for guaranteed and non-guaranteed schemes



Source: Forsikring & Pension Danmark

Charges

The level of costs has received increasing attention in recent years. This is partly due to the low rate of interest in the market.

The Money and Pension Panel – a Council under the Ministry of Industry, Business and Financial Affairs – has calculated that, under realistic assumptions, an increase of costs of 50% of total savings/provisions will lead to a reduction of life-time consumption of 1.2% for low income groups and 2.3% for high income groups. The same increase makes a two years postponement of the retirement age necessary if the life-time consumption shall remain unchanged.

The Danish FSA has analyzed the development of administration costs, including costs related to acquisitions and sales, but not including investment costs. The administration costs have declined over the last 10 years to a level in 2018 of 0,18% and in 2019 of 0,17% of total provisions. The FSA distinguishes between market-oriented insurance companies (running mainly company pension schemes) and non-market-oriented insurance companies/pension funds (running mainly industry-wide pension schemes). Since industry-wide pension schemes are typically governed by the customer representatives, and since their schemes are often very standardized, they are in general cheaper to run than company schemes. The FSA has calculated the administration costs for non-market-oriented insurance companies/pension funds to around 0.10% of total provisions in 2018.

Table DK11. Administration costs in DKK and in percentage of total provisions and contributions, 2007 -2019				
	Costs/customer		Costs in percentage	Costs in percentage
	in DKK	in euro	of total provisions	of total contributions
2007	949	128	0.44	4.7
2008	895	120	0.43	4.48
2009	929	125	0.43	4.75
2010	813	109	0.34	3.99
2011	956	129	0.36	4.15
2012	882	119	0.33	3.89
2013	881	119	0.3	3.63
2014	826	111	0.28	3.34
2015	772	104	0.26	2.95
2016	769	103	0.22	n.a.
2017	755	102	0.19	n.a.
2018	n.a	n.a.	0.18	n.a.
2019	n.a	n.a.	0.17	n.a.

Source: Danish FSA

In addition, new self-regulation in the pension sector is an indication of an increasing attention to costs. Since 2011, life insurance companies and pension funds have agreed to inform all their customers of their total charges in DKK (ÅOK) and their total charges in percentage of the value of their pension (ÅOP) on a yearly basis. These key figures include direct and indirect administration costs, direct and indirect investment costs, charges to the company for any guarantees and other kinds of risks as well as any charges paid by the life insurance company to intermediaries. How total costs are distributed to the individual customers is decided by each insurance company or pension fund, but the key for distribution is controlled by the external auditor to ensure equivalence between the figures of the annual report and total distributed charges (ÅOK/ÅOP).

For market comparisons between life-insurance companies and pension funds, key figures for several standardized examples are published on the website www.faktaompension.dk (see below).

While higher administration costs always lead to lower pension benefits, it is difficult to evaluate investment costs. Investing in government bonds is very cheap – but it might not be the most profitable investment. Investing in foreign equities is more expensive – but might have a higher expected return. So, the relationship between investment costs, investments risks and expected investment return is not easy to estimate.

Furthermore, the pension companies' investment management must take their liabilities into consideration. Some investments are made in order to hedge the risk against, for example, changes in interest rates. When comparing investment costs, one must consider the existence of guarantees.

The website faktaompension.dk offers the opportunity to compare total charges of various pension companies and for various types of customers. All figures are calculated and reported by the pension companies and the website is run by the Danish Insurance Association.

Table DK11 compares total charges for the five largest Danish companies, for three different persons and for DC schemes with no guarantee and hybrid DC schemes, respectively. The three persons differ on three parameters: age, yearly contribution, and value of previous savings. The site offers more options to combine the parameters than shown here. The first example is a young person who pays relatively small contributions and is newly enrolled in the scheme. The second example is a middle-aged person with larger contributions and some previous savings. The third example is a person close to retirement age with the same contributions as in example 2 and a larger value of previous savings.[124]

Table DK12. Comparative example of charges between different pension products in Denmark

Company	Total in %	Total	Administration	Investment	Guarantee
Charges in DKK (euro)					
Hybrid DC DKK (euro)					
PFA					
Person 1	4.2	1.151 (154)	744	208	199
Person 2	1.7	9.172(1.231)	920	4,213	4,039
Person 3	1.6	16.742 (2.247)	920	8,078	7.444
Danica					
Person 1	4.3	1.169 (157)	804	201	163
Person 2	1.5	8.221 (1.103)	804	4,068	3,321
Person 3	1.4	15.023 (2.017)	804	7,852	6,367
Sampension					
Person 1	2.0	572 (77)	420	152	0
Person 2	0.6	3.475 (466)	420	3,055	0
Person 3	0.6	6.275 (842)	420	5,855	0
DC - no guarantee					
PFA					
Person 1	2.0	571 (77)	345	226	
Person 2	0.9	5.102 (685)	575	4,527	
Person 3	0.7	7.663 (1.029)	575	7,088	
Danica					
Person 1	2.4	674 (91)	414	260	
Person 2	1.0	5.692 (764)	690	5.002	
Person 3	0.9	9.675(1.299)	690	8.985	
PensionDanmark					
Person 1	1.5	421 (57)	297	124	
Person 2	0.5	2.713 (364)	297	2.416	
Person 3	0.4	4.285 (575)	297	3.988	
Sampension					
Person 1	2.0	574 (77)	420	154	

[124] The companies compared are: PFA – Denmark's largest life insurance company with around 1,3 million customers in 2019 and total assets of about DKK 690 billion (€92 billion); a non-profit company founded in 1918 by a number of private employer organizations which runs mostly pensions schemes for large or medium-sized Danish companies; Danica – the second-largest life-insurance company in Denmark with around 800,000 customers and assets of about DKK 450 billion (€60 billion). Today owned by Danske Bank. Runs mostly pension schemes for large or medium-sized Danish companies; Pensiondanmark – founded in 1989 by the social partners to run an industry-wide pension scheme for unskilled workers, mostly in the private sector. 750,000 customers and assets of around DKK 270 billion (36 billion euros); Industriens Pension – founded in 1989 by the social partners to run an industry-wide pension scheme for skilled industrial workers, mostly in the private sector. More than 410,000 customers and assets of around DKK 195billion (26 billion euros); Sampension – founded in 1945 by Danish local governments, originally to run pension schemes for municipal employees. Now runs industry-wide pension schemes for a number of public and private employees. Around 300,000 customers and managing assets of more than DKK 300 billion (€40 billion) due to new mergers.

Person 2	0.5	3.102 (416)	420	2.682
Person 3	0.4	4.697 (630)	420	4.277
Industriens Pension				
Person 1	1.4	387 (52)	264	123
Person 2	0.8	4.597 (617)	264	4.333
Person 3	0.7	7.128(957)	264	6.864

Source: faktaompension.dk

There are a number of general conclusions to be made from the examples in Table DK11.

1. Administration costs constitute only the minor part of total charges for the majority of customers. Investment costs increase rapidly with the size of the pension savings.
2. Total charges are lowest in the industry-wide schemes with the highest degree of standardization and with no acquisition costs.
3. Total charges seem to be highest in the so-called market-oriented companies (PFA and Danica) with the best possibilities for the customer to adjust the product to his own preferences
4. Total charges are substantially higher for hybrid DC schemes with a guarantee than for schemes without guarantee. This is due to a specific charge for the guarantee.

Taxation

The actual Danish tax model was originally an EET model, but it has been adjusted through numerous amendments, so today one might as well say that the Danish model is a TTE model.

The tax legislation of pension savings has followed two general trends. The first trend has been adjustments of the tax incentives to a politically desired level. This has mostly led to a reduction of the tax incentives, but we also have examples of amendments created to promote life-long pension over lump sum payments. The second trend is a general move towards earlier income taxation of pension savings, i.e. adjustments of the general deferral of income tax for pensions.

The first major adjustment to the EET regime was introduced as early as 1984. From this year, all interest earnings in pension schemes were taxed at a variable tax rate aiming to tax all real interest above 3.5%. From 1998, this real interest rate taxation was replaced by a flat rate nominal taxation on all yields from pension assets. The tax rate is at present 15.3%. Thus, Denmark was probably the first country to go from EET to ETT. But even today, a lower taxation of investment return constitutes the major tax incentive to pension savings.

In general, pension contributions are tax-deductable when saved, and income tax is deferred until the money is paid out for consumption. But there are exceptions to this general rule. In 1994, the income tax base was broadened by lowering the income tax rate and introducing a gross tax on all wage income (arbejdsmarkedsbidrag). This tax of 8% includes pension contributions. When paid out, no wage tax is imposed. Thus, the deferral of income tax was partly abandoned.

In 2013, future contributions to the lump sum pension scheme named "*kapitalpension*" was abandoned and a tax regulation for a new product "*aldersopsparing*" was introduced. Contributions into a *kapitalpension* had until then been exempted from income taxation. When paid out as a lump sum the money was and still is taxed at a flat rate of 40%. In an *aldersopsparing*, there is no exemption for contributions. When retiring, you can take out the money without any income taxation. In both schemes, the return on investments is taxed by 15,3 pct. like in other schemes.

Thus, though the starting point for the tax regime was the EET model, the tax rules have gradually been adjusted to a combination of an ETT regime and a TTE regime.

Table DK13. Taxation of contributions, investment returns, and pension pay outs			
	Contributions	Investment returns (4)	Pay outs
Annuities	E (1)	T	T
Periodic installments	E (1) (5)	T	T
Lump sum			
Kapitalpension	E (1) (2)	T	T (3)
Aldersopsopsparing	T	T	E

Source: BETTER FINANCE; Where: 1) Taxed with 8% wage tax; 2) New contributions have not been allowed since 2013; 3) Taxed at 40%; 4) All kind of returns are taxed at 15,3 %; 5) Exempted up to a maximum of DKK 53.500.

The latest amendments from 2018 do not concern the tax rules directly, but rather the total impact of tax and social benefits. The existence of a political dilemma became more and more clear. On the one hand, society wants the Danes to save for their old age. Therefore, tax incentives to save for pensions are needed. On the other hand, it is generally expected that the welfare system takes care of elderly citizens with little income. Therefore, social benefits are directed towards old aged people with little or no private pension. Thus, the interaction between the tax system and earnings-related social benefits resulted in extremely high implicit marginal tax rates for pension saving, even higher than 100%. Instead of a tax incentive, some people were losing money on their marginal pension contributions. This was particularly a problem for contributions made in the last 5-15 years before retirement age. As pensions in Pillar II schemes increase, the interaction between pension tax and social benefits would become an increasing problem.

Since Parliament did not want to change the rules for social benefits, amendments of the regulation for pension schemes were passed in 2017 and 2018.

First, the regulation for saving in *aldersopsparing* was changed. The right to receive social benefits is not means-tested against *aldersopsparing*. Therefore, the problem was partly solved by allowing extra saving in *aldersopsparing* in the critical period just before retirement. The maximum allowed amount to save in an aldersopsparing is in general DKK 5,300 per year (€709) in 2020. Now, a yearly contribution of DKK 50,200 (€6,719) is allowed in the last five years before retirement age. Thus, many people will benefit from switching their saving into an *aldersopsparing* in the last years before retirement.

Second, the value of the tax-exemption of savings in annuities and periodic installments has been raised. In the future, if you save DKK 100 in an exempted pension scheme, your taxable income is lowered by DKK 103.1. In addition, contributions in the last fifteen years before retirement age are exempted by 108.2%. There is a limited contribution of DKK 50,000 (€6,700) per year for this extra allowance.

Pension Returns

In general, pension savers have little influence on how their savings are invested. The investment policy is decided by the insurance company or the pension fund with the double aim to limit the risk and make the highest return possible. Savers can only influence the investments directly in unit-linked schemes and in bank saving schemes.

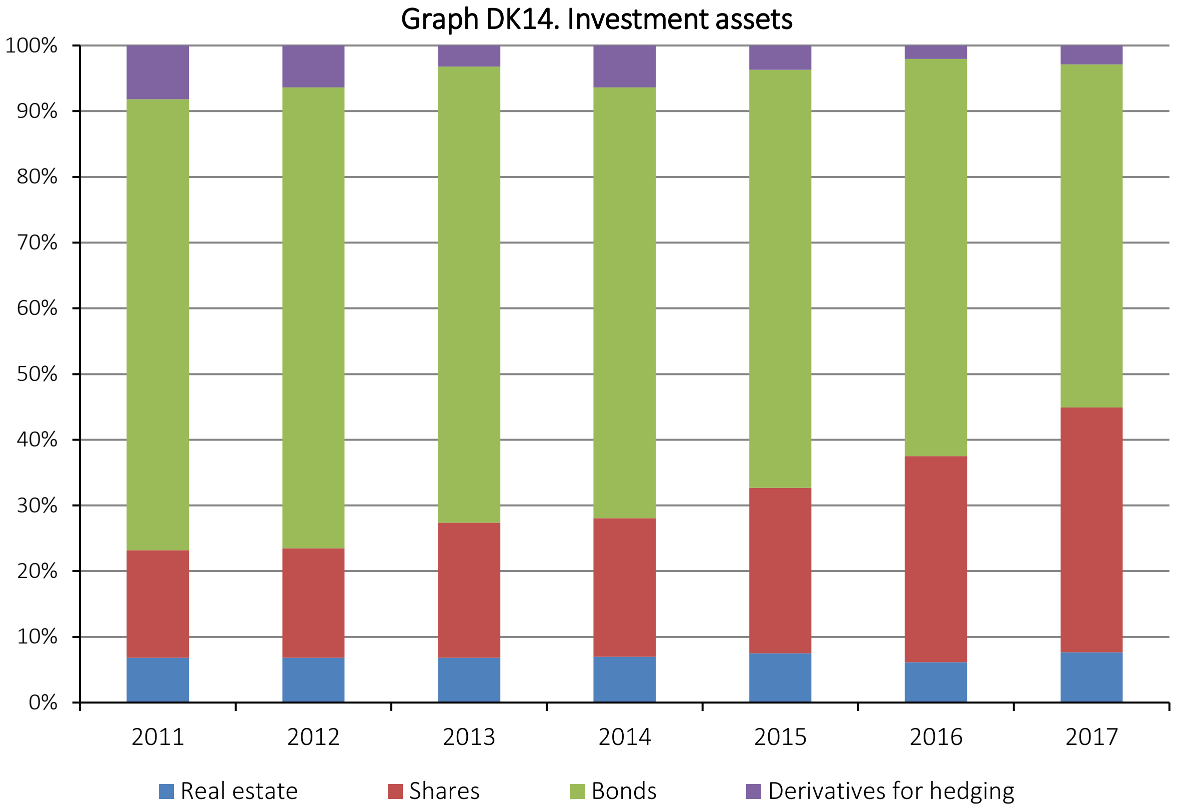
For DC schemes without guarantee, the major market-oriented insurance companies offer unit-linked products. This is not common in the market for industry-wide schemes. Here the demand for these products is not present. Even customers in unit-linked schemes often let the insurance company choose investment funds based on the reported risk profile of the customer.

More common are so-called life-cycle products. The insurance company invests in two portfolios, one with high risk and one with low risk. When you are enrolled as a young person, all your contributions are invested in the high-risk portfolio. As you get closer to retirement age, your money is gradually moved to the low risk portfolio. In most companies the split between the two portfolios depends only on your age. But some companies also offer their customers the opportunity to report their risk profile as an additional parameter. The words “high” and “low” risk should be understood bearing in mind the very high spread of these portfolios. Using the risk classification for investment funds (a scale from 1 to 7), the low as well as the high-risk portfolios are normally classified between 3.5 and 4.5.

For hybrid DC schemes with guarantees, the investment policy depends on the guaranteed interest rate and the size of accumulated reserves. The higher the rate – up to 4.5% – and the smaller the reserves, the more focus on hedging and risk minimizing.

Pension savings in banks give the individual customer the opportunity to make his own investment decisions. Savings can be invested in investment funds of the customers own choice, or even in listed stocks and bonds. No statistic data are available for these kinds of investments.

Pension schemes seek an investment return that is stable in the long run, predictable and as high as possible. Traditionally, a large part of pension savings are invested in bonds. The low interest rate environment of recent years has, therefore, been a challenge. Danish pensions are still, for a large part invested in bonds, but less so in government bonds and more in mortgage bonds. The Danish market has a long tradition for financing real estate with mortgage bonds, the mortgage bond market is huge compared to the size of the country, and the credit risk is rated almost as low as for government bonds.



Investments in equities have grown, and so have investments in non-listed assets and indirect investments in emerging sectors.

Lately, many pension funds have turned to alternative investments such as infrastructure investments, e.g. in green energy. A lot of windmill parks inside and outside Denmark are financed partly by pension funds. Also, investments in emerging geographic markets, investment in forestry and other alternatives to more traditional investments have become more common, but still constitute a minor part of total investment assets.

The difference in investment policies between schemes with and without guarantees has become more outspoken in recent years. The spread in risk and return has therefore grown.

Until now, the Danish pension sector has managed the financial crisis and the low interest rate environment rather well. Although the last decade started out with substantial losses, the following years more than compensated for these losses. Although it has been a decade of low interest rates and low economic growth, money invested in a private pension scheme in 2007 has, on average, accumulated a real return of approximately 50 percent by 2019. This equates to an average interest rate after tax and inflation of approximately 4.0% a year (a little higher for non-guaranteed products).

Figures for 2019 concerning the investment return for the sector in total are not yet available. In general pension funds and life insurance companies have experienced negative returns in 2018 for almost all asset groups. Political topics such as the relations between the USA and China and the uncertainty concerning Brexit have had negative impact on the markets, resulting in overall losses – typically between -1 to -5 pct. (average -3,1 pct.) - for 2018. The greater losses were in market rate-based schemes with no guarantee, while the investment return for guaranted DC-schemes typically was just below zero. In 2019 where the markets gave a positive return, schemes with no guarantee had the highest return, thus illustrating a more cautious investment policy for guaranteed products.

<table>
<tr><th colspan="7">Table DK15. Nominal and real return of private pension schemes in Denmark 2007-2019 (in %)</th></tr>
<tr><th></th><th colspan="2">Nominal return before taxes and inflation</th><th colspan="2">Nominal return after taxes</th><th colspan="2">Real return after taxes and inflation</th></tr>
<tr><td>2007</td><td colspan="2">0.89</td><td colspan="2">0.75</td><td colspan="2">0.74</td></tr>
<tr><td>2008</td><td colspan="2">-3.09</td><td colspan="2">-2.62</td><td colspan="2">-2.65</td></tr>
<tr><td>2009</td><td colspan="2">7.57</td><td colspan="2">6.41</td><td colspan="2">6.4</td></tr>
<tr><td>2010</td><td colspan="2">10.13</td><td colspan="2">8.58</td><td colspan="2">8.56</td></tr>
<tr><td>2011</td><td colspan="2">9.12</td><td colspan="2">7.72</td><td colspan="2">7.7</td></tr>
<tr><td>2012</td><td colspan="2">10.47</td><td colspan="2">8.87</td><td colspan="2">8.84</td></tr>
<tr><td>2013</td><td colspan="2">1.88</td><td colspan="2">1.59</td><td colspan="2">1.59</td></tr>
<tr><td>2014</td><td colspan="2">12.95</td><td colspan="2">10.97</td><td colspan="2">10.96</td></tr>
<tr><td>2015</td><td colspan="2">1.8</td><td colspan="2">1.52</td><td colspan="2">1.52</td></tr>
<tr><td></td><td>Hybrid DC with guarantee</td><td>DC with no guarantee</td><td>Hybrid DC with guarantee</td><td>DC with no guarantee</td><td>Hybrid DC with guarantee</td><td>DC with no guarantee</td></tr>
<tr><td>2016</td><td>7.58</td><td>6.16</td><td>6.42</td><td>5.22</td><td>6.42</td><td>5.22</td></tr>
<tr><td>2017</td><td>5.45</td><td>8.54</td><td>4.62</td><td>7.23</td><td>4.6</td><td>7.22</td></tr>
<tr><td>2018</td><td>-0.63</td><td>-3.15</td><td>-0.53</td><td>-2.67</td><td>-1.2</td><td>-3.34</td></tr>
<tr><td>2019</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Source: Danish FSA;

The Danish FSA started reporting the returns on investments for private pension funds as a breakdown between *hybrid defined-contribution (DC) with guarantee* and *defined-contribution (DC) with no guarantee* pension schemes as of 2016. Therefore, the average rate of return for 2007-2019 cannot be computed.

The key figures shown are the return on investment net of costs as a percentage of the market value of investment assets.

Conclusion

The Danish pension system is characterized by a high degree of funding and clear roles for the tax-based public pensions of Pillar I and the private funded pensions.

In the next decades, the benefits from occupational pension schemes will be growing and will thereby contribute to a high replacement ratio and, at the same time, improve public finances through higher tax revenue and lower public pension expenses. The replacement ratio is at an acceptable level for almost all parts of the population. A relatively small fraction of the working population with no or little private pension will face a problem of relative poverty when they retire. Most of the people retiring today (57 percent) has pensions from pillar II and III. As a result, the number of poor, elderly people has fallen sharply over the past 10 years (with more than 60 percent).

The problem therefor only affect a small number of people but is all the more severe for the few. Most likely, a political solution of some sort will have to be found within the next years. The statutory retirement age is gradually raised in the forthcoming years in order to keep elderly people in the work force as life expectancy increase. Presently this raise political discussions on how to give elderly people below retirement age who are no longer able to work a right to earlier retirement.

The pension system's high degree of funding makes future generations of pensioners less vulnerable to political risk. Their income from Pillar II and Pillar III does not depend directly on political decisions. But, at the same time, they become more vulnerable to market risk. A sudden increase in inflation rates will most likely result in great losses for pension savers. An increase in interest rates will lead to lower market value of bonds owned by future pensioners. So, too much volatility of the economic environment has become a greater risk for the retired generations.

The charges of private pensions have been decreasing for a long period of time. This is due to the growth of private pension schemes and efforts in the market to obtain economies of scales. The pluralism of the market with suppliers organized in many different ways is said to put pressure for higher efficiency.

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