DANMARKS NATIONALBANK

ANALYSIS | Insurance and pension
3 September 2025 | No. 18

The road to more risky assets in the Danish pension sector

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42 pages

The European Commission has focused on how pension systems can supply long-term capital for European companies and pointed to the Danish pension system as a good example. Over the past four decades, Denmark has developed a pension system that is largely savings-based. A substantial proportion of investments have been allocated to Danish, European, and American companies, as well as bonds. Risks have also shifted from pension companies to pension savers as unguaranteed pension schemes have become more prevalent. This has supported the solvency of the pension companies and increased the expected returns on investments.

The savings-based pension system has increased the investment capacity in Denmark

Savings in the pension system amounted to 198 per cent of GDP at the end of 2024. The pension system is the result of many years of development, not least during the last nearly 40 years of extensive reforms. The development of the savings-based and broadly mandatory pension system has increased pension wealth and thereby the investment capacity in Denmark. However, this development is a long-term process, and the Danish system is still maturing.

Unguaranteed pension schemes are invested with higher risk and greater geographical scope

The shift from guaranteed to non-guaranteed pension schemes has enabled an increase in investment risk. For example, investments in listed equities have increased and investments in alternatives are also higher in unguaranteed pension schemes. The transition away from guarantees has also increased investments outside Europe, especially due to equity investments in the US.

The transition away from guaranteed products has increased expected returns but shifted risks to the savers

The transition away from guarantees means that pension savers assume more of the risks related to market fluctuations and longevity. Increased risk-taking in investments leads to higher expected returns, but also to greater uncertainty in the payout phase. However, this risk is often mitigated by collective reserves, smoothing mechanisms and lifecycle adjustments.

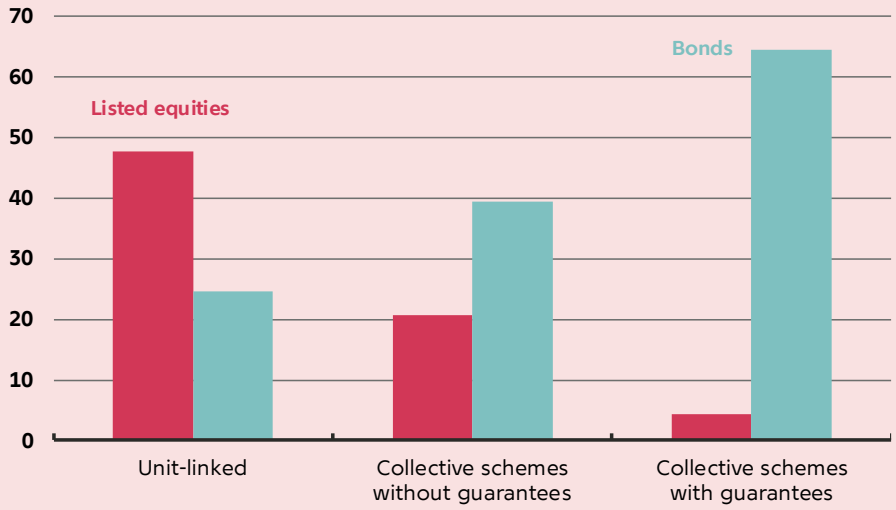
Why is this important?

The Danish pension system is important for ensuring that Denmark has a robust economy, and in an international context, it stands out positively. The structure of the pension system is the result of many years of development and reforms that may serve as inspiration for other countries. There is currently a debate within the EU about competitiveness and the need to channel savings into the economy. The Danish pension system is an example of a savings-based pension system in which investment risk and higher expected returns have gradually replaced pension schemes with guarantees over the years. This transition away from guarantees has led to higher risk tolerance on the capital being channelled into the economy through more investments in listed equities, infrastructure and private equity.

Main chart:

Pension funds in occupational pension schemes hold larger amounts of risky assets if benefits are not guaranteed

Share of total investments, per cent



Note: *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or with no guarantees at all. Collective schemes may also be referred to as average rate products. Pension schemes with guarantees may also be referred to as protected pension schemes. Similarly, pension schemes without guarantees may also be referred to as unprotected pension schemes. Derivatives are not included. Listed equities and bonds do not add up to 100 per cent of the total investments from Danish pension investments. Parts of Danish pension funds are also invested as alternative investments and as other investments. Data is end 2024.

Source: Own calculations based on Solvency II Quarterly Reporting Template and Danmarks Nationalbank.

Keywords

Insurance and pension | Financial markets | Labour market | Denmark and abroad | Direct investments | Financial regulation | Financial sector | History | Investments | Public finances | Savings

01
Introduction

A savings-based pension system has a number of advantages, including serving as a source of long-term investments.

The Danish pension system consists of public, tax-funded pension benefits and savings-based elements. Savings-based elements represent an increasing share, and the pension system is accordingly becoming increasingly savings-based. The current design of the pension system is partly the result of efforts and decisions by politicians and representatives of employers and employees, making Danish pension savings the largest among OECD countries measured relative to GDP. The pension system is still maturing after extensive reforms over the past four decades, meaning pension savings are expected to increase further.

A savings-based pension system has a number of advantages, including serving as a source of long-term investments. Occupational pension schemes in Denmark are concrete examples of the implementation of a savings-based system that can support the development of financial markets.[1] In many EU countries, savings-based pension systems are significantly less important than in Denmark, and the majority of pension benefits for most households in the EU consist of public, tax-funded pension systems, see Draghi (2024). The Danish pension system has attracted international attention for many years as one of the best in the world, see Mercer CFA Institute (2024), and the Danish occupational pensions may have contributed to strengthening Denmark's public finances, see The Danish Economic Councils (2025).[2] The European Commission's Competitiveness Compass 2025 calls for work on the potential of private and occupational pension schemes in the EU. The aim of this work is to help EU citizens plan for their retirement and channel their savings into the economy, see European Commission (2025).

This analysis focuses on the savings element of the Danish pension system. The aim is to shed light on the Danish experiences on how savings are invested in the financial markets – not least depending on whether pension schemes have guarantees attached or whether the investments can be made more freely. Traditionally, Danish pension savings were typically placed in pension schemes *with* guarantees[3]. Such products ensure predictability in the savings phase and security for retirement. However, the emphasis on greater flexibility in pensions and generally falling interest rates meant that *unguaranteed* pension schemes and especially unit-linked pension schemes are now the most common pension products in Denmark. The transition away from guarantees has led to increased risk-taking in pension company investments, as unguaranteed pension schemes are generally invested in more equities or alternative investments rather than bonds.

In unguaranteed pension schemes, it is typically the pension saver who assumes the risks related to market fluctuations and longevity, and therefore there are also greater risks for savers regarding their pension benefits. However, those risks are mitigated by reducing the investment risk as the payout phase approaches and by smoothing the investment returns during the payout phase, thereby limiting fluctuations in pension payout.

[1] For example, countries with a large life insurance and pension sector typically also have a larger bond market, see Du et al. (2023).
[2] Every year, the Danish Economic Councils assesses fiscal sustainability in Denmark. At the last assessment, the council's long-term projection up to the year 2100 showed a surplus on the structural public balance in all projection years. Among other things, the Danish Economic Councils notes that occupational pensions have strengthened public finances, see The Danish Economic Councils (2025).
[3] Pension schemes with guarantees may also be referred to as pension schemes with protection.

As investments are often managed by pension companies, trust in the system is important. An essential element of the Danish pension system is that pension assets are invested according to principles of transparency and prudence, ensuring that the interests of the pension savers are prioritised. It is also common in sector-specific pension funds in Denmark that pension savers are represented in the boards of the pension companies via trade union representatives.

Content of the analysis

Chapter 2 of this analysis describes the development and structure of the savings-based element of the Danish pension system. The chapter is based on the literature that researchers, authorities and the pension industry have contributed to over the years.

Chapter 3 describes the transition away from guarantees as an important part of the development of the Danish pension system. Pension schemes with guarantees have been replaced by unit-linked pension schemes as the most prevalent type of pension scheme, and the chapter describes the consequences for the pension company's investment options.

Chapter 4 analyses pension companies' investments in three main types of pension schemes: Individual unit-linked pension schemes, collective schemes without guarantees and collective schemes with guarantees. The chapter shows how the type of pension scheme affects risk-taking in investments and explores which assets Danish pension schemes are invested in.

Finally, chapter 5 describes the impact of the different types of pension schemes on pension benefits and compares pension schemes in relation to the returns achieved over the past decade and the risks related to the payout phases of the different pension schemes.

02

The development of the savings-based pension system in Denmark

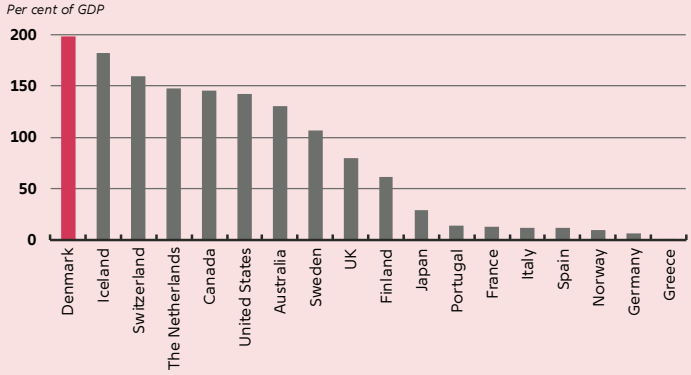
Danish pension savings amount to approximately 198 per cent of GDP and are the largest pension savings among OECD countries measured relative to GDP, see chart 1. Several other European countries, such as Iceland, Switzerland, the Netherlands and Sweden, also have pension savings of more than 100 per cent of GDP.

When describing the Danish pension system, it is useful to distinguish between three pillars, see chart 2.[4] The first pillar consists of public pensions and ATP[5] and is often referred to as a source of basic income security during retirement. This pillar aims to ensure basic financial security for everyone throughout their retirement years, providing both a redistributive and poverty-reducing foundation. The pensions are lifelong and guaranteed to ensure stable pensions

CHART 1

Danish pension assets represent the largest pension savings among OECD countries measured in relation to GDP

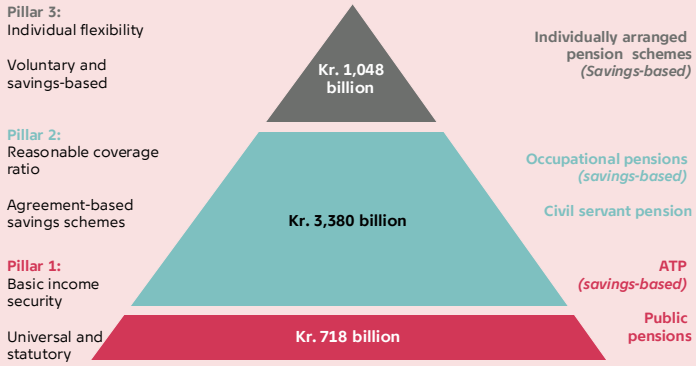
Assets in savings-based pension schemes in relation to GDP



Note: Data indicates the assets of pension providers in the respective countries, excluding public pension funds. Data is from the end of 2023 for a sample of different OECD countries around the world.
Source: OECD (2024).

CHART 2

The Danish pension system can be divided into three pillars with different purposes



Note: The numbers indicate values at the end of 2024, see chart 4. The vast majority of occupational pension schemes and just under half of the funds in individually arranged pension schemes are placed in pension companies. The remaining funds are placed in banks.
Source: ATP, ADAM's data bank, Statistics Denmark and own calculations.

[4] See World Bank (1994). The World Bank introduced this framework in 1994 and in 2008 it was expanded to 5 pillars. The expanded approach introduces a zero pillar, which includes housing benefit, heating supplements and other benefits, and a fourth pillar, which includes capital income, rental value of own home, business income and other assets such as housing wealth, see ATP (2024). The zero and fourth pillars are not a topic of this analysis.
[5] The Danish Labour Market Supplementary Pension Fund, ATP, is a self-governing institution, established by the Danish Parliament by law in 1964. Contributions to ATP are stipulated by law as a nominal, annual amount. The contribution is independent of income but depends on working hours. Pensions from ATP are life-long annuities.

despite fluctuations in life expectancy and market conditions. ATP is the savings-based element of the first pillar, while public pensions consist of tax-funded pensions in a pay-as-you-go system.[6] Savings-based funds in this pillar amounted to approximately kr. 700 billion at the end of 2024, corresponding to 14 per cent of total pension savings in Denmark, and the funds are placed in a collective pension scheme with guarantees managed by ATP.

The second pillar consists of pension schemes that create a link between pre- and post-retirement income. In Denmark, this pillar consists of the occupational pension schemes, which are savings-based and practically mandatory,[7] and the civil servant pension. Historically, civil servant pensions have been a key element in creating this balance for a wide range of employees, especially in the public sector, but civil servant pensions are currently being phased out. Savings-based funds in occupational pension schemes amounted to approximately kr. 3,400 billion at the end of 2024, corresponding to 66 per cent of total pension savings in Denmark. As the majority of the savings-based funds in Danish pensions are linked to occupational pension schemes, they are the primary focus of this analysis. It is a characteristic of the Danish occupational pension schemes that the majority of pension companies manage savings and insurance elements for several employers at the same time. This means that Danish pension savings are concentrated in 21 pension companies,[8] which in turn are relatively large.[9] There are also pension companies where the pension savers consist of one or more specific and larger professional groups, such as nurses or teachers. These pension companies exclusively manage the savings for their respective groups.

The third and final pillar includes the individually arranged pension or life insurance schemes that people may have in addition to the occupational pension scheme. It typically consists of a savings-based element, which can be placed either in a pension company or a bank, and an insurance-based element, which is offered exclusively by pension companies. The individually arranged pension is used by the self-employed and employees who do not have an existing occupational pension scheme agreement. It is also used to meet the need for individual adaptation of pension savings plans. By the end of 2024, approximately kr. 1,000 billion had been accumulated in this pillar, corresponding to 20 per cent of total pension savings in Denmark.

Many Danes have significant pension wealth

The Danish pension system has undergone extensive changes over the past four decades, see box 1. With the Joint Declaration of 1987 between the government and representatives of employers and employees,[10] and the

[6] Public pensions consist of state pension and supplementary public pension benefits such as the elderly cheque, housing benefits and heating supplements. The public pensions are financed by the state through current tax revenues on a pay-as-you-go basis. This means that the cost of public pension payout is financed at the time of payment.
[7] The occupational pension scheme is what is known as quasi-mandatory. This means that the proportion of employees' income paid into the occupational pension scheme is determined in the collective bargaining agreement between employer and employee. Thus, the individual employee does not decide how much of their income is paid into the occupational pension scheme.
[8] The 21 pension companies include the companies described in Appendix A along with ISP Pension and AP Pension.
[9] In several other countries, it is more common for so-called company pension funds, offered by employers to their employees, to manage pension savings. This means that the pension savings for a given company are managed within that company. Company pension funds therefore also tend to be smaller.
[10] The Joint Decleration of 1987 was a triparty agreement between the government and representatives of employers and employees.

BOX 1

Savings-based occupational pensions in Denmark were introduced in 1987 and have been gradually expanded since

Savings-based pensions in Denmark date back to the establishment of the first pension fund in the private sector, "Værkstedsfunktionærer i Jernet", in 1900. This was followed in 1917 and 1919 by the life and pension insurance companies known today as PFA Pension and AP Pension. ATP was established by law in 1964.

The Joint Declaration of 1987 paved the way for occupational pension schemes and increasing contributions to pension savings
By 1987, a few pension companies had been established over the years, and with the Joint Declaration of 1987 between the government and the labour market representatives, quasi-mandatory occupational pension schemes were established for the groups of working individuals who did not have occupational pension schemes to supplement the state pension and ATP. In the collective bargaining agreements of 1989 and 1991, it was decided to expand these occupational pension schemes, with around 400,000 more employees receiving an occupational pension scheme in the collective bargaining agreements in 1991. The creation of occupational pension schemes meant that pension contributions increased.

A desire for greater flexibility in pensions and generally declining interest rates put pressure on guaranteed pension products
Until the turn of the millennium, the majority of occupational pension schemes were based on guaranteed pension benefits. The broad coverage of occupational pension schemes coincided with an increased focus on the individual's more personal wishes, and awareness of their own pension savings increased with the establishment of the *Pensionsinfo*[1] portal in 1999. In the early 2000s, there was a transition away from guaranteed pension schemes towards, for example, unit-linked pension schemes. Initiatives in 2001 and 2007 by the Danish Financial Supervisory Authority focusing on investment risks and a risk-based approach to pension company solvency increased the incentives to move away from guaranteed pension schemes

Total contributions to the savings-based pension system reached 12 per cent in 2005
The trend since the late 1980s was a significant expansion of pension savings, which meant that total pension contributions increased from 6 per cent in 1987 to around 12 per cent in 2005. Since then, total pension contributions have stabilised at around 11-12 per cent of total wages.

Longer life expectancy has led to higher retirement ages since the 2006 Welfare Agreement
Since the 2006 Welfare Agreement was introduced, the retirement age has increased several times. Before the 2006 Welfare Agreement, state pension could be received from the age of 65. The current retirement age is 67 and is set to rise to 70 in 2040.

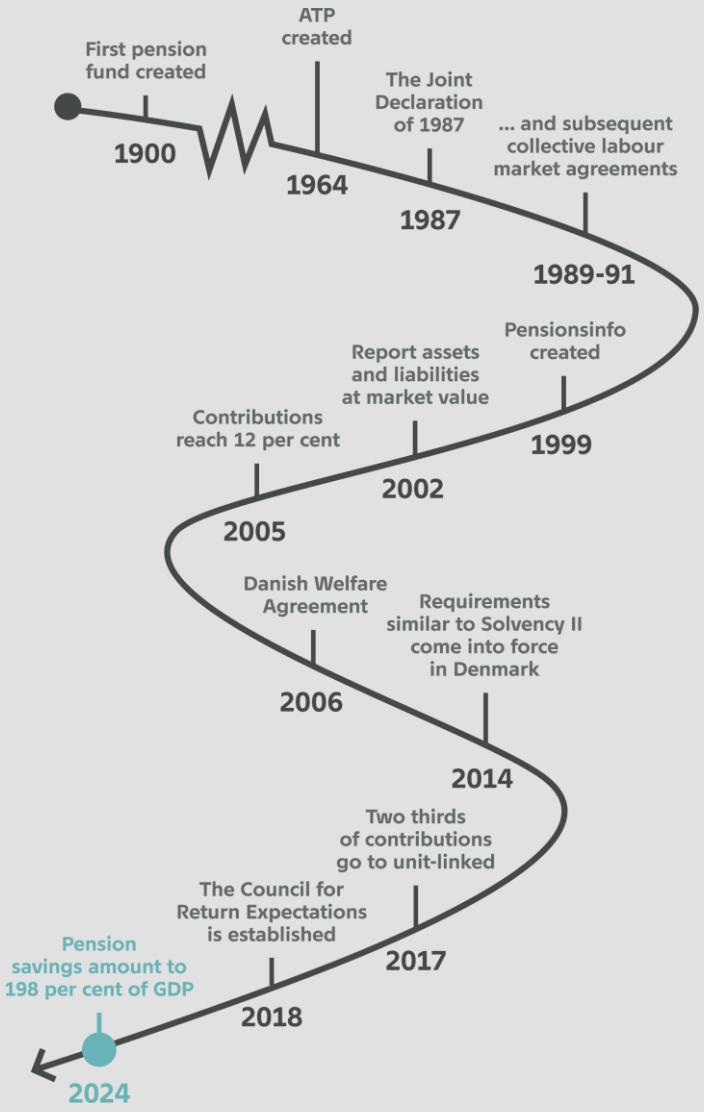
Voluntary conversions accelerated the transition away from guaranteed schemes, and in 2017, two-thirds of total contributions went to unit-linked pension schemes
A number of pension companies ran conversion campaigns, offering members the opportunity to voluntarily convert their pension savings from guaranteed pension schemes to non-guaranteed schemes. The main argument was that the guarantees forced pension companies to invest very conservatively, while the new products without guarantees allowed higher allocations to risky assets with higher expected returns. The conversions were primarily done to move pension assets into unit-linked pension schemes or collective pension schemes without guarantees, and in 2017, two-thirds of total pension contributions went to unit-linked pension schemes. More flexibility in pensions was also supported by the political system.

Pension savings currently stand at approximately 198 per cent of GDP, and the pension sector is the world's largest in relation to GDP
By the end of 2024, total Danish pension assets amounted to approximately 198 per cent of GDP. The pension system is fully matured when those who retire and are covered by occupational pensions have saved throughout their entire working lives. This is expected to be achieved around 2050 for the first generation of retirees, and in 2080 for all retirees, see Jensen and Hansen (2022).

[1] *Pensionsinfo* is a website where savers can get a complete overview of their pension savings and total pension benefits from pillars 1, 2 and 3.

CHART

The Danish pension system has been developed over many years



Source: ATP, OECD, Council for Return Expectations, Danmarks Nationalbank, ADAM's data bank.

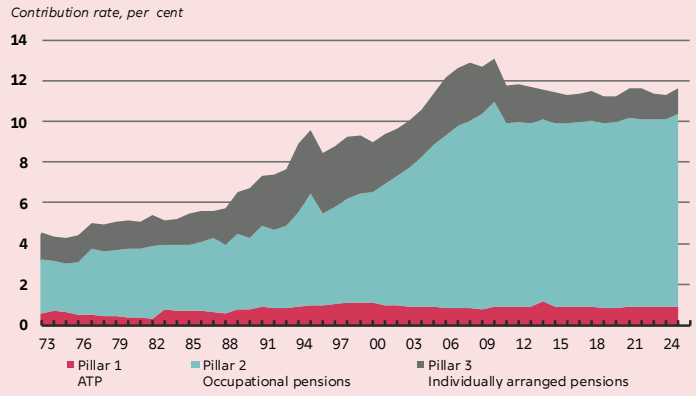
subsequent collective bargaining agreements, occupational pension schemes were widely introduced. The share of the working-age population contributing to occupational and individually arranged pension schemes increased to 70 per cent in 2022, see ATP (2024). The result of the reforms was that pension contributions increased from 6 per cent of wages in 1987 to around 12 per cent in 2005, see chart 3. Since then, pension contributions have decreased slightly and have now stabilised at around 11-12 per cent of total wage income in Denmark. Most of this growth is due to contributions into occupational pension schemes, which increased from 3 per cent of wages in 1987 to around 8 per cent in 2005. Hence, following the Joint Declaration of 1987, it took about twenty years for the level of pension contributions to stabilise at a new and higher level.

The total contribution rate to pension savings in all three pillars has today stabilised at around 11-12 per cent. The higher pension contributions have been the driving force behind the accumulation of pension wealth. By the end of 1987, Danish pension wealth totalled approximately kr. 400 billion, while by the end of 2024 they amounted to approximately kr. 5,000 billion. Occupational pension schemes have experienced the greatest growth, see chart 4. However, it's not only higher contributions that have contributed to the growth in pension wealth.

CHART 3

Pension contributions have increased significantly since the late 1980s

Total pension contributions in relation to total wages

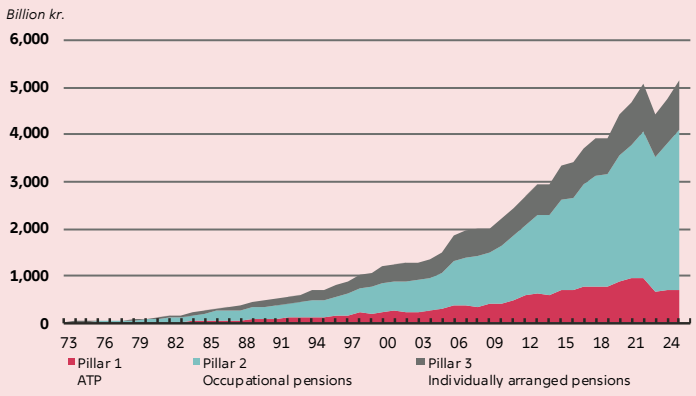


Note: Contributions to pension, annual frequency. The contribution rate is calculated as total contributions in relation to total wages. Adjustments have been made for the transition from the capital pension to the retirement savings scheme from 2013.
Source: ADAM's data bank, Statistics Denmark and own calculations.

CHART 4

Pension wealth in Denmark has increased to more than kr. 5,000 billion, especially through occupational pensions

Total pension values in Denmark



Note: Pension wealth in annual prices, annual frequency. Pension wealth indicates total pension liabilities. Individually arranged pensions are managed by banks or pension companies.
Source: ADAM's data bank, Statistics Denmark and own calculations.

Positive returns and value adjustments have also contributed significantly. Returns and value adjustments have contributed around 70 per cent of the accumulated growth in pension wealth since 2015, while net contributions have contributed around 30 per cent. The development thus reflects that the

management of Danish pension wealth has resulted in significant returns and increases in value over the past nearly 10 years, see also chapter 5.[11]

In some years, total pension wealth has decreased due to negative market developments. The effect of negative market developments was most evident in 2022, when rising interest rates and falling equity prices reduced the value of many of the assets that pension companies invest in. However, the negative returns from 2022 have since been offset through positive returns in 2023 and 2024 and new contributions. Thus, by the end of 2024, pension assets were at their highest level ever.

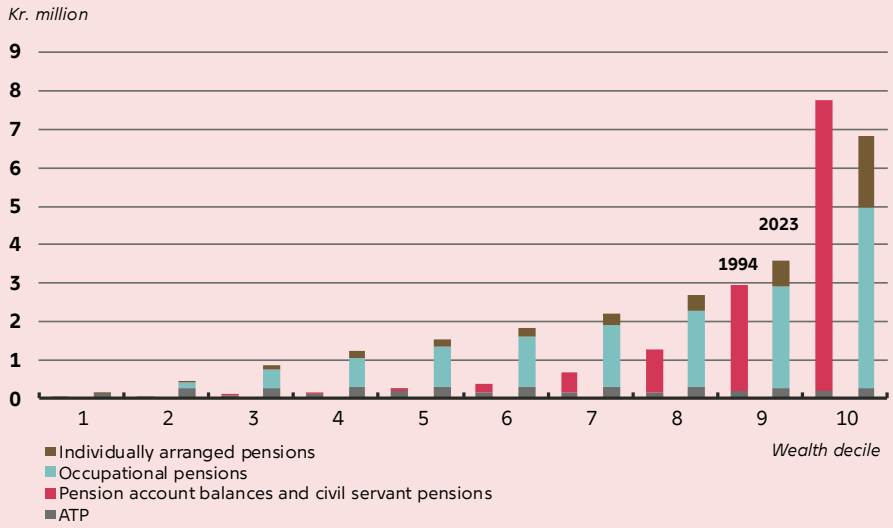
Pension wealth has become more evenly distributed over the past almost 30 years

The higher contribution rates for a larger share of the labour market have meant that pension wealth in Denmark was more evenly distributed across wealth deciles in 2023 compared to 1994. Pension wealth has thus increased, especially for people with the lowest nominal wealth. For a 60-year-old in 1994, pensions consisted of ATP, pension account balances and the value of civil servant pensions. The greater a person's wealth, the smaller the share of ATP in their total pension wealth, see chart 5. However, for a 60-year-old in 2023, pension wealth is structured differently. ATP still serves a similar purpose, but

CHART 5

Pension wealth has increased from 1994 to 2023 for those who are not among the wealthiest

Average pension wealth for 60-year-olds in 1994 and 2023



Note: Amounts in kr. million, adjusted to 2023 wage levels. The decile classification is based on the wealth of 60-year-olds, where people without wealth are also included. In the chart, *the civil servant pension* is made up of "fictitious" civil servant savings corresponding to the value needed to honour civil servant entitlement earned. The figures are included in ATP's publication *Pension – key figures (in Danish only)*.
Source: Statistics Denmark and ATP.

[11] How much of the value growth is due to net contributions relative to returns and value adjustments depends on several factors, including the maturity of the pension system. A pension system in development will have higher notional contributions than pension benefits, contributing to positive growth in the pension assets, while a fully matured pension system will primarily be driven by returns.

instead of pension account balances and civil servant pensions, pension wealth is made up of occupational pension schemes and individually arranged pensions. The development of occupational pension schemes has boosted pension wealth in most wealth groups. The higher pension wealth is especially evident for people who are among those with lower or average total wealth. However, for people with total wealth in the top 10 per cent, the average pension wealth is reduced, see ATP (2024).

Development of a savings-based pension system takes many years

Since defined contribution pensions depend on continuous contributions throughout an individual's working life, developing a defined contribution pension system is a process that takes many years.

Retiree income can be measured by the so-called net replacement rate, which indicates the ratio of the after-tax income of retirees compared to the after-tax income before retirement. In 2022, the average net replacement rate in Denmark was approximately 77 per cent, see OECD (no year, a).[12] This figure is comparable to many other countries, albeit higher than the OECD average. There is generally a pattern whereby the net replacement rate declines as income rises. In 2022, 68-year-olds in the bottom income decile had a net replacement rate of 109 per cent, while a 68-year-old in the top income decile had a net replacement rate of 52 per cent, see ATP (2024).[13] For individuals with a relatively low income level, the net replacement rate in Denmark is also high compared to other countries, see OECD (2023). The net replacement rate in Denmark also means that Denmark is among the countries with the lowest proportion of the population over the age of 66 living in poverty according to the definition by OECD, see OECD (no year, b).[14]

The expansion of occupational pension schemes had a material impact on the importance of the different pillars in relation to pension benefits. Total pension benefits have increased from 6 per cent of GDP in 1976 to 11 per cent of GDP by 2024, see chart 6. In Denmark, however, tax-financed payments to the state pension have been relatively stable at around 4-5 per cent of GDP. The development of savings-based pensions has thus been the primary source of higher pension benefits in Denmark. By the end of 2024, occupational pension scheme benefits amounted to around 2.5 per cent of GDP and individually arranged pension savings amounted to around 1 per cent of GDP.

The savings-based pension system is not yet fully matured

At the end of the 1970s, the state pension and ATP accounted for approximately 73 per cent of total pension benefits, while the civil servant pensions accounted for approximately 17 per cent, see chart 7. By the end of 2024, this breakdown had changed, with state pensions and ATP accounting for 57 per cent of total pension benefits, civil servant pensions accounting for 10 per cent, while occupational pension schemes and individually arranged pensions accounted for 23 per cent and 9 per cent respectively.

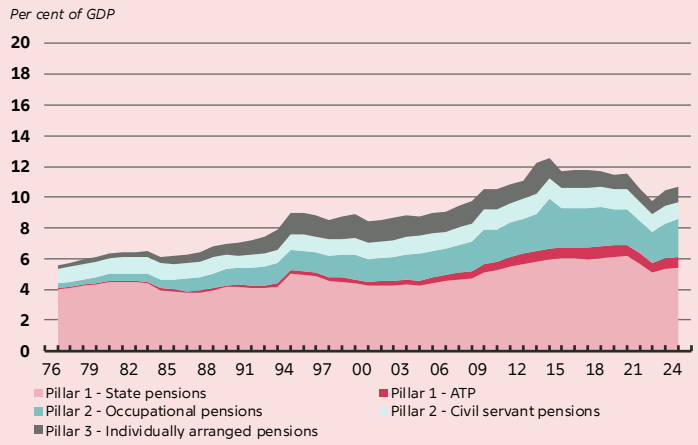
Since defined contribution pensions depend on continuous contributions throughout an individual's working life, developing a defined contribution pension system is a process that takes many years.

[12] The net pension replacement rate from the OECD is defined as pension income after tax and social benefits compared to income after tax and social benefits before retirement.
[13] The net replacement rate from ATP is defined as a person's net income (after tax) as a 68-year-old retiree compared to the average net income at 57-59 years.
[14] Living in poverty is defined here as having an income of less than 50 per cent of the median household disposable income.

CHART 6

Occupational pension scheme benefits have increased the total pension benefits relative to GDP

Pension benefits by type of pension scheme

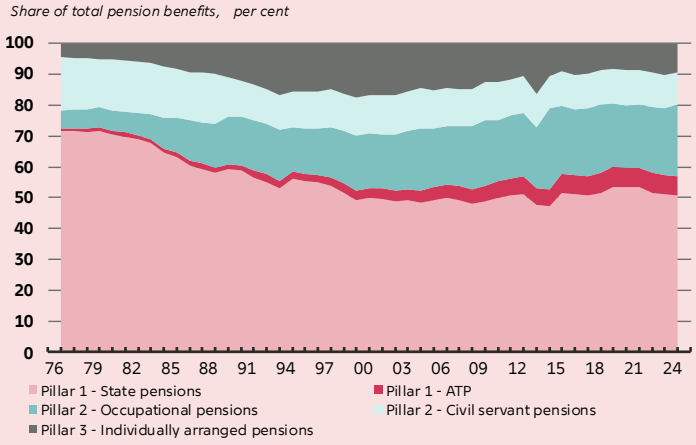


Note: Pension benefits in relation to GDP, annual frequency. Adjustments have been made for the transition from the capital pension to the retirement savings scheme from 2013.
Source: ADAM's data bank, Statistics Denmark and own calculations.

CHART 7

The state pension accounts for a smaller share of total pension benefits today compared to earlier

Pension benefits by type of pension scheme



Note: Pension benefits, annual frequency. Adjustments have been made for the transition from the capital pension to the retirement savings scheme from 2013.
Source: ADAM's data bank, Statistics Denmark and own calculations.

The savings-based pension system is not yet fully matured, which means that people who are currently in the payout phase have not saved for occupational pension schemes throughout their entire working lives. As occupational pension schemes mature by 2080, savings-based pension schemes are expected to gradually become more important for the pension benefits. In Denmark, it will take almost 100 years from the Joint Declaration of 1987 until the fully mature system is expected to be in place by 2080.

In the fully matured system, pension savings[15] are expected to account for approximately 62 per cent of total pension benefits, while the tax-funded state pension is expected to contribute approximately 37 per cent of total pension benefits in 2080. Civil servant pensions are expected to account for the remaining 1 per cent of total pension benefits in 2080.

[15] The projection is based on the MAKRO model from the Ministry of Finance. In this projection, pension savings consist of occupational pension schemes, individually arranged pension schemes and ATP.

03
Transition away from guaranteed pension schemes

Until around the turn of the millennium, the majority of occupational pension schemes were based on guarantees. These pension schemes were designed to give pension savers predictability in the savings phase and security and stability in the payout phase. The prevalence and development of occupational pensions led to greater flexibility in pensions and occurred at a time when interest rates were generally falling. Both created a transition away from pension schemes with guarantees, see Ministry of Business and Economic Affairs, et al. (2003) and the Danish Financial Supervisory Authority (2017).

When a pension company has a plan with guaranteed benefits, it means that the company has an obligation far into the future, based on the guaranteed interest rate level. This liability is sensitive to changes in interest rates and life expectancy of pension savers. Changes in interest rates mean that when long-term interest rates fall, as has been the general trend for long periods since the 1980s, the market value of the liabilities increases. For example, if the pension saver has been guaranteed pension benefits based on an annual nominal return of 4 per cent, but the market rate has fallen to 2 per cent, the agreement has a relatively high value for the pension saver and a relatively low value for the pension company. Similarly, changes in the life expectancy of pension savers mean that the value of the liabilities increases if the pension savers are expected to live longer and thus receive pension benefits for more years.

With guarantees, the pension company's liabilities are thus sensitive to the development of long-term interest rates and life expectancy. These sensitivities incentivise companies with guaranteed schemes to manage investments so that asset sensitivities match those of the liabilities. The incentive arises because the pension company may face solvency issues if the value of its liabilities exceeds the value of its assets.[16] Several asset groups have this characteristic, such as long-term bonds and real estate, which also make up a relatively large proportion of the total investments from pension schemes with guarantees, see chapter 4.

Falling interest rates and flexibility created a transition away from guarantees

Several factors meant that pension schemes with guarantees became less attractive after the turn of the millennium. These factors include a general decline in interest rates and increasing life expectancies, a more risk-based approach in the regulation of pension companies and a desire from pension savers for more individualisation of their pension scheme.

[16] Pension companies are subject to a solvency requirement, which must ensure that they are financially robust based on any guarantees the company has given amongst other things.

Falling interest rates and a more risk-based approach to regulation meant that pension schemes with guarantees came under pressure

The average return, which was the basis for the size of the guaranteed benefits, and which had been promised to the pension savers, gradually became significantly higher than market rates as market rates fell. To maintain guaranteed returns in existing contracts, companies increasingly concentrated their investments in, for example, bonds. At the same time, the general interest rate level reduced the level of guaranteed returns on new contracts. The guaranteed returns for new contracts are based on an interest rate that has historically been as high as 4.5 per cent per year, but the guaranteed interest rate has gradually decreased over the past decades to 0.5 per cent in 2011 and around -1 per cent in the early 2020s.

Regulation also had an impact on pension schemes with guarantees. Firstly, changes in accounting rules from 1 January 2002 meant that pension companies had to report assets and liabilities based on market value in their accounts. This meant that the financial statements better reflected the financial risks.[17] Secondly, the Danish Financial Supervisory Authority introduced ongoing measures focusing on investment risks, including the introduction of the so-called traffic lights[18] in 2001 and individual solvency requirements in 2007. One of the aims of this was to promote a risk-based approach. Thirdly, the Solvency II Directive adopted in 2009 increased the capital requirements for guaranteed schemes, see Jarner, Munk and Steffensen (2022).[19] However, the date of entry into force of the Solvency II Directive had to be postponed several times in light of the financial crisis, and the directive entered into force in the EU on 1 January 2016. But in Denmark, rules pointing towards Solvency II were introduced from 1 January 2014.

A desire for more flexibility in pension investments led to greater flexibility in pension scheme selection

Around the turn of the millennium, there was increasing attention to the potential influence of individual pension savers on their pension schemes, see Jarner, Munk and Steffensen (2022). More flexibility in pensions was also supported by the political system, see Ministry of Economic and Business Affairs, et al. (2003)[20], which over time led to greater flexibility in terms of the type of pension scheme that individual pension savers could choose. In 2012, the Minister of Business and Growth also reached an agreement with the pension industry that companies should work to reduce the number of pension schemes with guarantees.

Overall, there has been a transition away from pension schemes with guarantees over a number of years. Instead, many savers and pension companies chose to invest their regular pension contributions in unit-linked pension schemes where the pension saver typically chooses a risk profile (e.g. “low”, “medium” or “high”). However, there were also pension companies that chose to continue collective investments in collective pension schemes but removed the guarantees or adjusted them to make them conditional on, for example, the interest rate level or life expectancy. See box 2 for a description of the different types of savings.

Falling interest rates and a more risk-based approach to regulation meant that pension schemes with guarantees came under pressure.

[17] From 1 January 2002, pension companies could switch to financial statements based on market values, and this became mandatory from 1 January 2003. See Danmarks Nationalbank (2003).
[18] The Danish Financial Supervisory Authority's traffic light system deals with stress tests of companies' financial conditions, see box 2 in Danmarks Nationalbank (2010).
[19] The Solvency II Framework Directive was adopted by the EU in April 2009. The regulatory framework meant that the solvency capital requirement went from being rule-based to risk-based. In the previous directives in force, the capital requirement reflected the volume of business based on liabilities, while the capital requirement under Solvency II reflects the risks companies face. See Danmarks Nationalbank (2010).
[20] The report *Større valgfrihed i pensionsopsparingen (Greater freedom of choice in pension savings, in Danish only)* was produced as a result of the work of a commission. The report argued in favour of greater individual choice in pension schemes compared to traditional collective schemes where pension savers had no influence on investments and risk levels.

Pension schemes that were not based on guarantees could accommodate a riskier and more individualised investment strategy to varying degrees, which in the long term had a higher expected return compared to the guaranteed pension schemes.

BOX 2

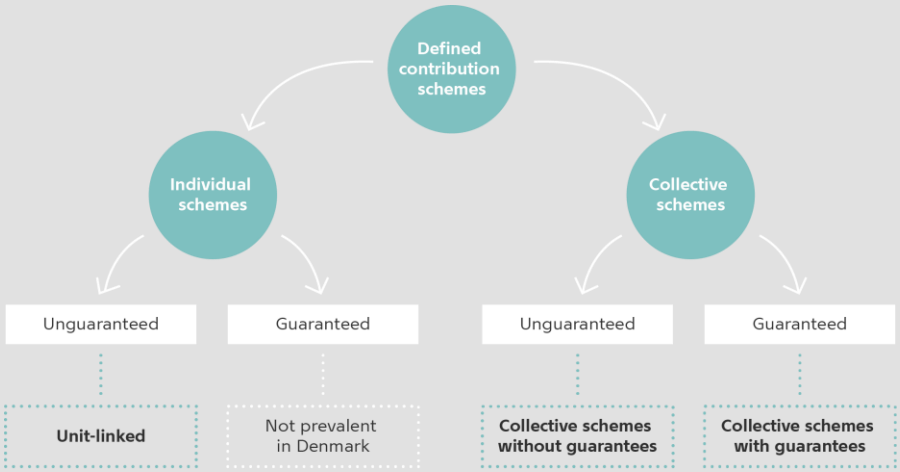
Types of pension schemes in Danish occupational pensions

Occupational pension schemes in Denmark are predominantly based on agreement on how much is paid into the pension scheme on an ongoing basis. This is also known as *defined contribution products*. Internationally, it is more common for pension schemes to be based on an agreement on how the actual benefits are related to the number of working years and salary levels, for example. These are called *defined benefit products*. In Denmark, defined benefit schemes have historically been important in the form of e.g. civil servant pension schemes.[1] In an international context, defined contribution schemes are typically perceived as unguaranteed, meaning that the pension saver assumes the investment and longevity risk. However, defined contribution schemes can include guarantees, as is the case in the traditional guaranteed schemes in Denmark.

A distinction is made in Denmark between collective pension schemes and individual unit-linked pension schemes. Collective pension schemes are invested collectively and can therefore also be referred to as collective defined contribution schemes, while savers in unit-linked pension schemes follow an individual investment strategy, see chart. Collective schemes may also be referred to as average rate products.

Chart

Defined contribution schemes can be categorised according to whether they are collective or individual and whether they are with or without guarantees



Note: Individual guaranteed schemes also exist in Denmark. They are known as individual unit-linked pension schemes with protection but are very limited.

Collective pension schemes
In collective pension schemes, investments are made collectively and can have guarantees, conditional guarantees or no guarantees at all. Pension schemes with guarantees may also be referred to as protected pension schemes. Similarly, pension schemes without guarantees may also be referred to as unprotected pension schemes. The savers in a given scheme have individual pension savings accounts but have no influence on the asset allocation, which is identical for everyone in the scheme, regardless of age, and is decided by the pension company on behalf of the savers. All pension savers in a given scheme are credited with the same return for a given year, known as the credited interest rate. The credited interest rate is determined based on the development of the pension company's investment return and the size of the reserves from previous years' returns that have not yet been allocated to pension savers as bonuses.

Continues ...

... continued

The credited interest rate can thus deviate from the investment return in the individual year, thereby levelling out the return over time. This supports stable and predictable development during the savings and payout phases. In the vast majority of cases, the schemes are entitled to bonus potentials, which are awarded over time if the realised return over time exceeds the projected return. If an investment return exceeding the guaranteed return is realised, it must be allocated to the pension savers, as there must be no significant redistribution across savers and generations.

Guaranteed collective defined contribution schemes
The traditional pension product in Danish occupational pension schemes had binding benefit guarantees based on a nominal average return for the savings and payout periods. The pension company bears the risk of the return on savings and the longevity risk.

Unguaranteed collective defined contribution schemes
A number of pension companies have collective pension schemes that follow the same principle of collective investments, balancing the allocated return over time and expected pension payout related to an expected average return. However, unlike binding guarantees, they are a form of letter of intent, as the relationship of benefits to expected returns are conditional guarantees that can be deviated from, for example due to changes in life expectancy and interest rates, or they are explicitly non-guaranteed. These schemes are therefore ultimately unguaranteed, and benefits may be lower than originally assumed, which in turn also gives companies greater investment freedom and does not affect their solvency to the same extent.

Individual unit-linked pension schemes
Individual unit-linked pension schemes are characterised by the fact that the annual return directly follows the investments made. As a general rule, there is no guarantee attached. Unit-linked pension schemes may also be referred to as market rate pension schemes, and savings, returns and benefits are individualised. Investments can be made more freely in unit-linked products than in guaranteed products. With a better opportunity for higher risk in investments comes a higher expected return on savings over time. In unit-linked pension schemes, the pension saver can typically choose a risk profile, such as "low", "medium" or "high", and can also change the risk profile during the savings period. Most companies also offer lifecycle products where the risk is reduced as retirement age approaches, see chapter 5.

[1] Civil servant pension schemes in Denmark are primarily used in the public sector, but today there are very few new employees who can receive a civil servant pension. Additionally, there are a number of company pension schemes in Denmark that are savings-based and defined-benefit (so-called commitment schemes), and the assets behind company pension funds constitute only about 1.4% of Danish pension funds.

Voluntary conversions have made a significant contribution to the transition away from guarantees

Traditional pension schemes with guaranteed benefits were part of collective bargaining agreements, and the contribution rates to the occupational pensions were set in the collective bargaining agreements. This meant that the pension companies could not unilaterally terminate the existing agreements, see Jarner, Munk and Steffensen (2022). New contributions could be moved to new unguaranteed schemes, but in order to achieve critical mass in the new schemes, moving some of the existing funds to new schemes was needed.

Several companies ran conversion campaigns offering members the opportunity to voluntarily convert savings in guaranteed pension products and transfer both their existing savings and future contributions to unit-linked pension schemes or collective pension schemes with conditional guarantees or with no guarantees at all. However, there were also companies and pension savers who chose to move pension assets to collective pension schemes with a lower guarantee, allowing greater risk-taking. The main argument was that the guarantees forced pension

companies to invest very conservatively, while the new products allowed greater allocations to risky assets with higher expected returns. Several of the pension companies that only offered collective pension schemes were characterised by the fact that a specific professional group made up the entire population of pension savers and that there was no external party to secure the guarantees. This meant that the risk was ultimately covered by the savers themselves, regardless of whether the pension company's schemes were with or without guarantees. For the savers of these pension companies, it was therefore advantageous to give up the guarantees and thus achieve greater investment freedom.

Without voluntary conversions from existing contracts, the transition away from pension schemes with guarantees would have been considerably slower.[21]

Pension savers were given incentives to convert pension savings, such as being awarded a conversion bonus. One of the reasons why it has been possible for companies to offer significant supplements to savers' individual pension accounts as a conversion bonus is that, due to the solvency requirements, they had hedged the risk of falling interest rates in particular for an extended period. The generally falling interest rates meant that the pension companies' investments in interest rate insurance had generated gains to hedge future liabilities, which the pension companies had not yet allocated to the pension savers' individual accounts and hence not immediately available to the savers. These gains were reserved as accumulated value adjustments instead, see chapter 5. If the individual chose to convert to a new scheme with a lower guarantee, conditional guarantee or no guarantee, the pension company could sell the guarantees and thus also the interest rate insurance and transfer the financial value of the interest rate insurance to the new scheme. Put simply, pension savers received the value of their guarantees and a higher expected (albeit uncertain) return in exchange for giving up the security of the size of future pension benefits.

Guaranteed payouts are currently only a small part of total liabilities

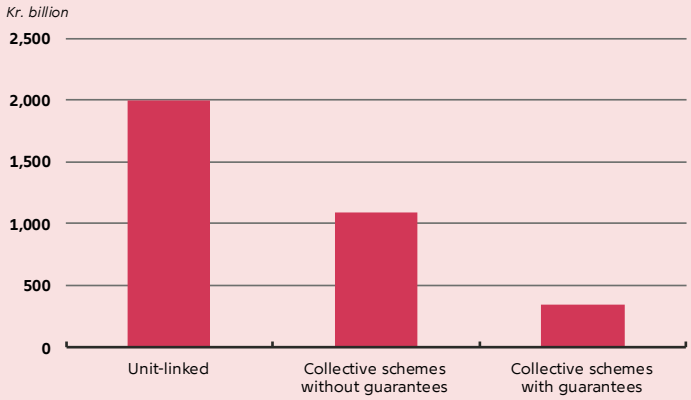
The most prevalent pension schemes have no guarantees, and unit-linked pension schemes in particular have become dominant. By the end of 2024, just under 60 per cent of occupational pension schemes, corresponding to approximately kr. 2,000 billion, were placed in unit-linked pension products, while collective schemes without guarantees amounted to approximately kr. 1,100 billion and collective schemes with guarantees amounted to approximately kr. 350 billion, see chart 8 and chart 9.[22]

[21] In the Netherlands, the latest pension reform chose to move the existing guaranteed schemes into new non-guaranteed schemes via legislation. This implies a very rapid movement away from guarantees. This reorganisation has sparked political debate about the future system in the Netherlands.
[22] The split of guaranteed and unguaranteed collective defined contribution schemes is only used for data from the end of 2024.

CHART 8

More funds are placed in unit-linked pension schemes compared to the two types of collective pension schemes.

Total liabilities by type of pension scheme

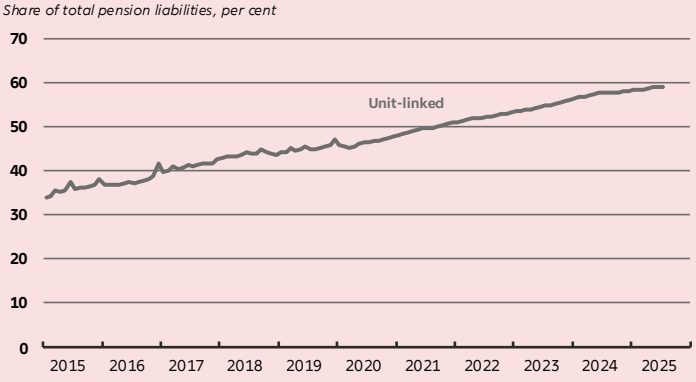


Note: The population is described in Appendix A. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all. Data is from the end of 2024.
Source: Danmarks Nationalbank and own calculations.

CHART 9

Unit-linked pension schemes have become more prevalent in recent years

Unit-linked pension schemes' share of total pension liabilities



Note: The population is described in Appendix A. Latest observation: July 2025.
Source: Danmarks Nationalbank and own calculations.

Only a few companies currently offer collective schemes with guarantees to new pension savers, which is why new pension savings are mainly in unit-linked pension schemes or collective schemes without guarantees.

For a number of years, there has been an international transition away from defined benefit schemes similar to the guaranteed schemes in Denmark, and towards defined contribution schemes, see OECD (2024). This is also due to the structural decline in interest rates and difficulties in hedging future pension liabilities.

04

Unguaranteed pension schemes are invested with higher risk

Pension schemes that do not have guarantees linked to returns or benefits can be invested more freely than guaranteed schemes and thus potentially with higher risk and higher expected returns.[23] The transition away from guarantees is therefore considered to have increased risk-taking in investments from pension savings. Increased risk-taking refers to the fact that pension savings are increasingly being invested in listed equities, infrastructure and private equity[24].

The transition away from guarantees is therefore considered to have increased risk-taking in investments from pension savings.

Savings are invested with higher risks if benefits are not guaranteed

Pension companies' investments are determined by several factors, including whether they are unit-linked schemes, collective schemes without guarantees or collective schemes with guarantees. This chapter takes a closer look at the companies' investments divided into these three categories, see box 3.

BOX 3

Pension companies' investments are analysed based on their reporting under Solvency II

In this analysis, a general population of pension companies has been defined where it has been deemed reasonable to divide their collective defined contribution schemes into *guaranteed* and *unguaranteed* schemes, see appendix A. This definition means that unguaranteed collective defined contribution schemes refer to collective pension schemes that are either completely without guarantees or have conditions attached to the guarantees.

Based on this definition, each company's investments are analysed based on their unit-linked pension schemes and their collective pension schemes respectively. Data used in this chapter is primarily based on solvency reporting under the Solvency II Directive.[1] Master data for investments is also based on figures from Danmarks Nationalbank. In addition, data has been enriched from other sources.[2] Investments from unit-linked pension schemes are therefore observed separately from investments from their collective pension schemes. If a company is categorised as primarily having guaranteed collective schemes, its total investments from collective pension schemes are considered to be based on plans with guarantees. The same applies to unguaranteed collective schemes. The breakdown of the different collective pension schemes only applies to the assets and liabilities of the selected pension companies at the end of 2024.

[1] The foundation of Solvency II consists of reporting that requires companies to report detailed risk information, see The Danish Financial Supervisory Authority (2024).
[2] Data from Danmarks Nationalbank has been used to analyse Danish investment funds. Alternative investments are categorised in collaboration with F&P.

[23] Several factors affect the degree of investment risk that the pension company can take on. For collective schemes with guarantees, companies with high bonus reserves can take on more investment risk. Collective pension schemes with high guarantees relative to the market rate and low bonus reserves are more limited in terms of the amount of risk they can take on. Collective schemes without guarantees are generally less restricted, see Achord and Kristiansen (2021).
[24] Private equity may also be referred to as unlisted equity.

To shed light on the risk-taking in investments, the investments in different asset classes from the three different types of pension schemes are analysed. A distinction is therefore made between investments in bonds, listed equities and alternatives. Investments in bonds are typically considered to be relatively safe investments. Conversely, equity investments and alternative investments are considered relatively risky investments.

Based on these three main asset classes, collective schemes with guarantees are invested with the relatively lowest investment risk. For this type of pension scheme, listed equities account for 4 per cent of total investments, *investment grade bonds*[25] account for 60 per cent, and alternative investments account for 21 per cent, see chart 10.[26] Collective schemes without guarantees are invested with a relatively higher level of risk. Listed equities account for 21 per cent of total investments, while 35 per cent are placed in investment grade bonds and 31 per cent in alternatives. For unit-linked pension schemes, investment risks are even higher in relative terms, with listed equities accounting for almost half of total investments, while investment grade bonds account for just 21 per cent of total investments. Alternative investments in unit-linked products account for 22 per cent, which is similar to collective schemes with guarantees.

The proportion of investments which are placed in listed equities and bonds varies across the companies. Most investments from unit-linked pension schemes are placed in investment portfolios that overall, for each company, have an equity share between 25 per cent and 70 per cent and a bond share between just under 15 per cent and 40 per cent. For collective schemes with guarantees, the majority of investments are placed in investment portfolios that for each company have an equity share of less than 20 per cent, while the bond share varies from around 40 per cent to around 75 per cent. The companies' investment portfolios from collective schemes without guarantees are generally midway between the other two types of pension schemes in terms of how much equity and bond investments represent of their total investment assets, see chart 11.

Collective schemes with guarantees commit parts of the pension company's investment strategy to the guaranteed benefits

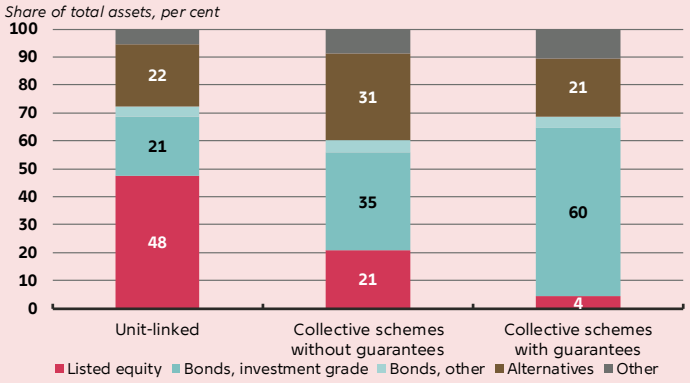
The guarantees influence the pension company's investment strategy. All else being equal, the commitment to maintaining guaranteed benefits requires that investments focus on assets that provide a known and secure cash flow. Bonds make up a large proportion of total investments, partly because bonds are a relatively safe asset class that supports predictability in the payout phase, and partly because the interest rate sensitivity of bonds is similar to that of guaranteed liabilities. On the other hand, the likelihood of achieving a relatively high return is limited. However, there are different types of bonds and the risk and return conditions vary depending on the type of bonds invested in.

[25] For all three types of pension schemes, the majority of the bonds are placed in *investment grade bonds*, which are safer bonds compared to *speculative grade bonds*, which are high yield bonds and typically associated with more risk. Between 3 and 6 per cent of total investments are placed in *speculative grade bonds*.
[26] Data is processed on the basis of reports from pension companies. It has been possible to identify the asset class for 92 per cent of the total assets. The remaining 8 per cent are therefore not categorised.

CHART 10

Pension funds in occupational pension schemes carry higher risk if benefits are not guaranteed

Asset allocation by pension scheme type



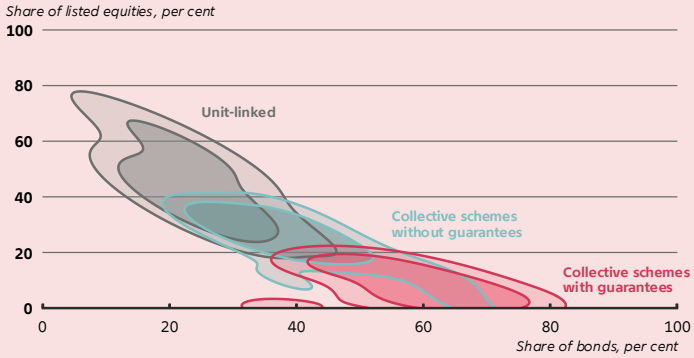
Note: The population is described in Appendix A. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all. Derivatives are not included. *Other* indicates various other asset classes such as loans and loans with bonds as collateral, bank deposits and unallocated holdings. Danish investment funds are screened to include pension companies' holdings of listed equities, bonds and alternatives via these funds. Data is from the end of 2024.

Source: Own calculations based on Solvency II Quarterly Reporting Template and Danmarks Nationalbank.

CHART 11

Schemes without guarantees generally have a higher equity share than those with guarantees

The distribution of each company's holdings in bonds and listed equities



Note: The chart shows the distribution of the different companies' equity and bond holdings in relation to their total investment assets. The chart is a contour representation, which means that the areas are weighted by each company's total investment assets from the relevant types of pension schemes. Darker shades indicate that 50 per cent of the mass is in this area. The outer edge of the areas indicates that 75 per cent of the mass is within that area. The population is described in Appendix A. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all. Derivatives are not included. Danish investment funds are screened to include pension companies' holdings of listed equities and bonds via these funds. Data is from the end of 2024.

Source: Own calculations based on Solvency II Quarterly Reporting Template and Danmarks Nationalbank.

Pension schemes without guarantees have greater investment freedom

For collective schemes without guarantees, the company does not assume the market and longevity risk to the same extent as in the guaranteed schemes. If the investments perform poorly, preventing the company from achieving the returns it has promised savers, the company can reduce the benefits if a number of conditions are met, see box 2. The risk related to e.g. market fluctuations thus lies with the pension saver and not with the company, see The Danish Financial Supervisory Authority (2017). However, the investment strategies associated with collective schemes without guarantees also differ from unit-linked pension schemes. This difference may be due to the fact that companies aim to deliver the stable, average returns promised to savers, which points more towards current cash flow investments compared to equity investments. In addition, collective pension schemes contain an element of risk sharing in that the funds are invested by pooling risks within a given cohort[27] regardless of the individual's age, unlike the individual approach in unit-linked pension schemes.

[27] Collective pension schemes, whether with or without guarantees, are characterised by the fact that the funds are invested from a community with the same investment strategy. Typically, everyone in a given profession, such as teachers or nurses, share the same investment strategy.

The risk-taking within each asset class is also affected by the guarantees

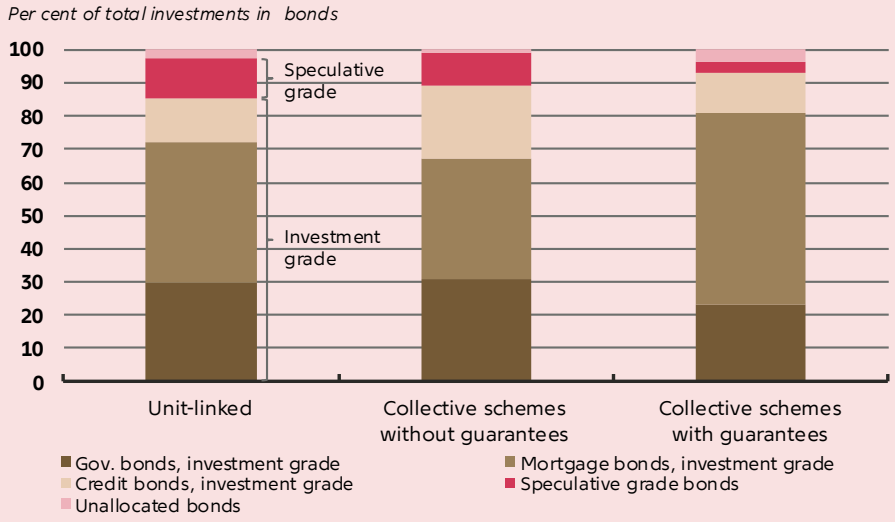
The lower risk capacity from collective schemes with guarantees is not only reflected in the overall picture of pension companies' investments. A similar picture is seen for pension companies' investments in bonds and alternatives, respectively.

Pension assets in unguaranteed schemes are increasingly invested in bonds with higher risk and higher expected returns

Looking more specifically at the bonds which each scheme invests in, risk also differs. For unit-linked pension schemes and collective schemes without guarantees, the safer types of bonds – investment grade bonds – account for just under 90 per cent of total investments in bonds, with mortgage bonds accounting for the largest share, see chart 12. For collective schemes with guarantees, investment grade bonds make up just over 90 per cent of total investments in bonds. The difference indicates that even within bond investments, investments are made with less risk from schemes with guarantees. In particular, collective schemes without guarantees also invest more in credit bonds in general compared to unit-linked pension schemes and collective schemes with guarantees.

CHART 12

Bonds with relatively low risks constitute the largest share of bond investments for schemes with guarantees



Note: The population is described in Appendix A. The chart shows the proportion of total bond holdings invested in the specified type of bonds. *Investment grade bonds* are relatively highly rated bonds. *Unallocated bonds* cover bonds with no known credit ratings. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all. Derivatives are not included. Danish investment funds are screened to include pension companies' holdings of listed equities, bonds and alternatives via these funds. Data is from the end of 2024.

Source: Own calculations based on Solvency II Quarterly Reporting Template and Danmarks Nationalbank.

Since unit-linked pension schemes and collective schemes without guarantees have a smaller share of their total investments in bonds placed in investment grade bonds, this means that they also have a larger share of their total investments in bonds placed in the riskier types of bonds, speculative grade bonds. For unit-linked pension schemes, speculative grade bonds account for 12 per cent of total investments in bonds, and for collective schemes without guarantees the figure is 10 per cent.

Unguaranteed pension schemes are characterised by greater risk-taking in alternative investments

Alternative investments are typically considered to be associated with higher investment risks, but also higher expected returns compared to e.g. Danish government and mortgage bonds, see box 4.

BOX 4

Alternative investments involve higher risks and higher expected returns when compared to Danish government and mortgage bonds

Alternative investments are often defined as assets that are not traded on a stock exchange. Alternatives are therefore relatively illiquid, and a market price is not immediately observable, see Achord and Kristiansen (2021). In this analysis, alternatives are defined as unlisted loans, private equity, real estate and infrastructure. Other alternatives that make up a small part of total investments include agriculture, forestry and hedge funds.

Alternative investments have a higher expected return compared to investments in long-term government and mortgage bonds, and some alternative investments have characteristics similar to bonds. Companies therefore invest in alternatives to achieve higher expected returns, such as investments in private equity funds, and higher expected long-term cash flows, such as from direct lending, infrastructure and real estate. Due to the illiquidity, investors demand an extra return for investing in these assets instead of assets that are easier to sell. Since pension companies have long-term liabilities, they have the opportunity to earn this so-called illiquidity premium over time.

Special risks related to alternative investments

The sector's access to liquidity becomes more limited if highly liquid bonds are replaced by illiquid alternatives. In times of market stress or uncertainty, lack of liquidity can influence the behaviour of companies in a more pro-cyclical direction. Valuation also involves a degree of subjectivity and companies can have different valuations for the same asset. Illiquid assets can also be expected to be sold at a significant discount in a stressed situation, exacerbating any solvency issues for the pension company.

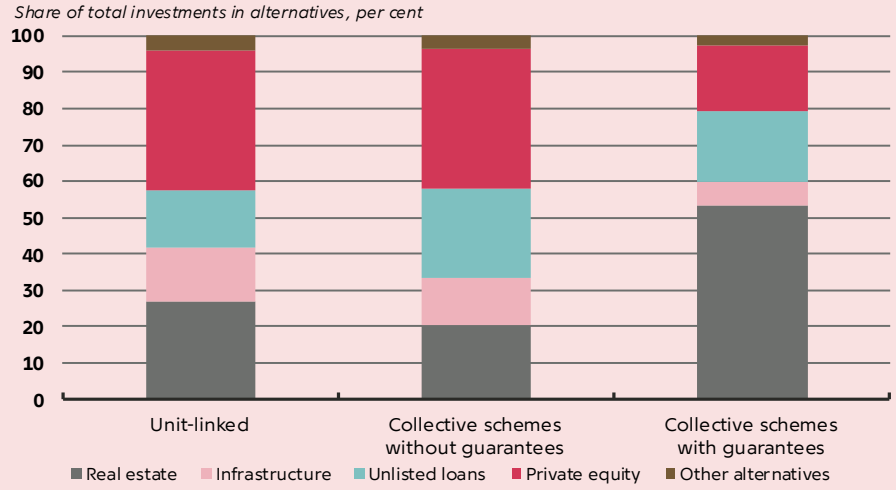
The share of total investments represented by alternative investments depends not only on how much risk the company can assume conditional on the type of commitments it is bound by. Commercial providers of unit-linked products are less limited in terms of investment risks, but it is necessary to maintain a certain amount of liquidity in case a large corporate scheme is transferred to another company. By comparison, this extra liquidity is not necessary for collective schemes as they are typically linked to subject-specific pension funds, where the pension savers are made up of specific and larger professional groups. In these subject-specific pension funds, the risk of large corporate schemes being transferred is therefore limited. Subject-specific pension funds can thus invest more in the most illiquid alternatives such as infrastructure.

Unit-linked pension schemes and collective schemes without guarantees allocate a higher proportion of their alternative investments to the riskier categories within this asset class. Investments in real estate, deemed to be one of the most secure alternative investments, see chapter 5, account for only 27 per cent and 20 per cent of total alternative investments from unit-linked pension schemes and collective schemes without guarantees respectively, see chart 13. In contrast, real estate makes up just over half of alternative investments from collective schemes with guarantees. The remaining alternatives are primarily placed in investments in infrastructure, private equity and unlisted loans.

CHART 13

Alternative investments from collective schemes with guarantees are mainly directed towards investments in real estate

Breakdown of alternative investments by pension scheme



Note: The population is described in Appendix A. The chart shows the distribution of the total alternative investments. *Other alternatives* include hedge funds, forestry and agriculture and unallocated alternatives. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all. Derivatives are not included. Danish investment funds are screened to include pension companies' holdings of listed equities, bonds and alternatives via these funds. Data is from the end of 2024.
Source: Own calculations based on Solvency II Quarterly Reporting Template and Danmarks Nationalbank.

Increased investment in private equity and infrastructure from unguaranteed pension schemes

Private equity and infrastructure are considered some of the risky categories within alternative investments, and there is evidence that the higher risk-taking associated with unguaranteed pension schemes is increasing investment potential in areas such as private equity and infrastructure. Pension company investments in private equity typically include unlisted equity holdings and investments in private equity funds. Investments in venture capital funds are deemed to account for a limited share of the pension companies' total investments in private equity. Investments in infrastructure include energy infrastructure, for example.

Unit-linked pension schemes and collective schemes without guarantees allocate around 40 per cent of their total alternative investments in private equity. In comparison, private equity accounts for just under 20 per cent of total alternative investments for collective schemes with guarantees. A similar picture is seen for investments in infrastructure, which make up around 15 per cent of total alternative investments for unit-linked pension schemes and collective schemes without guarantees, compared to 7 per cent for collective schemes with guarantees. Overall, investments made by companies in private equity and infrastructure reinforce the picture that schemes without guarantees have a higher risk capacity than schemes with guarantees.

Danish pension companies invest more in Danish equities than the market portfolio suggests, but the US makes up the largest share

Danish pension assets are invested in assets all over the world. However, more investments are made in Danish companies than the MSCI World Index[28] would suggest.

Investments in listed equities can be compared with the MSCI World index to get an idea of whether the geographical location of equity investments is more focused on Denmark and Europe than the equity market would suggest. In the MSCI World index, the US accounts for 74 per cent of total exposures, while the rest of the EU, UK, Norway and Switzerland account for 14 per cent. Denmark accounts for just 0.7 per cent of total exposures in the MSCI World index, see chart 14. Looking solely at pension companies' investments in listed equities, Danish companies account for 9 per cent of the total holdings of listed equities for unit-linked pension schemes and 5 per cent for collective schemes without guarantees, see chart 14.[29] This means that Danish pension companies invest with a certain overweight of Danish equities compared to the distribution that applies to the MSCI World index. A similar share of equity investments going to domestic companies is also seen in other countries, and this share has generally decreased in recent decades.

Of the total equity investments, companies in the other EU countries, UK, Norway and Switzerland account for 14 per cent for unit-linked pension schemes and 15 per cent for collective schemes without guarantees, which is comparable to the distribution in the MSCI World index. The US is the country in which pension companies have the most equity investments, with US equities accounting for 59 per cent of the total equity investments for both unit-linked pension schemes and collective schemes without guarantees, compared to 74 per cent in the MSCI World index.

However, it's not just the pension companies' investments in listed equities that are distributed across countries. A breakdown by country of bond investments shows a significantly larger share invested in Denmark in particular, see chart 15. This is mainly because the pension companies' favourite bonds are Danish government and mortgage bonds. Danish pensions are paid in Danish kroner, which may be a contributing factor to the relatively large allocation to Danish bonds. On the other hand, the size of the pension sector means that there would be a significant concentration risk if all investments were to be in Danish kroner.

The Danish case suggests that the transition away from guarantees implies increased investment in foreign assets

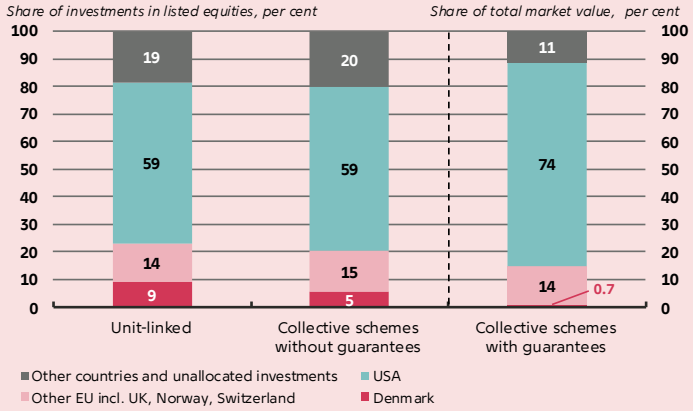
The transition in Denmark towards unguaranteed schemes has led to increased investments outside Europe. This is particularly due to a larger share of equity investments being placed in the US compared to bond investments, which have largely been placed in Denmark. To what extent these experiences will also apply in other European countries is uncertain, as Denmark is both a small currency area and has a relatively large bond market due to its mortgage system.

[28] *The MSCI World Index* is a stock index containing large and mid-cap companies across 23 developed countries. MSCI World is often used for comparison with the world equity market in general.
[29] As equity investments only account for 4 per cent of total investments from collective schemes without guarantees, the geographical distribution of equity investments from this type of pension scheme is not included.

CHART 14

Although a large portion of equity investments by pension companies are in European companies, the majority are directed towards the US

Geographical breakdown of investments in listed equities

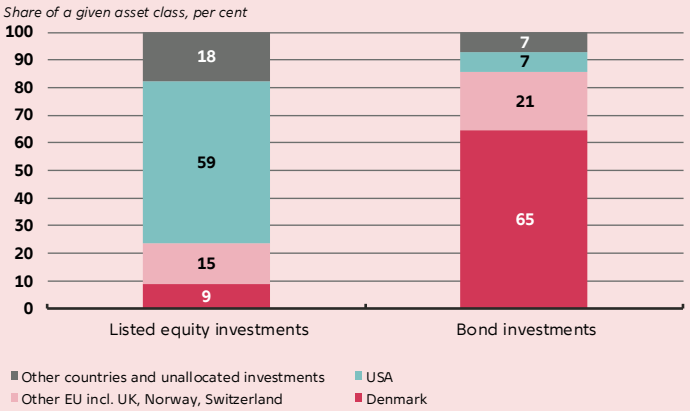


Note: The population is described in Appendix A. The chart shows the total investments in listed equities by geography. The geographical spread has been analysed. *Other EU* includes all EU countries with the exception of Denmark. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all. Derivatives are not included. Danish investment funds are screened to include pension companies' holdings of listed equities, bonds and alternatives via these funds. Data is from the end of 2024.
Source: Own calculations based on Solvency II Quarterly Reporting Template and Danmarks Nationalbank.

CHART 15

Pension companies are investing more in Denmark and Europe through investments in bonds

Geographical breakdown of the investments in listed equities and bonds



Note: The population is described in Appendix A. All three pension schemes are added together. The geographical allocation has been screened. *Other EU* includes all EU countries with the exception of Denmark. Derivatives are not included. Danish investment funds are screened to include pension companies' holdings of listed equities and bonds via these funds. The breakdown is from the end of 2024.
Source: Danmarks Nationalbank and own calculations.

05
Risk-taking means greater volatility and higher expected returns

Pension companies are required by regulation to invest their assets according to the so-called *prudent person principle*. The prudent person principle follows Solvency II and means that assets must be invested in such a way that the pension saver's interests are best served, see box 5.

BOX 5

The pension company must invest the funds so that the pension saver's interests are best served

Companies must be able to identify, measure, monitor, manage, control and report on the investment risks. There must be a clear framework for risk-taking and for ensuring an appropriate degree of risk diversification, concentration risks and liquidity risks. The requirements are an implementation of the *prudent person principle*, which aims to ensure that the companies' investment strategies reflect what the savers have been promised and that the expected returns and risks are balanced in the best possible way in relation to the formulated investment strategies.[1] The relationship between expected return and risk is implicit in the above requirements to identify the characteristics of the assets. Especially for alternative investments, the requirements can be difficult to quantify. Each investment is often different, and both the investment process and valuation are complex. One of the reasons for the complexity is that there are no observable market values for the assets. This makes assessing the expected profitability of alternative investments equally complex.

Even though savers generally bear the entire investment risk in, for example, unit-linked products, there are certain constraints on the investments. The prudent person principle applies regardless of whether the pension product is guaranteed or unguaranteed. In addition, the company must ensure that there is consistency between the investment strategy and the benefit profile that the company expects for the product and that is communicated to customers. For guaranteed products, this means, for example, that the investments must be composed in such a way that the guaranteed benefits can be honoured with certainty, which requires a certain proportion of long-term, secure claims. For unguaranteed products, this means that the risk and composition of the assets must be consistent with the risk of uncertainty in the payout phase that the company believes a given product is likely to have.

[1] The prudent person concept dates back to "The Prudent Man Rule" as formulated by Judge Samuel Putnam (1768-1853), who in a case from 1830 stated that those who have the fiduciary duty of investing for others should act prudently and sensibly as if it were their own funds, always assessing both the profitability and safety of the capital. Before the principle became part of the framework for the Danish pension sector through the pan-European regulation, Danish legislation similarly formulated the requirements for the suitability and composition of assets as "Companies must invest their assets in such a way that the interests of policyholders and beneficiaries are best served".

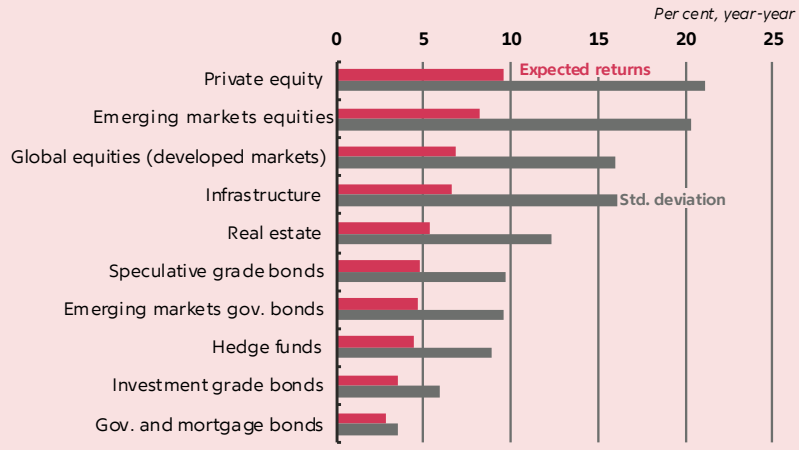
Higher expected returns mean greater volatility in investment returns

To best serve customers' interests, higher risk-taking should typically result in higher expected returns. According to the Council for Return Expectations[30], higher expected returns also imply expectations of greater fluctuations in investment returns. For example, global equities have an expected return of approximately 7 per cent in the most recently announced return expectations and a standard deviation of approximately 16 per cent. In comparison, government and mortgage bonds have an expected return of approximately 3 per cent and a standard deviation of approximately 3.5 per cent, see chart 16.

CHART 16

With higher expected returns comes higher expected volatility

Return expectations, 1-10-year period



Note: The Council for Return Expectations established calculation assumptions for expected returns and risk on various investment assets for the second half of 2025. *Speculative grade bonds* may also be referred to as high yield bonds.
Source: Council for Return Expectations, 2nd half of 2025.

Collective schemes with guarantees have provided stable but lower credited interests compared to schemes without guarantees

The funds that savers are credited to their pension savings are called the credited interests. In unit-linked pension schemes, the credited interests will typically correspond to the annual investment return in the selected risk group. However, this is not the case for collective schemes with or without guarantees. It is therefore important to separate the credited interests from the investment return in each scheme. For collective schemes with and without guarantees, if a company systematically achieves a higher investment return over time than is attributed as credited interests, reserves, also known as bonus potentials, are built up. Bonus potential must eventually accrue to savers. For collective schemes with guarantees, accumulated value adjustments can also cause large

[30] The Council for Return Expectations was set up by Insurance & Pension Denmark and Finance Denmark and sets return expectations and other calculation assumptions to calculate pension forecasts and investment return expectations for customers. The purpose of the council's independent assessment is to ensure the credibility of companies' pension forecasts. See the Council for Return Expectations (*link*)..

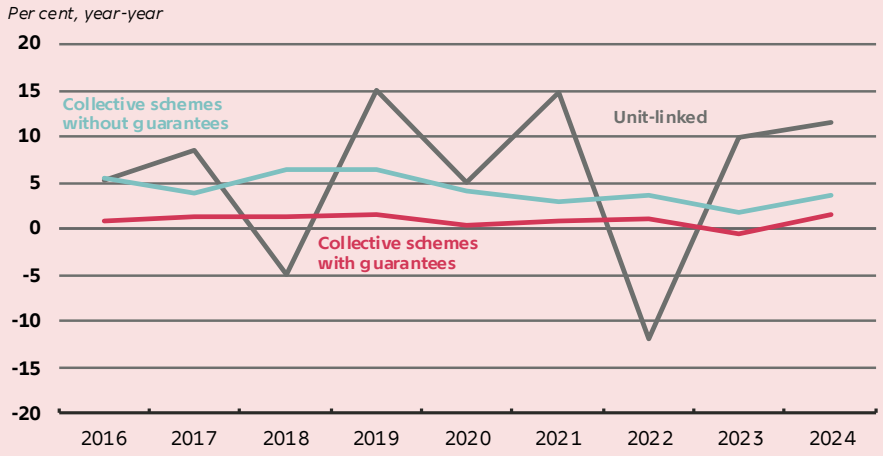
annual fluctuations in investment returns. Accumulated value adjustments reflect the discounted value of future guaranteed benefits, see box 6.

Since 2016, the development in the credited interest rate has been different for the three types of pension schemes. For example, the credited interest rate for unit-linked pension schemes fluctuates significantly from year to year, while the credited interest rate for collective pension schemes is more stable, see chart 17. The annual credited interest rates have been higher for collective schemes without guarantees compared to collective schemes with guarantees since 2016. This is because investment returns are characterised by higher risk-taking, and because collective schemes with guarantees set aside funds as accumulated value adjustments to meet the guaranteed benefits in the future.

CHART 17

Credited interest rates in collective schemes have been stable, while they have followed the market development in unit-linked schemes

Credited interest rates



Note: Based on micro data, annual frequency. *Credited interest rates* refer to the interest rates on policy holders' pension savings. The data shows the wealth-weighted average for individuals aged 40-50. Pension wealth below kr. 50,000 is excluded from the population. The chart shows the growth in the pension savings accounts broken down by type of pension scheme. The credited interest rates include administrative costs and costs related to risk coverage and are calculated as the growth in the value of the pension savings accounts, less bonus potential and accumulated value adjustments. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all.
Source: Danmarks Nationalbank and own calculations.

BOX 6

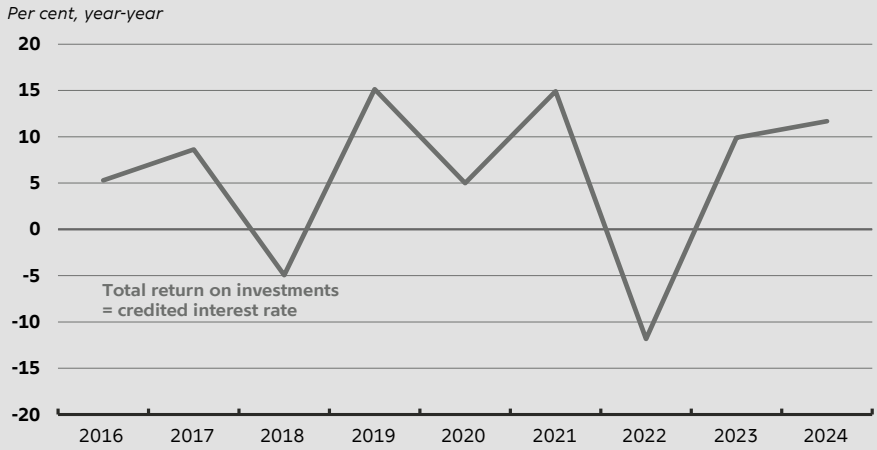
How investment returns affect the development of customers' pension savings

The investment return contributes to the development of customers' pension savings through various mechanisms. For unit-linked schemes, the return on investments is basically credited directly to the pension savings.[1] On average, from 2016 to 2024, unit-linked pension schemes have yielded approximately 6 per cent in annual returns.[2] This average is distributed over years with relatively large fluctuations in investment returns, with the highest credited interest rate of 15 per cent in 2021 and the lowest credited interest rate of -12 per cent in 2022, see chart A. The fluctuations in investment returns are smaller for individuals over 55 years old, which can partly be explained by the fact that lifecycle adjustments reduce investment risks as the pension saver ages. See more in the section *Lifecycle adjustments in unit-linked pension schemes reduce investment risks as savers age*.

Chart A

Investment returns are directly credited to the customer's pension accounts in unit-linked pension schemes

Return on investment for unit-linked schemes



Note: Based on micro data, annual frequency. *Credited interest rates* refer to the interest rates on policy holders' pension savings. The data shows the wealth-weighted average for individuals aged 40-50. Pension wealth below kr. 50,000 is excluded from the population. The chart shows the growth in the pension savings accounts. The credited interest rates include administrative costs and costs related to risk coverage, and are calculated as the growth in the value of the pension savings accounts, less bonus potential and accumulated value adjustments.
Source: Danmarks Nationalbank and own calculations.

Investment returns for savers with collective schemes are not always credited directly to their pension accounts via the credited interests. To ensure a stable credited interest rate, the funds from the investment return are also allocated to individual or collective bonus potential and to accumulated value adjustments. These mechanisms support the company in maintaining the guarantee or average rate to customers.

Bonus potential is used by pension companies to ensure a stable credited interest rate on customers' pension savings

The investment return from collective schemes can be reserved to even out the impact of market fluctuations. When the investment return exceeds the guaranteed return promised to savers, part of the funds can be reserved as so-called bonus potential. If the return one year is lower than the guaranteed return, the pension company has reserves that can be used to ensure that the customers' credited interest rate corresponds to what the company has promised the savers. If the bonus potential reaches a sufficient size, the pension company must pay out bonus potential to customers and attribute a higher credited interest rate. This was seen in 2022, for example, when high returns from 2021 meant that bonus potential was attributed to many customers' pension savings accounts, see chart B.

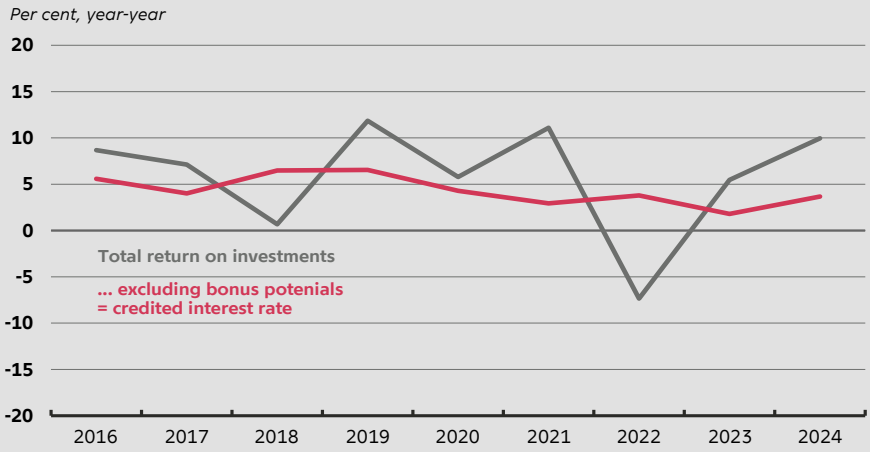
Continues ...

... continued

Chart B

The investment return for collective schemes without guarantees is primarily allocated to bonus potential and credited interests

Return on investment for collective schemes without guarantees



Note: Based on micro data, annual frequency. *Credited interest rates* refer to the interest rates on policy holders' pension savings. The data shows the wealth-weighted average for individuals aged 40-50. Pension wealth below kr. 50,000 is excluded from the population. Accumulated value adjustments are found in the population for collective schemes without guarantees. Accumulated value adjustments for collective schemes without guarantees may be due to the fact that most companies with collective schemes without guarantees also have a smaller share of their total assets placed in collective schemes with guarantees. See Appendix A for a more detailed breakdown of the three types of pension schemes. The figures include administrative costs and costs related to risk coverage. Collective schemes without guarantees refers to collective pension schemes with conditional guarantees or no guarantees at all.
Source: Danmarks Nationalbank and own calculations.

For guaranteed schemes, accumulated value adjustments are applied so that the pension company's assets can cover the future guaranteed obligations

For collective schemes with guarantees, accumulated value adjustments are also used to hedge the guaranteed obligations. Through the accumulated value adjustments, funds are reserved to fulfil future guaranteed benefits. This is because interest rate fluctuations affect the market value of assets that hedge the guaranteed benefits. These value adjustments are not directly attributed to the pension saver's account as credited interest, even though they are part of the investment return, but are reserved to secure the future guaranteed benefits. Accumulated value adjustments are therefore primarily used by collective schemes with binding guarantees.

In some years, interest rate fluctuations can cause significant fluctuations in returns from investments in bonds and long-term interest rate derivatives. It is therefore typical for collective schemes with binding guarantees that value adjustments constitute a significant part of the investment return, as bonds and interest rate derivatives are used to hedge the long-term liabilities that the guaranteed benefits represent. For example, the value of future guaranteed benefits increases when interest rates fall, such as in 2019. This interest rate risk is typically hedged so that a corresponding increase in value is seen in the investment return. To ensure that the pension company can fulfil the guaranteed benefits – even after their value has increased when interest rates fall – the investment return is not directly attributed to the credited interest rate, but is allocated to accumulated value adjustments, see chart C.

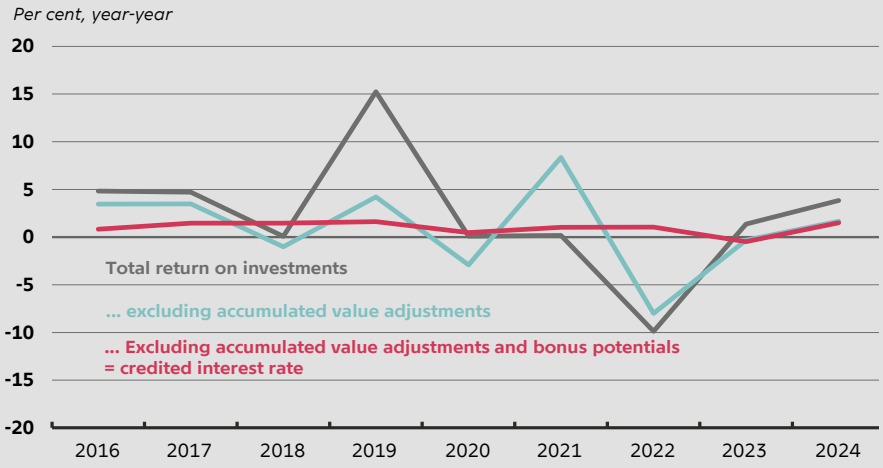
Continues ...

... continued

Chart C

The investment return for collective schemes with guarantees is attributed to accumulated value adjustments, bonus reserves and credited interests

Return on investment for collective schemes with binding guarantees



Note: Based on micro data, annual frequency. *Credited interest rates* refer to the interest rates on policy holders' pension savings. The data shows the wealth-weighted average for individuals aged 40-50. Pension wealth below kr. 50,000 is excluded from the population. The chart shows the growth in the pension savings accounts. The credited interest rates include administrative costs and costs related to risk coverage and are calculated as the growth in the value of the pension savings accounts, less bonus potential and accumulated value adjustments.
Source: Danmarks Nationalbank and own calculations.

[1] Some unit-linked pension schemes also include *individual smoothing mechanisms* in which part of the investment return from years with relatively high returns can be set aside to even out the effect of years with relatively low investment returns.
[2] The average annual investment return from unit-linked schemes is calculated as a geometric average, thus accounting for the compound interest effect.

Age composition varies across pension schemes

Just as the type of pension scheme affects investment risk-taking, the age of savers also influences how much investment risk is typically taken. This relationship between age and risk taking is more complex in collective pension schemes, where investments are made from a collective point of view, than in unit-linked pension schemes that take an individual approach.

Pension savers who have many years until retirement typically have an interest in investing their pension assets in riskier investments to seek a higher expected return. Younger savers have a very long investment horizon. Their wealth is typically relatively limited and increasing, and all else being equal, there is the prospect of many years of salary income and additional savings. For savers close to retirement age, on the other hand, wealth is approaching its peak and there are relatively few years of salary income to compensate for a loss in the market value of wealth.[31]

[31] See Formuepleje (2024).

People with guaranteed pension schemes are typically older

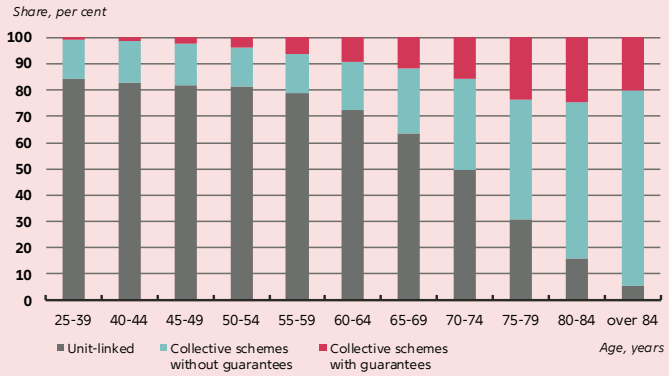
Different age composition within guaranteed and non-guaranteed products can have an impact on the differences in asset allocation described in chapter 4. For example, a larger proportion of people with many years to retirement have unit-linked products, and their age may in itself indicate higher risk-taking in their investments. As an example of the age differences, 83 per cent of the pension assets of people in the 40-44 age group are placed in unit-linked pension schemes, while unit-linked pension schemes for people over the age of 70 account for a maximum of 49 per cent of pension assets, see chart 18.

Looking at the age composition of each of the three types of pension schemes, there are clear differences. 31 per cent of the total assets placed in unit-linked pension schemes are for customers under the age of 50. The corresponding figure for collective schemes without guarantees is 22 per cent, and for collective schemes with guarantees just 7 per cent, see chart 19. As the customer composition of collective schemes with guarantees is more concentrated around older people, this in itself should reduce the risk in the investments. Despite the fact that age can have a significant impact on the risk taking, it is still considered that the guarantees themselves have a significant impact on the investment risks taken by the pension company.

CHART 18

Younger people have the largest share of pension wealth placed in unit-linked products

Breakdown of pension assets per age group by type of pension scheme

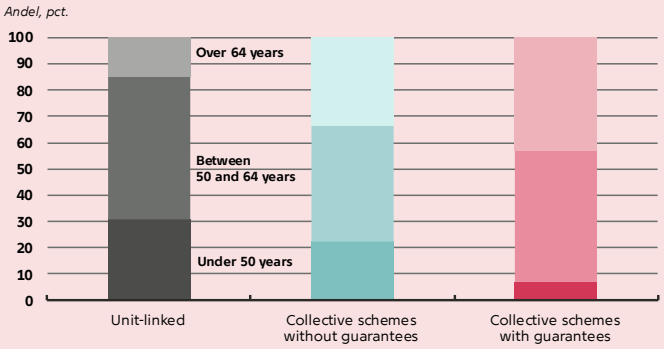


Note: Based on micro data, end of 2024. The chart shows the breakdown of total assets by age group and type of pension scheme. *Collective schemes without guarantees* refers to collective pension schemes with conditional guarantees or no guarantees at all.
Source: Danmarks Nationalbank and own calculations.

CHART 19

The majority of pension wealth invested in collective schemes with guarantees belong to people over 50 years old

Age breakdown of pension assets by type of pension scheme



Note: Based on micro data, end of 2024. The chart is based on the same data as chart 18.
Source: Danmarks Nationalbank and own calculations.

Risks related to pension benefits are mitigated– including for unit-linked pension schemes

Higher investment risk is associated with greater uncertainty in the payout phase, and there are naturally differences across the three types of pension schemes considered in this analysis (unit-linked pension schemes, collective schemes without guarantees and collective schemes with guarantees).

For collective schemes with guarantees, there is limited uncertainty in the payout phase, as the assumptions for the benefits have already been agreed and the pension company bears the market and longevity risk, see chapter 3. However, there is also often a limited likelihood that the customer will receive higher benefits than what is guaranteed, unless the company has a certain collective bonus potential. For collective schemes without guarantees, collective bonus potential can also reduce uncertainty in the payout phase. If the pension company has reserved sufficient funds in collective bonus potential, even large fluctuations in investment returns can be evened out, stabilising the customer's credited interest rates and pension benefits.

Unit-linked pension schemes are typically associated with greater uncertainty in the payout phase. Most pension companies therefore use mechanisms to reduce the uncertainty of the pension benefits, including payout schedules, return expectation adjustments, smoothing mechanisms and lifecycle adjustments.

Unit-linked pension schemes are typically associated with greater uncertainty in the payout phase.

Ongoing pension benefits during retirement reduce the uncertainty regarding benefits

An appropriate payout plan helps limit the risk related to uncertainty of benefits during the payout phase. When a saver reaches retirement age, they will typically still have a long remaining life expectancy and thus still have a long investment horizon. Instead of paying out the entire pension savings all at once, it makes sense for the wealth to remain invested during the ongoing pension payouts. The savings will then potentially be able to recover losses the person may have incurred if retirement age was reached immediately after a drop in investment markets. The main characteristics common to all three types of pension schemes in Denmark are therefore that pension payouts are made on an ongoing basis during retirement and that only a small proportion of the total pension wealth can be paid out upon retirement.

In the Danish pension system, part of the pension savings are paid out as a lump sum, the rest in instalments over 10 to 30 years or as lifelong benefits.[32] This means that there is also the possibility of investment returns on the remaining pension savings during retirement.[33] When benefits are transferred over a number of years, the risk associated with the timing of when customers receive

[32] In Denmark, a distinction is made between three types of pension schemes regarding payouts. With *annuity products* (livrente), which account for around 50 per cent of the total contributions, the pension saver receives life-long monthly payments throughout the payout phase. With *instalment pension* (ratepension), which account for around 40 per cent of total contributions, a monthly payment is received for a period that can range from 10 to 30 years. For *retirement savings* (aldersopsparing), formerly capital pension, which accounts for approximately 10 per cent of total pension contributions, pension savings are paid out as a lump sum that can be made in several instalments. The differences between these three types are not the focus of this analysis.
[33] In this context, it is also appropriate that the asset allocation takes into account that people outside the labour market are particularly exposed to inflation risk, as there is no longer any prospect that increasing wage income can help compensate for inflation.

their pension savings is reduced. However, the risk of prolonged declines in the financial markets will remain.[34]

However, if the pension saver had the entire value of the assets at the time of retirement locked into a lifelong payout schedule or had the entire amount paid out, there would also be a risk related to market conditions at the time of retirement. The price of a fixed lifetime payment schedule is highly dependent on interest rates and life expectancy assumptions at the time. For example, falling interest rates and increased life expectancy over the past 30 years have reduced the fixed payment schedule that can be bought with the same amount of pension savings by 60 per cent, see Jørgensen, Ramlau-Hansen and Rangvid (2022).[35] Even in the very short term, the price of a fixed payment schedule can fluctuate greatly as it is highly dependent on interest rates and the slope of the yield curve.

Smoothing mechanisms reduce uncertainty in the payout phase of unit-linked pension schemes

Many companies with unit-linked pension schemes use smoothing mechanisms in the payout phase to ensure a degree of stability in pension benefits. Such smoothing mechanisms work in different ways. For example, they can work by a company withholding a portion of the saver's pension funds to balance out future negative investment returns, so that the saver does not experience the same drop in pension benefits during retirement as would be the case without such a mechanism. For some companies, the aim of smoothing mechanisms is solely to protect savers against minor fluctuations in pension benefits as a result of market volatility, and for other companies the aim is to protect savers against both short-term and permanent drops in pension benefits, see The Danish Financial Supervisory Authority (2020). Despite the loss of market value of, for example, bond holdings due to interest rate increases, pension benefits can also be stable as interest rate increases typically lead to higher expected future returns on interest-bearing assets.

Lifecycle adjustments in unit-linked pension schemes reduce investment risks as savers age

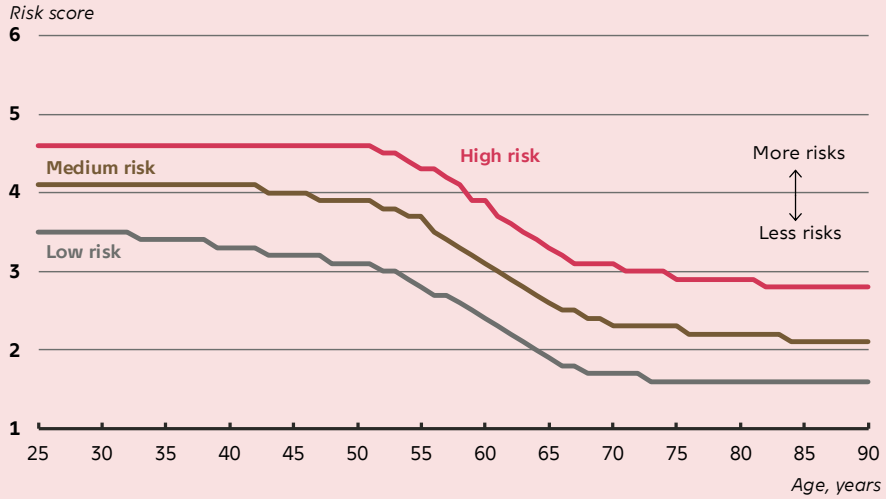
Most pension companies operate with lifecycle adjustments in their unit-linked pension schemes. Lifecycle adjustments mean that the composition of the investments that are included in the savings and payout phases differ in principle. In products with lifecycle adjustments, the risk in the investment portfolio is therefore reduced as savers age.

High risk unit-linked pension schemes maintain a constant high risk until the customer is around 50 years old, after which the risk is gradually reduced, see chart 20. A similar reduction in investment risk also applies to low and medium risk unit-linked pension schemes.

[34] For example, the Japanese financial markets went through an extended period of unfavourable conditions. From 1991 to 2021, the Japanese economy was characterised by persistent low growth and inflation, which meant that the equity market overall did not rise during these three decades.
[35] The calculation is based on 10-year government bond yields and Danish life expectancy assumptions.

CHART 20

Lifecycle adjustments in unit-linked pension schemes reduce risk-taking in investments as the customer ages



Note: All unit-linked products must be labelled with a risk score between 1 and 6. A high risk score indicates high risk and a low risk score indicates low risk. The risk score is calculated based on the calculation assumptions from the Council for Return Expectations, see Fakta om Pension (without year). The chart shows the average risk scores for the different pension products low risk, medium risk and high risk.

Source: Insurance & Pension.

Appendix A

In Denmark there is a tradition of disclosing investments and liabilities in unit-linked and collective pension schemes respectively, but without distinguishing whether the collective pension schemes are with or without guarantees.

As it is assessed that guarantees can affect investment risk, the pension companies are chosen to be categorised individually based on whether the company's collective schemes are predominantly with or without guarantees. This distinction is chosen to categorise the companies' investments in the two types of collective pension schemes.

Thus, a company that predominantly has collective schemes without guarantees is categorised as such for all assets in collective schemes. This will involve some approximation as most companies, even after conversion campaigns or changes of guarantees to conditional guarantees, often still have a small remaining portion of guaranteed schemes. This is because reallocation was typically not recommended to people who were already retired or close to retirement. However, the breakdown of investments reflects the vast majority of savings in schemes without guarantees.

There are four companies among the pension funds and life insurance companies which are not included in the population of categorised companies. For two companies, this is because the liabilities in collective schemes were not considered to be sufficiently concentrated in schemes with or without guarantees, and for two companies it is because the business models are insurance-oriented and not, as for the other companies, primarily orientated towards pension savings.

TABLE 1

Population of the analysis and division into unit-linked schemes and collective schemes with or without guarantees

	Company
Unit-linked schemes	AkademikerPension
	Danica Pension
	Industriens Pension
	Lægernes Pension
	Nordea Pension
	P+
	PensionDanmark
	Pensionskassen Arkitekter & Designere
	Pensionskassen for Jordbrugsakademikere og Dyrlæger
	PFA Pension
	PKA+
	Pædagogernes Pension
	Sampension
	Velliv
Collective schemes without guarantees	AkademikerPension
	Lægernes Pension
	Lærernes Pension
	P+
	PenSam
	Pensionskassen Arkitekter & Designere
	Pensionskassen for Jordbrugsakademikere og Dyrlæger
	PKA
	Sampension
Collective schemes with guarantees	Danica Pension
	Industriens Pension
	Nordea Pension
	Norli Liv og Pension
	Norli Pension Livsforsikring
	PensionDanmark
	PFA Pension
	PKA+
	Pædagogernes Pension
	Velliv

Note: The group "Collective schemes without guarantees" covers companies where the guarantees are either explicitly non-guaranteed or are conditionally guaranteed and can be deviated from, for example, as a result of changes in life expectancy or interest rates and are therefore ultimately non-guaranteed. *PKA* covers four pension funds: The pension fund for state registered nurses and the medical secretaries, the pension fund for health care professionals, the pension fund for social workers, social pedagogues and office staff and the pharmaconomists' pension fund.
Source: Danmarks Nationalbank.

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NEWS

News is an appetiser offering quick insight into one of Danmarks Nationalbank's more extensive publications. News is targeted at people who need an easy overview and like a clear angle.

STATISTICAL NEWS

Statistical news focuses on the latest figures and trends in Danmarks Nationalbank's statistics. Statistical news is targeted at people who want quick insight into current financial data.

REPORT

Reports consist of recurring reports on Danmarks Nationalbank's areas of work and activities. Here you will find Danmarks Nationalbank's annual report, among other documents. Reports are targeted at people who need a status and update on the past period.

ANALYSIS

Analyses focus on current issues of particular relevance to Danmarks Nationalbank's objectives. Analyses may also contain Danmarks Nationalbank's recommendations. They include our projections for the Danish economy and our assessment of financial stability. Analyses are targeted at people with a broad interest in economic and financial matters.

ECONOMIC MEMO

Economic Memo provides insight into the analysis work being performed by Danmarks Nationalbank's employees. For example, Economic Memo contains background analyses and method descriptions. Economic Memos are primarily targeted at people who already have a knowledge of economic and financial analyses.

WORKING PAPER

Working Paper presents research work by both Danmarks Nationalbank's employees and our partners. Working Paper is primarily targeted at professionals and people with an interest in central banking research as well as economics and finance in a broader sense.

The analysis consists of a Danish and an English version. In case of doubt as to the correctness of the translation, the Danish version will prevail.

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Editing completed on 27 August 2025

DANMARKS NATIONALBANK