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Table of Contents

Introduction	3
1 Overview of the Pension System	5
1.1 Description of the pension system	5
1.2 Recent reforms of the pension system included in the projections	11
1.3 Constant policy assumptions	13
2. Overview of the Demographic and Labour Force Projections	15
2.1 Demographic developments	15
2.2 Labour force projections	16
3. Pension Projection Results	22
3.1 Coverage of the pension projections	22
3.2 Overview of the projection results	22
3.3 Description of main driving forces behind the projection results and their implications	25
3.4 Financing of the pension system	31
3.5 Public pension funds	32
3.6 Sensitivity analysis	35
3.7 Changes in comparison with previous Ageing Report Projections	38
4. Description of the Pension Projection Model and the Base Data	41
4.1 Public pensioners projection model	41
4.2 Private and occupational pension schemes	44
A.1 Methodological Annex	47
Economy-wide average wage at retirement	47
Pensioners vs. pensions	47
Pension taxation	47
Disability pensions	48
Non-earnings-related minimum pension	49
Contributions	49
Alternative pension spending disaggregation	49
Administrative data on new pensioners	50
A.2 The Danish Pension System	53
First Pillar Pensions	53
Second Pillar Pensions	54

Introduction

The present country fiche for Denmark is part of the 2024 Ageing Report, which provides long-term projections of the economic and budgetary impact of population ageing at unchanged policy. The 2024 edition is the eighth update and covers the period up to 2070.

This fiche was prepared by the Danish Ministry of Finance in agreement with the Ageing Working Group of the Economic Policy Committee and is based on a common set of assumptions and methodologies. The pension expenditure projections presented in this fiche have been peer reviewed by the other Member States and the European Commission within the Ageing Working Group. The projections were finalised in the autumn of 2023 and represent the situation of the pension system on 01/12/2023.

Section 1 provides a general overview of the pension system in Denmark. Section 2 describes the demographic and labour market assumptions underlying the pension expenditure projections presented in Section 3, which also discusses the sensitivity scenarios around the baseline. Finally, Section 4 provides an overview of the methodology used to produce the pension projections.

Overview of the Pension System

1 Overview of the Pension System

1.1 Description of the pension system

The Danish pension system is organised in three pillars. The First Pillar embodies the public old-age pension, which is a universal defined benefit scheme, underpinned by general taxation, designed to ensure a baseline pension for retirees. A minor funded pension scheme, *ATP (Arbejdsmarkedets Tillægspension)*, also belong in the first pillar since nearly every individual over the age of 16 is obliged to contribute. In addition to the old-age pension, the first pillar also encompasses disability and early retirement pension schemes. Since the last projection exercise a new senior disability pension and a new early-retirement scheme have been introduced.

The Second Pillar mainly comprises quasi-mandatory occupational pension schemes, which are contribution-defined. The average contribution rate is around 12 per cent of gross wages, but varies depending on negotiated rates in collective agreements. This pillar also includes tax-financed earnings-related civil servant pensions, although these covers a small group and generally is in the process of being phased out.

The Third Pillar consists of individual, voluntary pension schemes that are similar to those in the second pillar.

Below is a brief description of the different elements in the first pillar, i.e. the public old-age pension. For those seeking a more detailed description of the pillars of the Danish pension system, please refer to the supplementary annex, A.2.

Public old-age pension

The Public Old-Age Pension is currently available from the age of 67, which is applicable to individuals born in 1956 or later. There is an option to postpone retirement for up to 10 years, which results in a higher pension benefits. The additional benefit is derived from the period of postponement relative to the expected lifetime at the postponed retirement age. This is then multiplied by the regular old-age pension amount and is received until the individual's passing.

To be eligible for public old-age pension, one must have a minimum of three years of residence in Denmark between the ages of 15 and the statutory retirement age. For non-EU citizens, this requirement extends to 10 years, with at least five years being immediately before retirement. For individuals reaching the statutory retirement age on July 1, 2025, or later, the right to a full state pension is conditional upon having a permanent residence in the kingdom for at least 9/10 of the accrual period from the age of 15 until the statutory retirement age. If a person has not had

residence in Denmark for at least 9/10 of the period, the pension is proportionally reduced.¹

The Danish pension system have undergone two significant reforms: The *Welfare Agreement* in 2006 and the *Retirement Reform* in 2011. The 2006 reform introduced an indexation mechanism that ties the statutory retirement age to life expectancy of a 60-year-old. This means that as life expectancy increases, the statutory retirement age will also rise one-to-one (see Box 1.1.). The 2011 reform moved the first retirement age increase forward and reduced the early retirement period from five to three years. The retirement age indexation is vital for ensuring fiscal sustainability in Denmark.

Box 1.1

Description of the indexation mechanism of the statutory retirement age

The indexation mechanism targets an old-age pension period of 14.5 years based on life-expectancy for a 60-year old (unweighted average for men and women). The statutory retirement age can be increased every five years by half a year or one year. Increases need to be confirmed by Parliament 15 years in advance.

The last decision concerning the indexation mechanism was taken by Parliament in 2020, raising the statutory retirement age to 69 years from 2035. The next decision concerning the indexation mechanism will be in 2025, expected to increase the pension age to 70 years from 2040 based on current life expectancy projections.

Example: Increase in old-age retirement age in 2035 (decision in 2020):

- **Assumed life expectancy** = life expectancy for 60 year old in 2019 (latest known data in 2020) + assumed increase of 0.6 years during the announcement period of 15 years = $(60 + 23.8) + 0.6 = 84.4$
- **Calculated retirement age in 2035** = assumed life expectancy – 14.5 years = $84.4 - 14.5 = 69.9$ years
- **Calculated retirement age in 2035 (rounded)** = Calculated retirement age in 2035 rounded to nearest half year = 70 years
- **Actual retirement age in 2035** = 69 (due to restriction of maximum increase by 1 year – statutory retirement age is 68 years in 2034)

Early retirement ages are then increased with one year three years earlier (in 2032) to maintain a three year early retirement period.

Source: Danish Ministry of Finance.

In the projections included in this ageing report for Denmark, the calculated age limits for both old-age and early retirement are based on the life expectancy in the EUROPOP2023, *cf. figure 1.1 and 1.2*. The statutory retirement age is expected to increase by 7 years from 67 years in 2022 to 74 years in 2070. Correspondingly, early retirement age increases by 7½ years from 63½ years in 2022 to 71 years in 2070, *cf. table 1.1*.

¹ For individuals retiring prior to July 1, 2025, the fractional public pension rules are based on a residence requirement of 40 years. If the individual has lived in Denmark for less than 40 years prior to the statutory retirement age, the public pension is reduced proportionally.

The increase in the statutory retirement age ensures that every generation can expect approximately the same number of years in retirement given the projected increase in life expectancy, *cf. figure 1 and 2*.²

Table 1.1
Qualifying condition for retiring

	2022	2030	2040	2050	2060	2070
Qualifying condition for retiring with a full pension						
Minimum requirements	-	-	-	-	-	-
- Contributory period - men	-	-	-	-	-	-
- Retirement age - men	-	-	-	-	-	-
- Contributory period - women	-	-	-	-	-	-
- Retirement age - women	-	-	-	-	-	-
Statutory retirement age - men	67	68	70	71½	73	74
Statutory retirement age - women	67	68	70	71½	73	74
Qualifying condition for retirement without a full pension						
Early retirement age - men	63½	65	67	68½	70	71
Early retirement age - women	63½	65	67	68½	70	71
Penalty in case of earliest retirement age	-	-	-	-	-	-
<i>Bonus in case of late retirement (varies)</i>						
Minimum contributory period - men	-	-	-	-	-	-
Minimum contributory period - women	-	-	-	-	-	-
Minimum residence period - men	-	-	-	-	-	-
Minimum residence period - women	-	-	-	-	-	-

Note: Early retirement covers the VERP-scheme and the Early Pension scheme. The right to a full state pension is conditional upon having a permanent residence in the kingdom for at least 9/10 of the accrual period from the age of 15 until the statutory retirement age.

Source: Danish Ministry of Finance.

² In the coming years, the average number of years in retirement with old age pension are expected to be larger than the target in the indexation rule, because life expectancy has increased more than previously expected.

Figure 1.1
Remaining life expectancy for a 60 year old
(unweighted average for men and women)

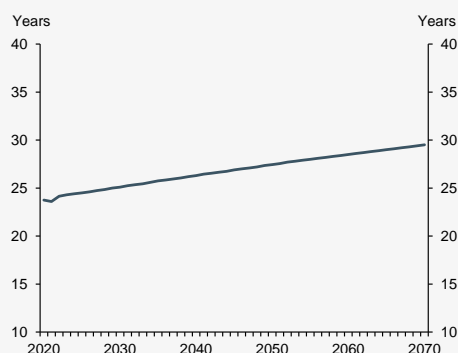
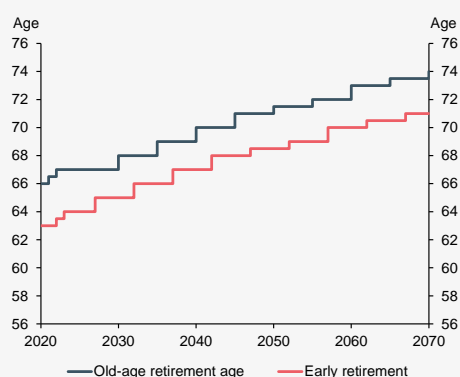


Figure 1.2
Age thresholds for early retirement and public
old-age pension



Note: Changes in the early retirement and old-age retirement ages due to increases in life expectancy have to be confirmed by Parliament 12 (early retirement) and 15 (old-age) years before they take effect. The increases until 2035 are already confirmed. Increases beyond 2035 are projected using the expected life expectancy and under the assumption that Parliament confirms these increases in the retirement age.

Source: Danish Ministry of Finance.

ATP

ATP is a minor funded component of Denmark's pension framework, designed to provide retirees with a guaranteed lifelong financial benefit. ATP complements the public old-age pension, and a significant proportion of pensioners depend exclusively on these two sources for their retirement income. The amount received from ATP pension is contingent upon the individual's total contributions made throughout life. The timing of these contributions influences the pension amount; earlier contributions yield higher pensions. To attain the maximum pension (DKK 27,300 yearly in 2023 for those reaching the retirement age at 67), one must have made full contributions from the age of 18 until reaching the statutory retirement age. Payouts from ATP commence only upon reaching the official retirement age, and early withdrawals, even under circumstances like early retirement, disability, or relocation outside Denmark, are not permitted.

Compulsory pension contribution scheme for benefit recipients

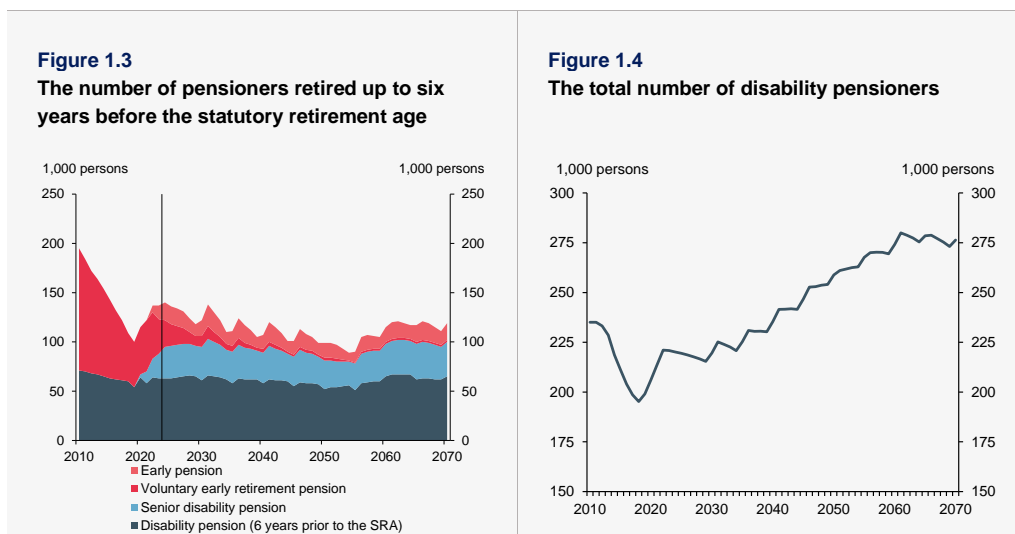
An additional compulsory funded pension scheme for benefit recipients, *OP (Obligatorisk Pension for overførselsmodtagere)* was introduced in 2020. The pension is managed by the ATP fund and payouts from ATP will also include contributions made through OP. In 2020, 0.3 per cent of most public transfers (e.g. unemployment and social assistance benefits) are paid into an individual pension savings scheme. The contribution rate is increased yearly by 0.3 percentage point until it reaches 3.3 per cent in 2030. The scheme is financed through a reform of the benefit uprating framework. Prior to 2020, 0.3 percentage point were deducted from the annual uprating of benefits to wage increases. The deduction was abolished, leaving current

incomes by benefit recipients unaffected by the introduction of compulsory pension saving.

Retirement before the statutory retirement age

For those individuals who, for a variety of reasons, need or wish to retire before the statutory retirement age, four distinct schemes are available. Each of these schemes is designed to accommodate different individual circumstances, offering tailored options for early retirement. These include two disability pension schemes – the standard disability pension and the senior disability pension – which are available for individuals whose health conditions impede their ability to continue working. Additionally, there are two early retirement programs: the voluntary early retirement pension (VERP) and the early pension scheme.

Figure 1.3 illustrates a projection of the four early retirement schemes from 2010 to 2070. The figure shows that the voluntary early retirement pension (VERP) sees a diminishing trend, with its numbers dwindling to negligible levels by the 2030-2040 period. Concurrently, the two new schemes, senior disability pension and early pension, is projected to increase in the number of individuals opting for either of these.



^{1/2}

Note: Voluntary early retirement and early pension are available up to three years prior to the statutory retirement age, while senior disability pension is available up to six years before. Standard disability pension can be obtained from the age of 40 and at younger ages in special circumstances. The upward trend in figure 1.4 mainly reflects the mechanical impact of increases in the statutory retirement age. Senior disability pensioners are excluded from figure 1.4.

Source: Danish Ministry of finance

Disability Pension

Individuals with a significant and lasting reduction in their work capacity may be eligible for a visitation-based disability pension. While receiving this pension, beneficiaries can still engage in work up to a specified limit. The pension amount is means-tested with respect to labour income and income from individual pension

schemes. As of January 2023, the partner's income is exempted from means-testing and no longer contributes to a downward adjustment.

The eligibility criteria for the disability pension are similar to those of the old-age pension. Specifically, for the disability pension, any decrease in the pension due to periods living outside of Denmark is determined by the years between the age of 15 and when the disability pension is granted. If the beneficiary has lived in Denmark for at least 80 per cent of this time, they receive the full disability pension. Otherwise, the pension is proportionally reduced.

Since the 2012 disability pension reform, the pension is primarily granted to those over 40 years of age, except in clear cases where the individual's ability to work is irreparably diminished. Individuals below 40 are typically enrolled in a "resource programme" designed to enhance their work potential. This scheme is separate from the disability pension, and therefore, its beneficiaries are not included in table 2 or the pension projections.

Senior Disability Pension

The senior disability pension is for individuals near the statutory retirement age and offers a fast-track with softer eligibility requirements compared to the standard disability pension. Benefits conditions are the same as in the standard disability scheme. This pension was enacted in December 2019, with the provision coming into effect from January 1st 2020. To be eligible for the Senior Disability Pension, several conditions must be met: the individual must be within 6 years of the statutory retirement age, have a prolonged association with the labour market amounting to a cumulative 20-25 years of employment, and have a permanently reduced work capacity of maximum 15 hours per week in the most recent job.

Voluntary Early Retirement Pension

The Voluntary Early Retirement Pension (VERP) is available for both employees and self-employed individuals who currently are between the ages of 63.5 and 67 and are members of both an unemployment insurance fund and the VERP scheme. To be eligible, one must have been a member of an unemployment insurance fund and have made contributions to the VERP scheme for a minimum of 30 years. Additionally, the initiation of membership and contributions should be no later than the age of 30.

Individuals in the VERP scheme can choose to accrue a tax-free bonus instead of transitioning to VERP. This bonus is paid out at the statutory retirement age. The bonus is gradually earned starting three years before the statutory retirement age, provided that the person has not transitioned to VERP before that time. The bonus is accrued in portions, with 481 hours of work, equivalent to 37 hours per week over three months, entitling the individual to one bonus portion. A total of 12 portions can be accrued, representing three years of full-time work, constituting the complete bonus for those who choose not to use their VERP option. According to

current regulations, each VERP bonus portion amounts to DKK 14,204 in 2023, allowing for a total tax-free VERP bonus of DKK 170,448 to be earned.

Monthly benefits in the VERP scheme corresponds to the full amount of unemployment insurance benefits. Deductions are made in the VERP benefits based on working hours and pension wealth. The calculated value is determined by taking 80 per cent of the payout value for pensions with a lifelong payout and 5 per cent of the deposit value for all other pensions at the VERP age. The VERP benefit is then reduced by an amount equivalent to 80 per cent of the annual calculated pension value. For instance, an individual with pension wealth of DKK 1 million will see a reduction of the monthly VERP benefit by approximately DKK 3,300 DKK, corresponding to about 17 per cent of the monthly benefit. VERP benefits are fully phased out at a calculated annual pension value of around DKK 290,000 in 2022, corresponding to pension wealth of approximately DKK 5.8 million.

Early pension

The early pension scheme allows individuals with significant tenure in the workforce to opt for retirement up to three years prior to the statutory retirement age. This scheme was enacted in December 2020, and since August 2021, citizens have been able to apply for early pension. Payouts to early pensioners began in January 2022.. Eligibility for early pension is anchored on the number of years an individual has been active in the labour market. This tenure starts from the age of 16 and continues up to 6 years before the statutory retirement age, with the age and duration criteria evolving in tandem with changes to the statutory retirement age. For instance, those aiming for early retirement in 2022, up to three years before the statutory retirement age, need to have a work record of 42, 43, or 44 years, respectively, by the age of 61. This work tenure includes periods of employment, self-employment, and certain public welfare benefits.

The level of benefits corresponds to the old-age public pension scheme, but with means-testing both against labour income and pension wealth. The early pension benefit is reduced by 64 per cent of annual labour income above DKK 24,700. If a calculated pension value exceeds DKK 102,900 annually, equivalent to pension wealth of approximately DKK 2 million, benefits are reduced. Early pension is fully phased out at a calculated pension value of DKK 264,880 DKK, corresponding to pension wealth of approximately DKK 5.3 million.

1.2 Recent reforms of the pension system included in the projections

Several pension and labour market reforms have been implemented since the AWG2021-projection. The major reforms include:

1. Increase of the statutory retirement age in 2035

In 2020, Parliament confirmed to increase the statutory retirement age from 68

years to 69 years from 2035 in line with the indexation rule to increases in life expectancy.³

2. A new right to early pension

As stated in section 1.1, the Danish Government adopted a new right to early pension for people who have entered the labour market early and have long labour market tenure. Benefit payouts started in January 2022.⁴

3. A new senior disability pension

As stated in the last *Country Fiche Denmark - 2020*, the Danish Government adopted a new right to senior disability pension for people six years or less before the statutory retirement age.⁵ Benefit payouts started in January 2020.

4. Removal of deduction in social pension due to partners labour income

From January 2023, old age-, early retirement- and disability pensioners receive their social pension independently of their partner's income.⁶ Prior to the reform, the social pension was deducted if one's partner had income above a certain level.

5. Removal of deduction in old age pension due to own labour income

From January 2023, the old age pension will no longer be deducted as a consequence of labour income as retired. The reform aimed to increase incentives to work more hours and to keep working as an old age pensioner.

6. Reform to improve incentives for pension saving (regulations related to the offsetting of income against certain social benefits)

The Danish Government has committed to submitting proposals for amending regulations related to the offsetting of income against certain social benefits, so that contributions to pension savings in the TTE system (*Aldersopsparing* - contributions taxed, returns taxed, benefits exempt) no longer result in offsetting at the time of contribution.⁷ By ruling out any risk of offsetting against social benefits, the reform aims to make it easier for pension funds to assist their members in pension saving planning and use the TTE scheme to a larger extent as envisaged.

³ <https://www.ft.dk/samling/20201/lovforslag/1105/index.htm>

⁴ L 104 - 2020-21 (oversigt): Forslag til lov om ændring af lov om social pension og forskellige andre love. (Indførelse af ret til tidlig pension). / Folketinget (ft.dk)

⁵ <https://www.ft.dk/samling/20191/lovforslag/167/index.htm>

⁶ L 170 - 2021-22 (oversigt): Forslag til lov om ændring af lov om social pension, lov om højeste, mellemste, forhøjet almindelig og almindelig førtidspension m.v. og lov om en aktiv beskæftigelsesindsats. (Afskaffelse af indtægtsregulering af folke-, senior- og førtidspension på grund af ægtefælles eller samlevers arbejdsindtægt, sikring mod frakendelse af førtidspension i en 3-årig periode m.v.). / Folketinget

⁷ Aftale mellem regeringen, Venstre, Socialistisk Folkeparti, Radikale Venstre, Enhedslisten og Det Konservative Folkeparti om: Etablering af en grøn fond (24. juni 2022) (fm.dk)

Boks 1.1**Ongoing reform discussion**

A recent publication from a commission on the Danish pension system has recommended the following reforms:

- The Pension Commission⁸ recommended a more lenient indexation of the statutory retirement age from 2045. Specifically, this would be achieved by adjusting the statutory retirement age based on the increase in life expectancy for individuals reaching the most recently adopted retirement age. This represents a moderation compared to the current system, where life expectancy is always calculated at the age of 60, and where improvements in life expectancy towards the end of one's working life consequently contribute to raising the statutory retirement age. With the new regulation, only improvements in life expectancy occurring from the most recently adopted retirement age can result in an increase in the age of retirement. The proposal also implies that only 80% of the increase should result in a higher statutory retirement age, compared to the current 100%.
- Compulsory pension saving for those with labour income or income from self-employment and no pension savings.
- Reforms of a number of supplementary benefits available for old-age pensioners only, including housing allowance, reduced property taxation, heating allowance and the media check.

Source: The Pension Commission⁹

1.3 Constant policy assumptions

The projections included in this ageing report for Denmark assumes 'constant policy', meaning that only reforms that has been adopted by Parliament is included in the projections including the reforms mentioned above.

In the projections, the statutory retirement age increases according to the indexation rule decided in the *Welfare Agreement - 2006* and the *Retirement Reform – 2011*. The next decision concerning the indexation mechanism is before the end of 2025 where Parliament is expected to confirm the statutory retirement age to be increased to 70 years from 2040. The politically agreed upon mechanism is therefore the basis of the Danish projections – as it is also the case in the yearly Convergence Programmes etc. This issue has been discussed in previous projections rounds and it was agreed to project the increases according to the indexation rule. However, regarding the employment rate AWG/EPC relies on different assumptions, compared to the official Danish projections, concerning the impact of life expectancy improvements and the increases in the statutory retirement age on the projected employment rate for older age groups.

⁸ <https://bm.dk/media/20703/fremtidssikring-af-et-staerkt-pensionssystem.pdf>

⁹ <https://bm.dk/media/20703/fremtidssikring-af-et-staerkt-pensionssystem.pdf>

Overview of the Demographic Labour Force Projections

2. Overview of the Demographic and Labour Force Projections¹⁰

2.1 Demographic developments

The population in Denmark is expected to increase from 5.9 million inhabitants in 2022 to 6.2 million in 2070, *cf. table 2.1*. Furthermore, the old-age dependency ratio (pop 65+ / pop 20-64) is projected to increase from 35.4 in 2022 to 56.5 in 2070, which – all else equal – will lead to higher expenditures on public pensions.

Life expectancy at age 60 is also included in *table 2.1*. since the statutory retirement age is linked to this number, *cf. Box 1.1*. Life expectancy at 60 increases by 5 years for men and women in the period 2022-2070.

Net migration is projected to stay positive throughout the entire projection period.

Table 2.1
Main demographic variables

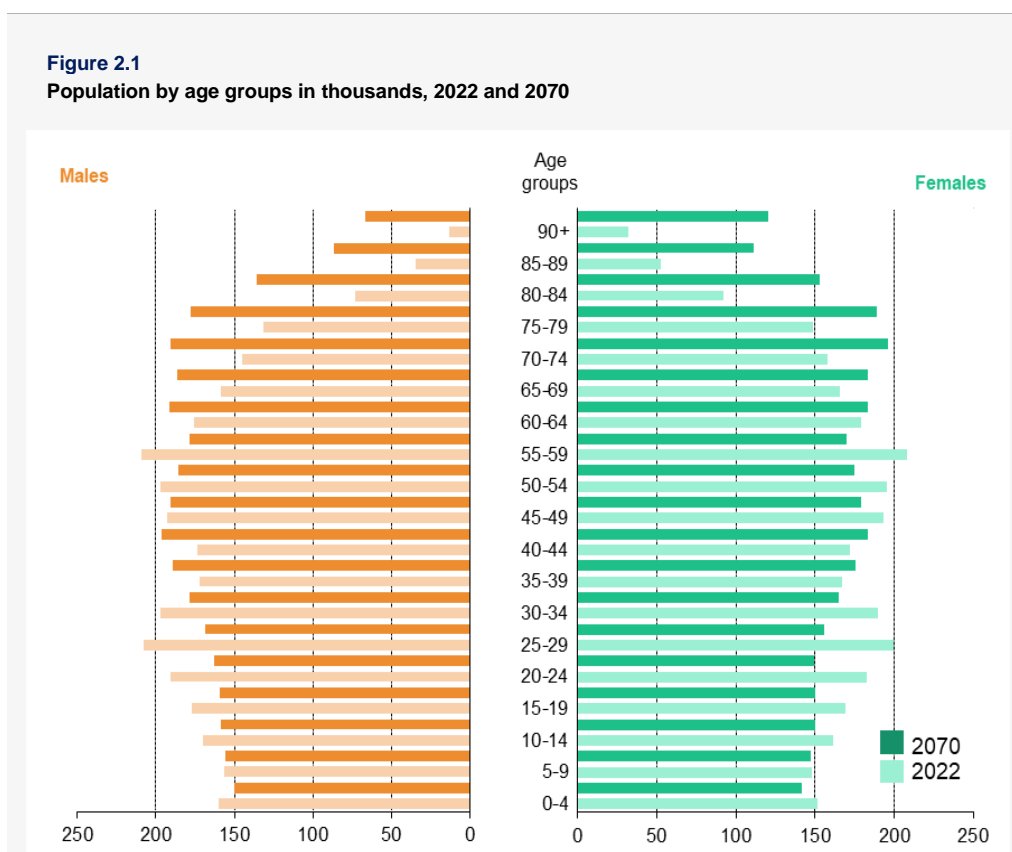
	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Population (thousand)	5,901	6,066	6,142	6,150	6,165	6,187	6,187	2070	286
Population growth rate	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.8%	2022	-0.7%
Old-age dependency ratio (pop 65+ / pop 20-64)	35.4	40.0	45.9	46.4	50.9	56.5	56.5	2070	21.1
Old-age dependency ratio (pop 75+ / pop 20-74)	14.3	16.8	19.9	22.9	23.0	26.4	26.4	2070	12.1
Ageing of the aged (pop 80+ / pop 65+)	24.8	31.1	32.2	38.4	38.5	37.5	39.8	2055	12.8
Men - Life expectancy at birth	79.9	80.9	82.4	83.8	85.1	86.4	86.4	2070	6.5
Women - Life expectancy at birth	83.6	84.9	86.3	87.7	88.9	90.1	90.1	2070	6.5
Men - Life expectancy at 65	18.7	19.5	20.5	21.5	22.5	23.4	23.4	2070	4.7
Men - Life expectancy at 60	22.4	23.6	24.7	25.9	26.9	27.7	27.7	2070	5.3
Women - Life expectancy at 65	21.3	22.3	23.4	24.5	25.5	26.5	26.5	2070	5.2
Women - Life expectancy at 60	25.6	26.6	27.9	29.0	30.1	31.1	31.1	2070	5.5
Men - Survivor rate at 65+	88.2	89.2	90.9	92.2	93.4	94.3	94.3	2070	6.1

¹⁰ For more details, see European Commission and EPC (2023), '[2024 Ageing Report: Underlying assumptions and projection methodologies](#)', European Economy, Institutional Paper 257.

Women - Survivor rate at 65+	92.4	93.2	94.3	95.1	95.9	96.5	96.5	2070	4.1
Men - Survivor rate at 80+	59.5	63.0	67.8	72.1	75.9	79.2	79.2	2070	19.7
Women - Survivor rate at 80+	71.1	74.4	78.4	81.8	84.7	87.2	87.2	2070	16.1
Net migration (thousand)	55.1	12.4	12.5	12.4	14.4	13.3	55.1	2022	-41.8
Net migration (% population previous year)	0.9%	0.2%	0.2%	0.2%	0.2%	0.2%	0.9%	2022	-0.7%

Source: Eurostat, European Commission (Europop 2023).

Figure 2.1 shows the development in the population pyramid from 2022 to 2070. As in other member states, a larger share of the population in 2070 is expected to be in older cohorts compared to 2022.



Source: Eurostat, European Commission (Europop 2023).

2.2 Labour force projections

Labour force participation rates (LFPR) are projected to increase for older workers, among others due to the increase in the retirement ages described in *part 1*.

For people aged 55-64, the LFPR is projected to increase from 75.5 per cent in 2022 to 86.6 per cent in 2070, *cf. table 2.2*.

For people aged 65-74, the LFPR has a much lower starting point at 16.3 per cent, mainly reflecting the current statutory retirement age of 67 years. As the statutory retirement age is expected to increase to 74 in 2070, the LFPR in this age group is projected to increase to 35.9 per cent in 2070.

Table 2.2
Participation rate, employment rate and share of workers

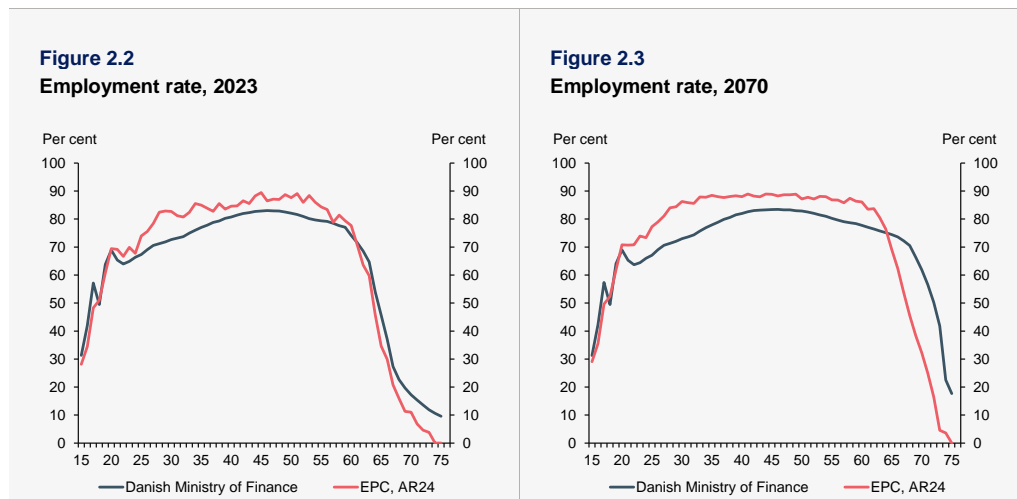
	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Labour force participation rate 20-64	83.6	84.6	86.0	86.6	87.5	88.0	88.0	2070	4.4
Employment rate of workers aged 20-64	80.2	81.5	82.9	83.5	84.3	84.8	84.8	2070	4.6
Share of workers aged 20-64 in the labour force 20-64	95.9	96.3	96.4	96.4	96.4	96.4	96.4	2043	0.5
Labour force participation rate 20-74	73.1	73.3	74.6	77.1	77.7	78.0	78.0	2070	4.9
Employment rate of workers aged 20-74	70.1	70.6	71.9	74.4	74.9	75.2	75.2	2070	5.0
Share of workers aged 20-74 in the labour force 20-74	95.9	96.3	96.4	96.4	96.4	96.4	96.5	2043	0.5
Labour force participation rate 55-64	75.5	76.7	79.1	81.8	84.9	86.6	86.6	2070	11.1
Employment rate of workers aged 55-64	73.3	74.6	76.9	79.6	82.6	84.3	84.3	2070	11.0
Share of workers aged 55-64 in the labour force 55-64	97.0	97.3	97.3	97.3	97.3	97.3	97.3	2032	0.2
Labour force participation rate 65-74	16.3	16.1	22.2	27.0	34.5	35.9	35.9	2070	19.6
Employment rate of workers aged 65-74	15.6	15.6	21.5	26.1	33.4	34.7	34.7	2070	19.0
Share of workers aged 65-74 in the labour force 65-74	95.6	96.8	96.6	96.8	96.8	96.5	97.3	2025	1.0
Median age of the labour force	41.0	40.0	41.0	42.0	43.0	43.0	43.0	2054	2.0

Source: European Commission, EPC.

For the age groups above 60 years, the development of employment rates differ significantly between national projections from the Danish Ministry of Finance and the AWG/EPC projections, *cf. figure 2.2 and 2.3*.

This indicates that the AWG/EPC relies on different assumptions regarding the impact of improvements in life expectancy and the increases in the statutory retirement age on the projected employment rate of older age groups, reflecting the harmonized assumptions used for the Ageing Report. In 2070, the statutory retirement age in Denmark is expected to be 74 years. The EPC projects an employment rate

of 3.6 per cent for individuals age 74, contrasting with 22.5 per cent in the projection by the Danish Ministry of Finance.



Note: The employment rate from the Ministry of Finance is from register-based sources, while the employment rate from EPC is based on cross-country comparable Labour Force Surveys.

Source: Danish Ministry of Finance.

Due to pension reforms, the AWG/EPC projects the average effective exit age to increase by 3.7 years for men from 2022-2070 and by 4.4 years for women, *cf. table 2.3*.

However, this projected increase in the average effective exit age is substantially smaller than the expected increase in the statutory retirement age, which increases from 67 years in 2023 to 74 years in 2070, an increase of 7 years, *cf. table 1.1*.

Table 2.3a
Effective labour market behaviour – men

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	65.3								
Average labour market exit age (CSM)**	65.3	65.8	66.9	67.8	68.6	69.0	69.0	2070	3.7
Contributory period									
Duration of retirement***	16.4	18.7	18.9	19.0	19.1	20.0	20.0	2070	3.6
Duration of retirement/contributory period									
Percentage of adult life spent in retirement****	26%	29%	29%	28%	28%	29%	30%	2027	3%
Early/late exit*****	1.3	2.8	3.5	6.0	7.6	15.8	15.8	2070	14.6

* The 'average effective retirement age' is the age at which people start receiving a pension benefit (old-age, early or disability). It is calculated on the basis of the administrative data on new pensioners for 2022, showing projected data for the other years for the total.

** 'Average labour market exit age (Cohort Simulation Model)' refers to 2023 instead of 2022.

*** 'Duration of retirement' is the remaining life expectancy at the average labour market exit age.

**** The 'percentage of adult life spent in retirement' is calculated as the ratio between the duration of retirement and the life expectancy minus 20 years.

***** 'Early/late exit' is the ratio between those who exit the labour market before reaching the statutory retirement age and those who exit at or beyond the statutory retirement age. For 2022, the value refers to 2023.

Source: European Commission, EPC.

Table 2.3b
Effective labour market behaviour – women

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	63.6								
Average labour market exit age (CSM)**	64.5	65.4	66.6	67.5	68.4	69.0	69.0	2070	4.4
Contributory period									
Duration of retirement***	21.3	22.3	21.7	21.9	22.8	22.8	22.9	2061	1.5
Duration of retirement/contributory period									
Percentage of adult life spent in retirement****	32%	33%	32%	32%	32%	32%	33%	2030	0%
Early/late exit*****	2.8	3.5	3.6	5.3	9.5	26.8	26.8	2070	24.1

* The 'average effective retirement age' is the age at which people start receiving a pension benefit (old-age, early or disability). It is calculated on the basis of the administrative data on new pensioners for 2022, showing projected data for the other years for the total.

** 'Average labour market exit age (Cohort Simulation Model)' refers to 2023 instead of 2022.

*** 'Duration of retirement' is the remaining life expectancy at the average labour market exit age.

**** The 'percentage of adult life spent in retirement' is calculated as the ratio between the duration of retirement and the life expectancy minus 20 years.

***** 'Early/late exit' is the ratio between those who exit the labour market before reaching the statutory retirement age and those who exit at or beyond the statutory retirement age. For 2022, the value refers to 2023.

Source: European Commission, EPC..

Pension Projection Results

3. Pension Projection Results

3.1 Coverage of the pension projections

The pension projections include all pension schemes: old-age pension, disability pension, civil servant pension, VERP, and the newly introduced early pension and senior disability pension, along with ATP including the compulsory pension contribution scheme, LD-schemes, occupational, and private labour market schemes.

3.2 Overview of the projection results

Table 3.1 outlines the projected shifts in pension expenditures up to the year 2070, signaling a substantial adjustment in both public and private pensions. Public pension spending is predicted to decrease from 8.3 per cent of GDP to 6.8 per cent, a drop of 1.4 percentage points, despite an interim rise peaking in 2029. In contrast, expenditures on private occupational pensions are projected to increase by 2.3 percentage points, culminating at 6.3 per cent of GDP by 2070. Overall this reflects the gradual maturing of the funded occupational pension system.

Further examination, as presented in Table 3.2, reveals the composition of this shift in public pension spending. The overall reduction in public pensions is largely due to a 1.7 percentage point decline in old-age and early pensions. Specifically, the flat-rate portion of these pensions is set to decrease by 0.7 percentage points, and earnings-related public pensions are slated to fall by 1 percentage point. The latter's decline is attributed to the limited number of civil servants, with most public employees being directed to occupational pension schemes. Non-contributory minimum pensions are also expected to fall by 0.5 percentage points. On the other hand, disability pensions are anticipated to see a slight increase of 0.3 percentage points by 2070.

While the total gross pension expenditures are projected to see a small rise of 0.8 percentage point, net public pension expenditures are forecasted to see a significant reduction, decreasing by 2.4 percentage points by 2070 relative to the base year.

The growth in expenditures from 2022 to 2030 is attributed to several factors. Initially, a demographic shift with large cohorts approaching retirement will drive up costs. Additionally, a disparity between wage growth and worker productivity will result in higher expenditures relative to GDP. The reason being that pension benefits are adjusted annually by a percentage that reflects wage growth two years prior. This trend is detailed in Figure 3.4.

Post-2030, the demographic bulge is expected to shrink, leading to reduced expenditures, as indicated in Figure 3.3. Furthermore, the incremental rise in the statutory retirement age, as detailed in chapter 1, will contribute to the downward trend in

spending. This is illustrated in Figure 3.2, where the divergence between expenditures and the ratio of pensioners to employees is evident. The ratio remains relatively stable, with a slight decline post-2045, helping to keep expenditures in check.

Tax revenue from private pensions is projected to increase, fuelled by higher benefit payouts and growing average pension wealth, with expected tax revenues from private pensions rising to 2.7 per cent of GDP by 2070. This includes income tax on benefit payments and taxes on pension fund returns.

In summary, the public pension system's fiscal balance is expected to strengthen, improving by 1.6 percentage points of GDP by 2070.

Table 3.1
Projected gross and net pension spending and contributions

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Per cent of GDP									
<i>Expenditure</i>									
Gross public pension expenditure	8.3	9.3	8.8	7.8	6.9	6.8	9.3	2029	-1.4
Private occupational pensions	4.0	3.9	4.6	5.2	5.7	6.3	6.3	2070	2.3
Gross total pension expenditure	12.3	13.2	13.4	13.0	12.6	13.1	13.5	2038	0.8
Net public pension expenditure*	4.9	5.1	4.5	3.5	2.6	2.5	5.1	2028	-2.4
Net total pension expenditure*	8.9	9.0	9.1	8.7	8.4	8.8	9.1	2037	-0.1
<i>Contributions</i>									
Public pension contributions	0.1	0.0	0.0	0.0	0.0	0.0	0.1	2022	0.0
Total pension contributions	6.0	6.1	6.0	5.8	5.6	5.4	6.1	2024	-0.6
Balance of the public pension system (%GDP)**	-8.2%	-9.2%	-8.8%	-7.8%	-6.8%	-6.8%	-9.2%	2029	1.4%

* Net pension expenditure excludes taxes on pensions and compulsory social security contributions paid by beneficiaries.

** Public pension contributions - gross public pension expenditure (peak value/year shows most negative value).

Source: European Commission, EPC.

Table 3.2
Projected gross public pension spending by scheme

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Per cent of GDP									
Total public pensions	8.3	9.3	8.8	7.8	6.9	6.8	9.3	2029	-1.4
of which									
Old-age and early pensions	6.5	7.3	6.8	5.7	4.8	4.8	7.3	2029	-1.7
<i>Flat component</i>	5.4	6.2	6.1	5.4	4.6	4.7	6.4	2034	-0.7
<i>Earnings-related</i>	1.1	1.1	0.7	0.3	0.2	0.1	1.1	2024	-1.0
<i>Minimum pensions (non-contributory)</i>	5.1	6.1	6.0	5.3	4.6	4.6	6.3	2034	-0.5
Disability pensions	1.8	2.0	2.0	2.1	2.1	2.1	2.1	2061	0.3

Source: European Commission, EPC.

Figure 3.1
Public pension expenditures, by scheme

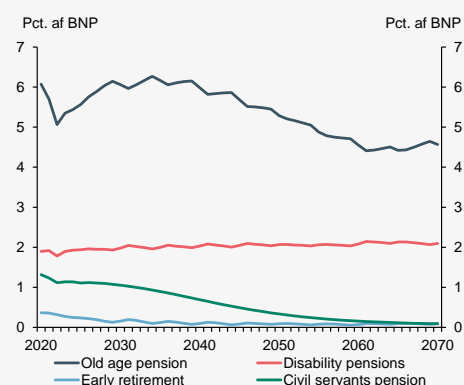
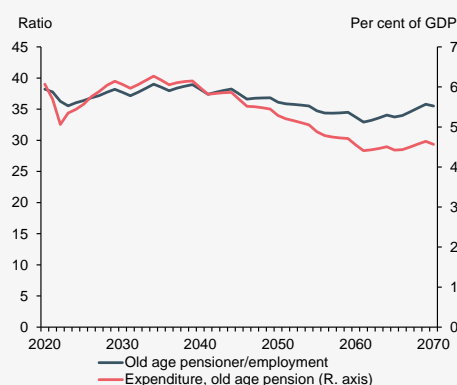
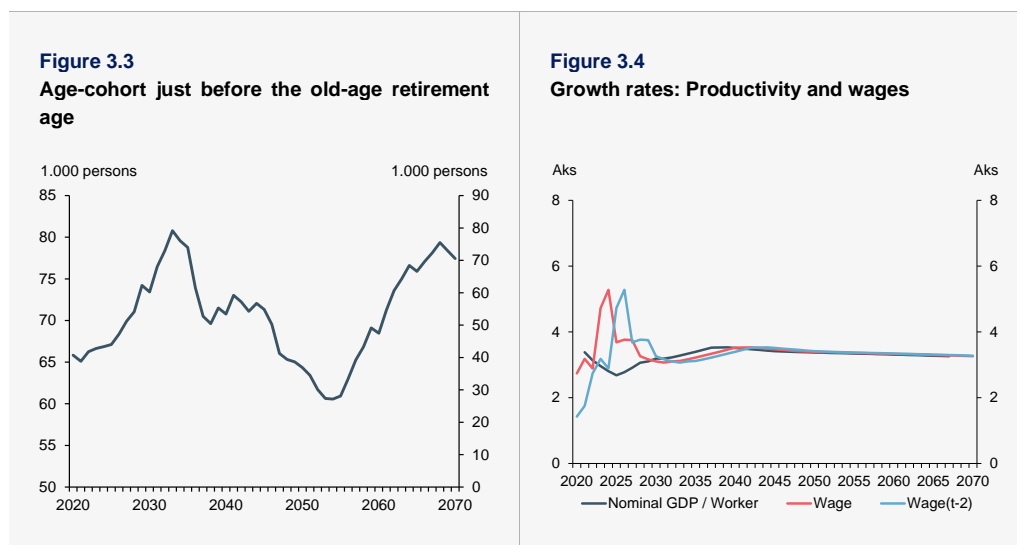


Figure 3.2
Old-age pension expenditures and ratio of old-age pensioners to employment



Note: Early retirement consists of the VERP-scheme and the early pension scheme. The disability pension consists of the disability pension scheme and senior disability scheme.

Source: European Commission, EPC.



Source: European Commission, EPC.

3.3 Description of main driving forces behind the projection results and their implications

The evolution of public pension expenditures from 2022 to 2070, as depicted in Table 3.3, reveals a nuanced picture of the factors influencing changes in expenditures. This table provides a breakdown of the various elements contributing to the overall change in public pension spending as a percentage of GDP, which is expected to decrease by 1.4 percentage points over the period. The effects reported in table 3.3 is based on the following disaggregation:

$$\frac{\text{pension expenditure}}{\text{GDP}} = \overset{\text{dependency ratio}}{\downarrow} \frac{\text{population } 65+}{\text{population } 20-64} \times \overset{\text{coverage ratio}}{\downarrow} \frac{\text{number of pensioners}}{\text{population } 65+} \times \overset{\text{benefit ratio}}{\downarrow} \frac{\text{average pension income}}{\frac{\text{GDP}}{\text{hours worked } 20-74}} \times \overset{\text{labour market effect}}{\downarrow} \frac{\text{population } 20-64}{\text{hours worked } 20-74} \quad [1]$$

$$\frac{\text{number of pensioners}}{\text{population } 65+} = \overset{\text{coverage ratio old-age}}{\downarrow} \frac{\text{number of pensioners } 65+}{\text{population } 65+} + \overset{\text{coverage ratio early-age}}{\downarrow} \left(\frac{\text{number of pensioners } \leq 65}{\text{population } 50-64} \times \overset{\text{cohort effect}}{\downarrow} \frac{\text{population } 50-64}{\text{population } 65+} \right) \quad [2]$$

$$\frac{\text{population } 20-64}{\text{hours worked } 20-74} = \overset{1/\text{employment rate}}{\downarrow} \frac{\text{population } 20-64}{\text{employed people } 20-64} \times \overset{1/\text{labour intensity}}{\downarrow} \frac{\text{employed people } 20-64}{\text{hours worked by people } 20-64} \times \overset{1/\text{career shift}}{\downarrow} \frac{\text{hours worked by people } 20-64}{\text{hours worked by people } 20-74} \quad [3]$$

The decrease in expenditures is primarily influenced by two key factors.

Maturation of the Savings-Based System: As private pension schemes mature and the income from these pensions grows, there will be a corresponding reduction in the public old-age pension benefits. This is because the system is designed to balance public and private provisions, ensuring that the increase in private pension income leads to a decrease in public pension benefits.

The maturation of the savings-based system is also reflected in the benefit ratio effect, which measures changes in the average amount of pension benefits relative to wages. The benefit ratio effect is expected to contribute by a 1.4 percentage point reduction.

Indexation of the Public Pension Age: This aspect mechanically reduces the target group for public pensions driving down expenditures. The effect of indexation can be seen through the interplay with the dependency ratio- and coverage ratio effect. While the dependency ratio is projected to add 4.0 percentage points to the GDP ratio this pressure is largely offset by a 2.7 percentage point reduction due to the coverage ratio effect. This effect encompasses a 2.3 percentage point decrease from the old-age coverage ratio and a 1.5 percentage point decrease from the early-age coverage ratio. The cohort effect, which accounts for the changing size and characteristics of the pension-receiving population, will further reduce expenditures by 3.6 percentage points.

Table 3.3
Factors behind the change in public pension expenditures between 2022 and 2070 – pensioners

	2022-30	2030-40	2040-50	2050-60	2060-70	2022-70
Percentage points of GDP						
Public pensions to GDP	1.0	-0.4	-1.0	-0.9	0.0	-1.4
Dependency ratio effect	1.1	1.3	0.1	0.7	0.7	4.0
Coverage ratio effect*	-0.6	-0.8	-0.3	-0.8	-0.3	-2.7
<i>Coverage ratio old-age</i>	-0.3	-0.7	-0.3	-0.8	-0.2	-2.3
<i>Coverage ratio early-age</i>	-0.8	0.0	-0.8	-0.2	0.2	-1.5
<i>Cohort effect</i>	-1.2	-1.6	0.9	-0.7	-1.0	-3.6
Benefit ratio effect	0.6	-0.6	-0.8	-0.5	-0.4	-1.6
Labour market effect	-0.1	-0.3	-0.1	-0.3	-0.1	-0.9
<i>Employment ratio effect</i>	-0.1	-0.2	-0.1	-0.1	0.0	-0.5
<i>Labour intensity effect</i>	0.0	0.0	0.0	0.0	0.0	0.0
<i>Career shift effect</i>	0.0	-0.2	0.0	-0.2	0.0	-0.5
Residual	0.0	-0.1	0.0	0.0	0.0	-0.2

Note: * Subcomponents of the coverage ratio effect do not add up necessarily.

Source: European Commission, EPC.

Table 3.4 reports projected replacement rate at retirement and coverage by pension schemes. The public pension schemes benefit ratio is projected to decrease from 41 per cent to 30 per cent over the period from 2022 to 2070, is affected by a higher growth rate in GDP per hour for the 20-74 year olds compared with the growth rate in income at retirement.

Besides the drop in public scheme benefit ratio, the earnings-related civil servants scheme sees a 14-percentage point decrease in the benefit ratio, with coverage slightly decreasing by 4 percentage points. The number of recipients of civil servant pensions is expected to decline significantly by 2070. Since these pensions are typically higher, their reduction will lower the average benefit ratio. This trend is due to changes in public employment practices, with fewer individuals being hired under civil servant terms and more being covered by occupational pension schemes.

Although the public benefit ratio is declining the private occupational schemes are expected to see a benefit ratio increase of 10 percentage points. As a result, there is a net effect close to zero. The increase in the benefit ratio for private schemes reflects the maturation of the savings-based system.

Overall, the total benefit ratio is projected to decrease by 4 percentage points.

Besides benefit ratios, the replacement rate, which is typically lower than the benefit ratio due to higher wages at retirement, will evolve in tandem with the benefit ratio. The projection assumes uniformity in benefits for new and existing pensioners within the same scheme.

It is noteworthy that the majority of wage earners contribute to occupational schemes. However, the pension model for these schemes does not track individual contributions but rather aggregates cohort contributions, wealth, and benefits. Consequently, the model's capacity to accurately calculate the coverage ratio for occupational and private schemes is limited. For a more comprehensive analysis, refer to part 4 of the report. Hence, the benefit ratio for occupational schemes is inferred from the number of old-age pension recipients.

Table 3.4
Replacement rate at retirement (RR) and coverage by pension scheme

	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Per cent							
Public scheme (BR)	41	40	38	34	32	30	-11
<i>Coverage</i>	100	100	100	100	100	100	0
Public scheme: old-age earnings related (BR)	39	38	35	32	28	27	-13
Public scheme: old-age earnings related (RR)	29	30	29	27	25	24	-6
<i>Coverage</i>	82	82	82	80	78	78	-4
Private occupational scheme (BR)	25	21	24	29	35	36	10
Private occupational scheme (RR)	:	:	:	:	:	:	:
<i>Coverage</i>	78	80	80	79	77	77	-1
Total benefit ratio	61	57	57	57	58	58	-3
Total replacement rate (earnings-related benefits)	56	53	53	53	53	53	-4

Source: European Commission, EPC.

It should be noted that the differences in projections of employment rates at older ages between the AWG/EPC and the Danish Ministry of Finance also influences replacement rates, cf. above. In national projections total replacement rates are expected to increase, reflecting the maturing of the savings-based occupational pension system and increases in statutory retirement ages.

Dependency ratios

The number of pensioners is about 1.3 million in 2022 and is projected to increase to 1.4 million in 2070. The number of pensioners peaks around 2040 which result in an increase in the Pension System Dependency Ratio (SDR) until 2040, cf. table 3.5. Employment is projected to increase until 2060, so the SDR decreases from 2040-2060. After 2060, the SDR decreases, as the number of pensioners increases more than employment.

Table 3.5
System dependency ratio and old-age dependency ratio

	2022	2030	2040	2050	2060	2070	change 2022-2070
Number of pensioners (thousand) (I)	1,340	1,420	1,450	1,436	1,386	1,432	92
Employment (thousand) (II)	2,982	3,028	3,055	3,127	3,162	3,099	117
Pension system dependency ratio (SDR) (I)/(II)	45%	47%	47%	46%	44%	46%	1%
Number of people aged 65+ (thousand) (III)	1,205	1,363	1,521	1,557	1,673	1,797	592
Working-age population 20-64 (thousand) (IV)	3,402	3,406	3,313	3,358	3,287	3,178	-224
Old-age dependency ratio (OADR) (III)/(IV)	35%	40%	46%	46%	51%	57%	21%
System efficiency (SDR/OADR)	127%	117%	103%	99%	86%	82%	-45%

Source: European Commission, EPC.

For the age groups 65-69, the total number of pensioners as a share of the population is close to 75 per cent in 2022, *cf. table 3.5 and 3.6*. However, the share declines in the projections period, as the statutory retirement age increases. In 2070, the statutory retirement age is projected to 74, so it is not possible for this age group to receive old-age pension. Furthermore, the early retirement age is 71 years, so no one in the age group could be eligible. Public pensioners therefore only encompasses disability-based pensions.

Table 3.6
Public pensioners to (inactive) population by age group

	2022	2030	2040	2050	2060	2070
Per cent						
Pensioners / inactive population						
Age group -54	6.8	6.7	7.2	7.4	7.1	7.1
Age group 55-59	70.5	74.1	70.0	73.8	88.5	92.6
Age group 60-64	65.0	48.9	51.3	58.7	68.0	81.4
Age group 65-69	100.0	84.8	54.4	41.9	35.4	35.7
Age group 70-74	104.7	102.7	102.8	89.4	74.2	54.3
Age group 75+	99.6	99.6	99.4	99.1	98.8	98.2
Pensioners / total population						
Age group -54	2.6	2.5	2.7	2.7	2.6	2.6
Age group 55-59	11.1	10.6	10.9	10.3	10.1	10.2
Age group 60-64	22.5	15.8	13.3	13.6	12.6	12.6
Age group 65-69	75.0	63.2	33.8	23.4	17.5	15.9
Age group 70-74	97.4	97.8	96.6	80.2	62.5	45.0
Age group 75+	99.6	99.6	99.4	99.1	98.8	98.2

Note: Public pensioners include all pension schemes.
Source: European Commission, EPC.

The ratio of pensioners to inactive population is lower for the age group 65-69 than for the age group 60-64 from 2050 and onwards. This reflects that there are more inactive people in the age group 65-69 compared to the age group 60-64, which again reflects a lower participation rate for the age group 65-69. Compared to the total population, there are more pensioners in the age group 65-69 compared to ages 60-64 throughout the projection period.

For the age group 60-64, the ratio of pensioners to inactive population declines until 2030, due to fewer people on VERP, as the early retirement age reaches 65 years in 2027. From around 2040, the ratio increases slightly, which is due to a higher ratio of people on disability pension. This mainly reflects a higher participation rate as the ratio of pensioners to population is approximately constant from 2030 to 2060.

The tables for female pensioners to inactive population and for female pensioners resemble the corresponding tables for all pensioners, *cf. table 3.7*.

Tabel 3.7
Female public pensioners to (inactive) population by age group

	2022	2030	2040	2050	2060	2070
Per cent						
Female pensioners / inactive population						
Age group -54	6.8	6.6	7.0	7.1	6.7	6.7
Age group 55-59	69.6	71.8	64.5	73.8	89.6	94.8
Age group 60-64	64.4	51.2	52.9	57.4	73.4	84.4
Age group 65-69	97.7	85.1	56.9	44.7	39.6	41.0
Age group 70-74	100.2	103.2	104.1	89.6	74.2	56.3
Age group 75+	99.8	99.7	99.6	99.3	99.0	98.6
Female pensioners / total population						
Age group -54	2.6	2.5	2.7	2.6	2.5	2.5
Age group 55-59	12.5	12.1	12.3	11.5	11.2	11.4
Age group 60-64	26.2	17.8	15.3	15.4	14.2	14.3
Age group 65-69	81.4	65.7	35.6	25.9	20.0	18.3
Age group 70-74	98.8	98.9	98.1	81.7	64.1	47.0
Age group 75+	99.8	99.7	99.6	99.3	99.0	98.6

Source: European Commission, EPC.

3.4 Financing of the pension system

The public pension system operates on a pay-as-you-go (PAYG) model. Old-age, disability pensions and early retirement schemes are all funded through general taxation. Eligibility for the Voluntary Early Retirement Pension (VERP) requires 30 years of contributions, *cf. above*. Consequently, the public contributions detailed in table 3.8 pertain exclusively to the VERP scheme. Post the 2011 VERP reform, which was part of a broader Retirement Reform, there has been a notable shift away from the scheme, with the number of contributors to VERP expected to decline substantially until 2050.

Table 3.8
Revenue from contribution and number of contributors in the public scheme

	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Per cent of GDP							
Public pension contributions	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Employer contributions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Employee contributions	0.1	0.0	0.0	0.0	0.0	0.0	0.0
State contribution*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other revenues*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,000 persons							
Number of contributors (I)	254	145	113	103	106	106	-148
Employment (II)	2,982	3,028	3,055	3,127	3,162	3,099	117
Ratio (I) / (II)	0.085	0.048	0.037	0.033	0.033	0.034	-0.051

Note: * Includes only legislated contributions.
Source: European Commission, EPC.

3.5 Public pension funds

Public pension funds in Denmark are primarily composed of assets and reserves held within the ATP (*Arbejdsmarkedets Tillægspension*). ATP is a mandatory savings scheme where almost every individual in Denmark, regardless of employment status, contributes on a monthly basis¹¹. The ATP structure is detailed in Part 1 and in the annex of the report.

The projection of ATP's gross contributions is based on payments from the employed, benefit recipients, and contributions from benefit recipients to the compulsory pension scheme OP (*Obligatorisk Pension*). The level of contributions to ATP, excluding OP, are set in nominal amounts and only adjusted by discretionary decisions of the board of ATP.

Contributions are divided into guarantee contributions and bonus contributions. Guarantee contributions represent the cohort's accrued pension in ATP and are thus allocated funds. Bonus contributions, on the other hand, are unallocated funds that serve as a collective buffer.

¹¹ Note that ATP is classified outside of government following ESA2021, while in practice it is considered under pillar 1.

Within ATP, the guarantee contribution is further split into a market contribution and an interest contribution for individuals with more than 15 years until the statutory retirement age. The market contribution is invested with a higher risk profile than the interest contribution, and a risk reduction strategy is implemented as individuals approach the statutory retirement age.

ATP's liabilities consist of guaranteed pensions and a collective bonus potential. The guaranteed pensions are defined as the sum of contributions to date plus the present value of the cohort's expected survival-contingent payment stream until the expected statutory retirement age. The discount rate is calculated as a zero-coupon rate, and increases in the interest rate level directly affect the present value of the assets. Given the large increase of interest rates the actualized value of the liabilities will therefore decrease, which explains the significant drop in 2022.

ATP pensions are disbursed when the cohort reaches the statutory retirement age. Table 3.9, shows public pension assets and reserves as a percentage of GDP and the return on assets over time. From 2012 to 2021, the average stock of assets as a percentage of GDP was 35.7 per cent, but this is projected to decrease to 14 per cent by 2070, with an average of 17.7 per cent over the period from 2022 to 2070. It is worth noting that the current setup cannot handle the actualized value, which ATP assets should be reported in. In the long run, the nominal rate of return is assumed to stabilize at around 4 per cent annually, after a notable decline of 28 per cent in 2022.

Tabel 3.9
Public pension assets and reserves and return on assets

	average 2012- 2021	2022	2030	2040	2050	2060	2070	average 2022- 2070
Per cent GDP								
Stock of assets (end-of-year)	35,7	24,2	22,2	18,4	15,6	14,4	14,0	17,7
Million EUR								
Fund balance	36.273,7	-	1.605,1	2.029,6	3.432,6	5.280,6	6.529,5	
<i>Fund expenditure</i>	2.720,2	3.127,2	4.140,9	5.258,8	6.321,6	8.645,5		
<i>Disbursements (to pension scheme)</i>	2.401,4	2.917,3	3.870,6	4.922,8	5.903,4	8.141,9		
<i>Other expenditure (incl. administrative costs)</i>	318,9	209,9	270,3	336,0	418,2	503,6		
<i>Fund revenues</i>	33.553,5	-	4.732,3	6.170,5	8.691,4	11.602,2	15.175,1	
Return on assets	35.093,5	-	2.927,5	3.809,7	5.547,7	7.406,7	9.740,5	
Other income (incl. pension contributions)	1.540,1	1.804,8	2.360,8	3.143,7	4.195,5	5.434,6		
Change in asset valuation	-	-	-	-	-	-	-	
Per cent								
Nominal rate of return	6,4	27,8	2,9	3,2	4,0	4,0	4,0	2,9

Anm.: The assets of the pension fund is reported as the present value and are therefore significantly affected by increase in the interest rate in 2022.

Kilde: European Commission, EPC.

3.6 Sensitivity analysis¹²

The results from the sensitivity analysis are reported in table 3.10.

Table 3.10
Public and total pension expenditures under different scenarios (pps deviation from the baseline)

	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Public pension expenditure							
Baseline (per cent GDP)	8.3	9.3	8.8	7.8	6.9	6.8	-1.4
<i>Higher life expectancy at birth (+2y)</i>	0.0	0.0	0.1	0.2	0.2	0.2	0.2
<i>Higher migration (+33 per cent)</i>	0.0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
<i>Lower migration (-33 per cent)</i>	0.0	0.1	0.2	0.3	0.3	0.3	0.3
<i>Lower fertility (-20 per cent)</i>	0.0	0.0	0.0	0.2	0.4	0.5	0.5
<i>Higher inflation scenario (2 per cent by 2052)</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Higher employment rate of older workers (+10 pps)</i>	0.0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
<i>Higher productivity (TFP converges to 1 per cent)</i>	0.0	0.0	0.0	-0.1	-0.2	-0.4	-0.4
<i>Lower productivity (TFP converges to 0.6 per cent)</i>	0.0	0.0	0.1	0.3	0.5	0.7	0.7
<i>Policy scenario: constant retirement age</i>	0.0	0.2	0.9	1.1	1.7	2.0	2.0
Total pension expenditure							
Baseline (per cent of GDP)	12.3	13.2	13.4	13.0	12.6	13.1	0.8
<i>Higher life expectancy at birth (+2y)</i>	0.0	0.0	0.1	0.1	0.0	0.1	0.1
<i>Higher migration (+33 per cent)</i>	0.0	-0.1	-0.3	-0.5	-0.6	-0.6	-0.6
<i>Lower migration (-33 per cent)</i>	0.0	0.1	0.3	0.5	0.7	0.8	0.8
<i>Lower fertility (-20 per cent)</i>	0.0	0.0	0.0	0.3	0.6	1.0	1.0
<i>Higher inflation scenario (2 per cent by 2052)</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Higher employment rate of older workers (+10 pps)</i>	0.0	-0.2	-0.2	-0.1	-0.1	0.0	0.0
<i>Higher productivity (TFP converges to 1 per cent)</i>	0.0	0.0	0.0	-0.1	-0.4	-0.7	-0.7
<i>Lower productivity (TFP converges to 0.6 per cent)</i>	0.0	0.0	0.1	0.5	0.9	1.4	1.4
<i>Policy scenario: constant retirement age</i>	0.0	0.4	1.5	1.9	2.6	2.7	2.7

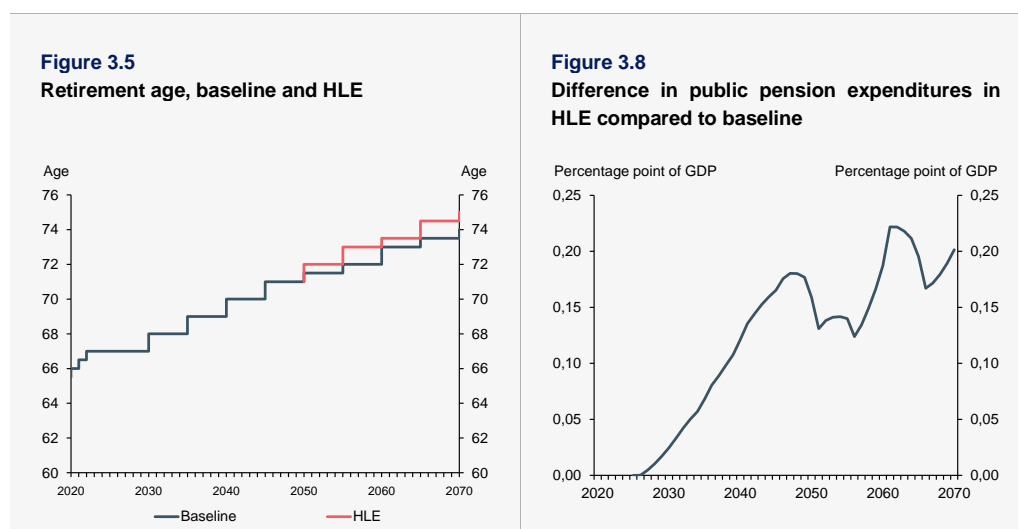
Source: European Commission, EPC.

¹² For more information on the design of the sensitivity scenarios, see Chapter 5 of Part I in European Commission and EPC (2023), *2024 Ageing Report: Underlying assumptions and projection methodologies*, European Economy, Institutional Paper 257.

Higher life expectancy

Higher life expectancy increases public pension expenditures with about 0.2 per cent of GDP in 2050 and until 2070. Higher life expectancy for 60-year-olds will have an effect on the retirement age due to the indexation rule. However, in accordance with the rules of the indexation mechanism for the statutory retirement ages, the maximum increase in the retirement age is 1 year every five years. The projected increases of the retirement ages in the baseline scenario is already capped by maximum increase of one year until 2045. Therefore, it is only from 2050-2070 that the retirement age is affected by a higher life expectancy, cf. figure 3.7.

The higher life expectancy results in an extended duration on public pension, particularly prior to the increase in the statutory retirement age. Additionally, with the higher statutory retirement age, there is an associated increase in the years on disability pension, leading to higher pension expenditures.



Note: The age-specific mortality rates are reduced linearly to achieve an additional increase in life expectancy at birth of two years by 2070 compared to the baseline.

Source: Dansih Ministry of Finance

Higher employment rate for older workers

A higher employment rate increases GDP, which lowers the public pension expenditures as a share of GDP. Moreover, with a higher employment rate for older workers pension wealth will increase and as a result drive down public expenditure indirectly.

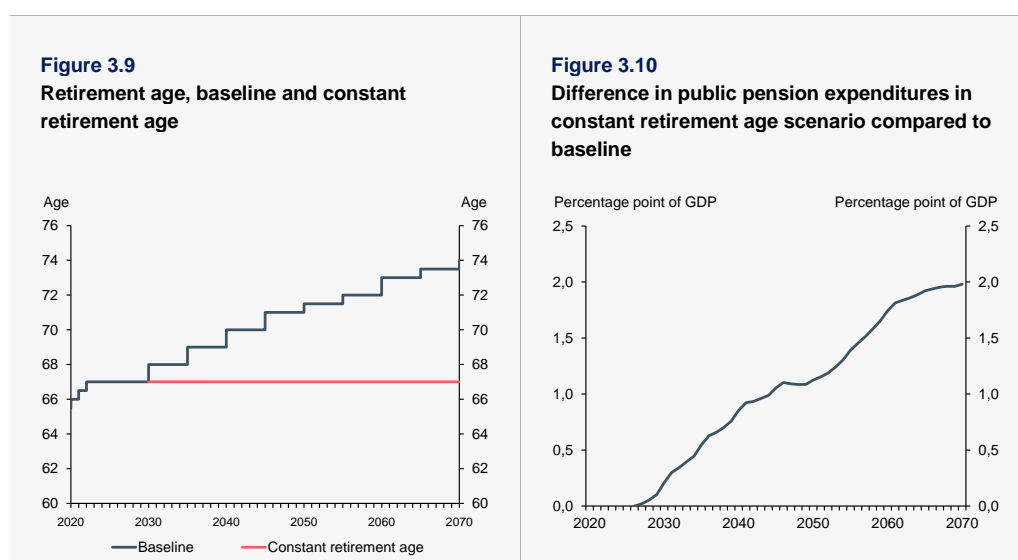
Higher and lower migration

Lower migration scenario results in higher expenditures than in the baseline scenario. The nominal expenditures decrease slightly due to a lower number of pensioners, but the lower inflow of migrants reduces labour supply and hence nominal GDP, thereby increasing the expenditures as a share of GDP. Vice versa for higher migration.

Constant statutory retirement age

The unchanged statutory retirement age scenario investigates the effect on pension expenditures if the Danish indexation mechanism of the early and statutory retirement age breaks down after 2023. The early retirement age is 64 years in 2023 and the statutory retirement age is 67 years in 2023 and will remain at this level in the breakdown scenario. In the baseline scenario the early retirement and statutory retirement age will increase to respectively 71 years and 74 years in 2070 *cf. figure 3.9.*

Public pension expenditures are projected to increase gradually with 2 per cent of GDP from 2022 to 2070 if the indexation mechanism is suspended from 2023, because the period individuals can claim public pensions is prolonged as life expectancy increases, *cf. figure 3.10.*



Source: Danish Ministry of Finance.

Lower fertility

Lower fertility scenario results in higher expenditures as a share of GDP than in the baseline scenario. The nominal expenditures remain constant, but the lower fertility reduces labour supply and hence nominal GDP, thereby increasing the expenditures as a share of GDP.

Higher inflation

Since public pensions are indexed in line with nominal wages (with a two-year lag), a change in inflation does not alter the results in any perceptible way.

3.7 Changes in comparison with previous Ageing Report Projections

Since the 2006-report, pension reforms have contributed to a lowering of the change in pension expenditures from +3.2 per cent of GDP for the period 2004-2050 in the 2006-report to -1.4 per cent of GDP in 2024 for the period 2022-2070, *cf. table 3.11*.

The change in public pension expenditures relative to GDP in different Ageing Reports are also affected by output and employment gaps in the starting year. If the employment gap is large and negative, the closing of this gap will – all else equal – lead to a decline in expenditures. The flipside of the coin is that expenditures are higher as a share of GDP in the starting year than would be the case if output and employment gaps were 0. This should be kept in mind when different versions of the Ageing Reports are compared across different projection periods.

Tabel 3.11

Overall change in public pension expenditure to GDP under consecutive projection exercises and different projection horizons (see period in paranteses)

	Public pension expenditure	Dependency ratio effect	Coverage ratio effect	Benefit ratio effect	Labour market effect	Residual (incl. interaction effect)
Change in percentage points						
2006 Ageing Report (2004-2050)	3.2	7.2	-2.8	-0.5	-0.4	-0.3
2009 Ageing Report (2007-2060)	0.1	6.5	-4.9	-0.5	-0.1	-0.7
2012 Ageing Report (2010-2060)	-1.1	5.7	-4.3	-1.2	-0.5	-0.8
2015 Ageing Report (2013-2060)	-3.1	3.6	-3.6	-2.0	-0.9	-0.2
2018 Ageing Report (2016-2070)	-1.9	4.6	-3.9	-1.6	-0.8	-0.2
2021 Ageing Report (2019-2070)	-2.0	4.0	-3.4	-1.7	-0.8	-0.2
2024 Ageing Report (2022-2070)	-1.4	4.0	-2.7	-1.6	-0.9	-0.2

Note: The disaggregation for 2006/2009/2012 is on the basis of the number of pensions; for the other vintages it is on the basis of pensioners.

The projection horizon has been extended over consecutive Ageing Reports, limiting comparability over time.

Source: European Commission, EPC.

Table 3.12 reports on the AR21 projections and contrast them with historic data for public pension expenditures. The table shows that the discrepancy between projected values and historic data is primarily driven by the assumptions used in the projections. Moreover, there is a minor effect from policies instantiated since the last report.

Table 3.12
Breakdown of the difference between the 2021 projections and outcome figures for the total public pension expenditures

	2019	2020	2021	2022
Per cent of GDP				
Ageing Report 2021 projections	9.3	9.7	9.2	9.0
Assumptions (pps of GDP)	0.2	-0.1	-0.1	-0.9
Coverage of projections (pps of GDP)				
Constant policy impact (pps of GDP)				
Policy-related impact (pps of GDP)	0.0	0.0	0.1	0.2
Actual public pension expenditure	9.4	9.7	9.2	8.3

Source: Commission Services and own calculations.

The AWG 2021-projections of public pension expenditure and the AWG 2024-projections are very similar, partly because there have been no major pension reforms in the period between AWG 2021 and AWG 2024. The Danish Government adopted a new right to early pension for people who have entered the labour market early and have long labour market experience and Senior disability pension implemented after AWG 2021 is included in the AWG 2024 projection, *cf. section 1.2*. Compared to the 2021 report, the public pension expenditures is about 0.5 percentage point lower in 2070.

Table 3.13
Breakdown of the difference between the 2021 and the new public pension projection

	2022	2030	2040	2050	2060	2070
Per cent of GDP						
Ageing Report 2021 projections	9.0	8.5	8.1	7.6	7.2	7.3
Change in assumptions (pps of GDP)	-0.9	0.4	0.4	-0.1	-0.6	-0.7
Improvement in the coverage or in the modelling (pps of GDP)						
Change in the interpretation of constant policy (pps of GDP)						
Policy-related changes (pps of GDP)	0.2	0.3	0.3	0.3	0.3	0.3
New projections	8.3	9.3	8.8	7.8	6.9	6.8

Source: Commission Services and own calculations.

Description of the Pension Projection Model and the Base Data

4. Description of the Pension Projection Model and the Base Data

This section outlines the methodology to project public pensioners and occupational and private pension schemes.

4.1 Public pensioners projection model

Institutional context

The projections for public pensioners are generated using a model developed by the Ministry of Finance. For the AWG projections, modifications have been made to the input data and underlying assumptions, ensuring consistency with the established AWG methodologies.

Assumptions and methodologies applied

In the projections, the distribution by ethnic origin is the same as in the national projections (the population projections by AWG is not distributed by ethnic origin).

In nominal terms, the pensions are indexed to the wage growth in the AWG assumptions two years earlier as to match the Danish indexation rules.

The pension supplement in the public old-age pension system is reduced if the pensioner has income in addition to the public old-age pension, for example benefits from the private pension schemes (although only from rate pensions and life-long annuity pensions, not from capital pensions). The benefits from the occupational and private schemes are projected to increase, and the expenditures on the pension supplement per pensioner will hence decrease over time. Concretely, it is assumed that when private benefits from rate pensions and life-long annuity pensions increase with 1 per cent of GDP, public expenditures on old-age pension decrease with 0.12 per cent of GDP.

The tax rates used in the projections are based on the implicit tax rates in 2022, *cf. table 4.1*. The tax rate is lower for old-age pension compared to disability and VERP, because the benefit is lower and therefore the basic deduction is relatively more important. For civil servants, it is assumed that the basic deduction is applied to other sources of income (typically old-age pension), and therefore the tax rate is higher than for VERP and disability.

Tabel 4.1**Tax rates used in projections of tax revenue from pension benefits, public schemes (2022)**

	Tax rate
Old-age pension and early pension	25.5
Disability pension	30.0
VERP	27.9
Civil servants pension	40.8

Source: Dansih Ministry of Finance.

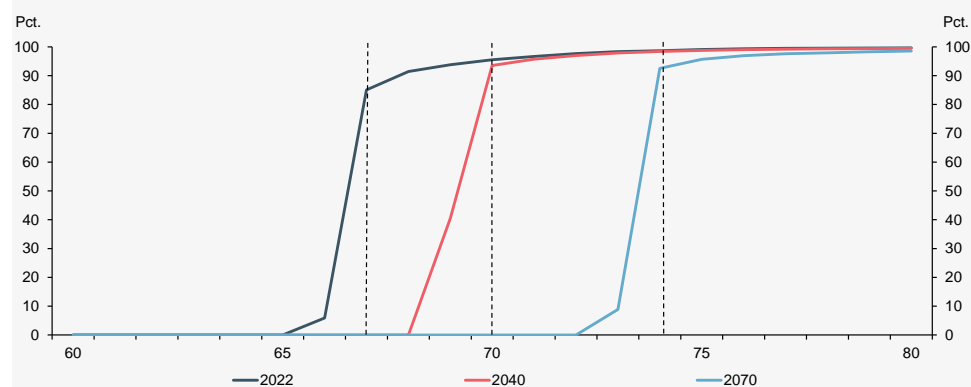
Data

The number of pensioners in each scheme broken down by age, gender, and ethnic origin is from the “Register based labour force statistics” (RAS) provided by Statistics Denmark. The levels from RAS are adjusted to measure full-year recipients in the “Cohesive social statistics” also published by Statistics Denmark.

General description of the old age pension and disability model

The principle behind the projection is to keep the shares of the population in the various schemes constant (broken down by age, gender, and ethnic origin). The number of recipients of public pensions is then driven by the demographic changes of the population.

On top of the pure demographic projection, the effect of the most recent economic reforms is included. Most noteworthy for the number of pensioners is the indexation of the statutory retirement age to life expectancy, *see figure 4.1*.

Figure 4.1**Effect of indexation: Share of population on old age pension**

Source: Danish Ministry of Finance.

As a counterpart to the increasing retirement age, the share of the population receiving other forms of public transfers, primarily disability pension, is likewise expected to increase. Due to the 2012-reform of disability pension, disability pension is generally only awarded to people above the age of 40. This is projected to shift the age profile downwards, because the starting point at age 40 is lower. People below 40 years are instead assigned to a “resource program” in order to improve their work capacity. This is not considered disability pension and is therefore not included in the projection. Thus, senior disability pension is considered as a disability pension in the projection.

General description of the VERP model

Entitlement to VERP requires that the individual has been a member of an unemployment insurance fund and paid the voluntary early retirement contributions for 30 years. Furthermore, it is a precondition that the membership and the contributions start no later than the age of 30.

The Ministry of Finance’s model of VERP recipients’ projects presently active contributors along with future entrants as well as to what extent people utilize VERP-eligibility.

Assumptions on entrances to the VERP-scheme follows historical patterns corrected for policy changes. The projection allows for different characteristics and/or behaviour between gender, 5 groups of origins, and 5 groups of highest education attained.

Assumptions on the number of people who utilize their VERP-eligibility are based on expected lifetime at VERP-age (affecting the value of the marginal year as a pensioner), private pension size (income effect) and means testing (substitution effect), and demographics (including education).

General description of the senior disability pension

The observed share of cohorts in the senior disability pension scheme from 2020-2022 serves as the basis for projecting the number of senior disability pension recipients in the long- and medium-term projections. Specifically, for each six-month period, both for men and women, the proportion receiving senior disability pension at a given age is calculated. For subsequent age brackets, the proportion of senior disability pension recipients is estimated to increase with the average observed intake at the relevant age for the preceding birth cohorts.

As the number of senior disability pension recipients within a cohort increases, the closer the cohort is to the retirement age, the retirement age induces regular fluctuations in the projection of the number of senior disability pension recipients.

General description of the early pension model

The projection of early pension is based on a registry data assessment, where detailed seniority calculations determine the number of individuals eligible for one,

two, and three years of early pension, respectively. From 2035 onward, the number of individuals on early pension is projected technically by maintaining the proportion of the population assumed to utilize the scheme.

4.2 Private and occupational pension schemes

Institutional context

The projections for private pensions are generated using a model developed by the Ministry of Finance. While this model has undergone enhancements to refine its accuracy and functionality since the previous projection exercise, its fundamental architecture has been retained. For the AWG projections, modifications have been confined to the input data and underlying assumptions, ensuring consistency with the established AWG methodologies. Thus, the Ministry of Finance's model aligns with the one utilized in the AWG projection exercises.

Assumptions and methodologies applied

All relevant macro numbers are implemented in line with the AWG assumptions.

Data

The projections of occupational and private pensions, incorporate data from Statistics Denmark, sourced originally from tax records. This data provides a micro view of pension contributions, enabling calculations for different age and gender cohorts. Additionally, the model utilizes information on the distribution of assets from the base year to forecast the performance of individual portfolios and their expected returns. The foundation of this data is the detailed register-based records available from 2014 onwards, which have been calibrated against macro-level figures to ensure accuracy and reliability in the projections.

Overview of the pension model

The Ministry of Finance's Macro Pension Model is an analytical tool used for projecting the Danish pension system over medium to long-term horizons. The model estimates total pension contributions, disbursements, and assets, distributed across cohorts, gender, and pension schemes.

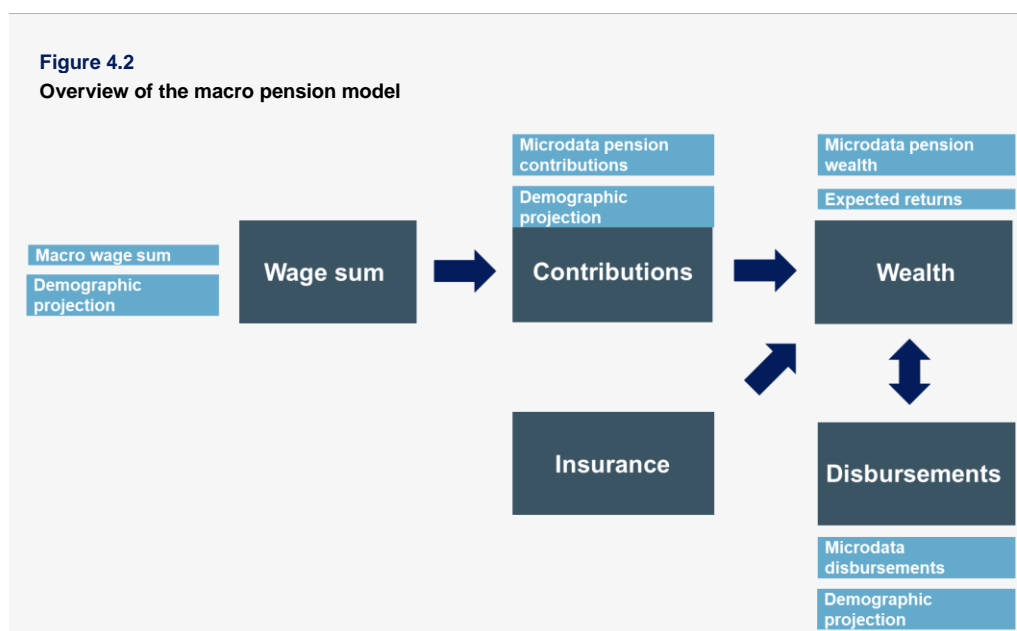
Since the last projection the Ministry's model for the savings-based pension sector has improved. These improvements enable the model to simulate pension contributions, assets, wealth, and disbursements over time, segmented by gender and age cohorts.

The macro pension model encompasses employer-administered and private pensions, ATP, and LD-schemes, as well as the insurance elements included in these schemes. Public earnings-related civil-servant pensions are not covered by the model.

The projection is divided into five key modules: wage sum, contributions, insurances, asset- and wealth accumulation, and disbursements. Figure 4.2 illustrates the fundamental interplay between the model's components. The projection begins with a gender- and age-distributed wage sum over time, aligned with employment trends in the population accounts and the macro wage sum from medium-term projections.

The evolution of the wage sum dictates the magnitude of total pension contributions, which are defined as a constant proportion of income at a given age level. Contributions to insurance schemes are then determined as a fraction of the contributions to annuity and instalment pensions.

The model's total assets evolve in line with the accounted contributions, excluding premium payments for insurances. Additionally, the model tracks actuarial reserves accumulated in connection with disability pensions and survivors' pensions. Disbursements from the model are determined by the size of the assets and the specified retirement age.



Methodological Annex

A.1 Methodological Annex

Economy-wide average wage at retirement

Table A.1
Economy-wide average wage at retirement

	2022	2030	2040	2050	2060	2070
1,000 EUR						
Economy-wide average gross wage at retirement	62.5	84.5	116.5	163.7	227.8	314.9
Economy-wide average gross wage	56.5	76.4	105.3	148.0	205.9	284.7

Source: European Commission, EPC.

Pensioners vs. pensions

The agreed labour force projections have been fully implemented in the pension projection by calibrating the national model of labour force projections to the projections provided by the EPC. The projection of pensioners is described in *part 4*.

Pension taxation

Taxation of public pension

Public pensions (old-age, VERP, disability, senior disability, early pension and civil servant) is subject to regular personal income taxation. However, they are not taxed with the 8 per cent payroll tax.

Taxation of private pensions

Both labour market pension schemes (2nd pillar) and individual pension schemes (3rd pillar) are, as a general rule, taxed ETT (contributions exempt, returns taxed, benefits taxed).

Contributions to private and occupational pensions can be deducted from ordinary income tax at the time they are paid into the schemes. However, contributions are still taxed with the 8 per cent payroll tax. Furthermore, there is a ceiling on the size of contributions to rate pensions at DKK 59,200 (euro 7,960) in 2022.

When benefits are paid out from life-long and rate pensions they are subject to the personal income tax, but not the payroll tax. Benefits from capital pensions are

taxed with a flat 40 per cent rate. In the assessment of fiscal sustainability, the contributions received and payments made from the pension sector must be included, because pension savings are not taxed until the pensions are paid out, while contributions to pension schemes can be deducted from ordinary income tax at the time they are paid into the schemes. All else equal, the future rise in revenue resulting from increasing pension payments will improve public finances.

Due to the 2012 tax reform, there can be no new contributions to tax-exempted capital pensions (last contributions in 2012). Instead, contributions can be made to a new pension TTE scheme *Aldersopsparing* (first contributions in 2013), where contributions are not exempted from taxation, but where benefits are not taxed. Contributions to *Aldersopsparing* cannot be larger than DKK 8,800 (euro 1.180) in 2023 for people younger than the statutory retirement age minus 7 years. People between this age and the statutory retirement age may contribute with up to DKK 56,900 (euro 7,650) in 2023.

Disability pensions

Projections of disability pension (senior disability and disability) are described in *part 1* and *part 4*.

Table A.2
Number of persons receiving disability pension and senior disability pension

	2022	2030	2040	2050	2060	2070
1,000 persons						
Age group -54	100.3	99.5	105.5	101.4	95.4	94.7
Age group 55-59	46.5	41.1	36.4	43.0	38.6	35.7
Age group 60-64	65.7	61.3	46.5	49.9	51.4	47.3
Age group 65-69	32.1	49.7	75.9	67.6	70.0	58.5
Age group 70-74	0.0	0.0	0.0	25.8	49.4	75.2
Age group 75+	0.0	0.0	0.0	0.0	0.0	0.0

Source: Dansih Ministry of Finance.

Non-earnings-related minimum pension

This is described in *part 3*.

Contributions

This is described in *part 3 and 4*.

Alternative pension spending disaggregation

Table A3 is similar to Table 3.3 but provides a disaggregation of the change in pension expenditure based on the number of pensions as compared to the number of pensioners in Table 3.3.

	2022-30	2030-40	2040-50	2050-60	2060-70	2022-70
Percentage points of GDP						
Public pensions to GDP	1.0	-0.4	-1.0	-0.9	0.0	-1.4
Dependency ratio effect	1.0	1.3	0.1	0.7	0.7	3.9
Coverage ratio effect*	-0.8	-1.1	-0.5	-0.8	-0.3	-3.5
<i>Coverage ratio old-age</i>	-0.6	-1.1	-0.6	-0.8	-0.2	-3.3
<i>Coverage ratio early-age</i>	-0.8	-0.1	-0.9	-0.2	0.2	-1.7
<i>Cohort effect</i>	-1.1	-1.6	0.9	-0.7	-1.0	-3.5
Benefit ratio effect	0.6	-0.2	-0.6	-0.5	-0.4	-1.0
Labour market effect	-0.2	-0.3	-0.1	-0.3	-0.1	-1.0
<i>Employment ratio effect</i>	-0.1	-0.2	-0.1	-0.1	0.0	-0.5
<i>Labour intensity effect</i>	0.0	0.0	0.0	0.0	0.0	0.0
<i>Career shift effect</i>	0.0	-0.2	0.0	-0.2	0.0	-0.5
Residual	0.3	-0.1	0.0	0.0	0.0	0.2

Source: European Commission, EPC.

Administrative data on new pensioners

Table A.4
Administrative data on new pensioners (2021) - Men

	All	Old age	Disability	Survivor	Other
Age group					
15 - 49	3,741	0	3,741	0	0
50 - 54	1,098	0	1,098	0	0
55 - 59	1,603	0	1,603	0	0
60 - 64	8,480	0	3,797	0	4,683
65 - 69	9,766	6,194	872	0	2,700
70 - 74	2,800	2,724	0	0	76
75+	2,053	2,037	0	0	16

Source: Danish administrative data and own calculations.

Table A.5
Administrative data on new pensioners (2021) - Women

	All	Old age	Disability	Survivor	Other
Age group					
15 - 49	4,089	0	4,089	0	0
50 - 54	1,611	0	1,611	0	0
55 - 59	1,976	0	1,976	0	0
60 - 64	13,409	0	4,516	0	8,893
65 - 69	8,558	5,000	806	0	2,752
70 - 74	1,373	1,363	0	0	10
75+	845	839	0	0	6

Source: Danish administrative data and own calculations.

Table A.6
Administrative data on new pensioners (2021) - Total

	All	Old age	Disability	Survivor	Other
Age group					
15 - 49	7830	0	7830	0	0
50 - 54	2709	0	2709	0	0
55 - 59	3579	0	3579	0	0
60 - 64	21889	0	8313	0	13576
65 - 69	18324	11194	1678	0	5452
70 - 74	4173	4087	0	0	86
75+	2898	2876	0	0	22

Source: Danish administrative data and own calculations.

The Danish Pension System

A.2 The Danish Pension System

This supplementary annex elaborates further on the Danish pension system. This includes a description of the public old-age pension schemes, labour market schemes, and, lastly, the individual and voluntary pension schemes.

First Pillar Pensions

The old-age pension and the disability pension are considered as part of the first pillar pensions. In the following sections each of these is described separately.

Public old-age pension consists of a basic amount and a pension supplement

The basic amount is DKK 78,600 (euro 10,600) annually in 2022 and taxable. The basic amount is reduced only on the basis of earnings from earned income. If the pensioner has earned income of more than DKK 348,700 (euro 46,800) annually, the basic amount is reduced by 30 per cent of the part of the earned income that exceeds the threshold. From 2023 the old age pension will no longer be deducted as a consequence of employment as retired or partner income, as stated in section 1.1.

The pension supplement is DKK 89,700 (euro 12,000) annually for single pensioners and DKK 45,600 (euro 6,100) annually for married or cohabiting pensioners in 2022. The eligibility for a pension supplement is contingent upon other income sources in addition to the public pension. Influencing incomes include private pensions, where the supplement may be reduced or cease entirely if other income exceeds a certain threshold.

The income of a spouse or cohabiting partner is considered when calculating the pension supplement. The supplement amount is based on the total income of the pension recipient and their spouse or cohabiting partner. When the spouse or partner is not a pensioner, 54 percent of their income is excluded from this calculation.

Effective from January, 2023, a spouse's or cohabiting partner's work income will not be factored into the pension calculation. Consequently, the pension will not be influenced by the work income of a spouse or cohabiting partner, which includes wages, fees, and profits from active self-employment.

Income equivalent to work income, such as unemployment benefits, sickness benefits, or early retirement funds received by a spouse or cohabiting partner, will also be excluded from pension calculations after January, 2023. However, other personal incomes of the spouse or cohabiting partner, such as passive self-employment income, capital income, and share income, will remain part of the pension calculation.

The income thresholds for pension supplement adjustments in 2023 are as follows:

For a single individual, the supplement is reduced with an annual income of DKK 91,300 (EUR 12,270) and ceases at an annual income over DKK 392,100 (EUR 52,700). For those married or cohabiting with a pensioner, the reduction starts at DKK 182,900 (EUR 24,580) and the supplement ceases at an income over DKK 480,100 (EUR 64,530). For those married or cohabiting with a non-pensioner, the figures are the same for reduction but the supplement ceases at an income over DKK 331,500 (EUR 44,560).

In 2022, the old-age pension expenditure amounted to 5.1 per cent of GDP.

Voluntary early retirement pension

The basic benefit paid in the VERP is DKK 211,300 (EUR 28,400) annually in 2022. This amount is further reduced based on the person's pension wealth. As a general rule, VERP payments are reduced by 64 per cent of private pension payments.

In 2022, the VERP expenditure amounted to 0.3 per cent of GDP.

Disability pension

The disability pension is DKK 232,300 (EUR 31,200) annually in 2022 for singles and DKK 197,500 (EUR 26,500) for married and cohabiting people.

Disability pension is means-tested based on earned income and capital income. The pension is reduced if this income is larger than DKK 82,600 (EUR 11,100) for singles and DKK 131,100 (EUR 17,600) for married or cohabiting couples. Furthermore, the benefit also depends on the spouse's income and on whether the spouse is a pensioner. The disability pension is reduced with 30 per cent of the income above the threshold; although only with 15 per cent if the spouse also has a right to a social pension (disability or old-age pension).

The Labour Market Supplementary Pension Scheme (ATP)

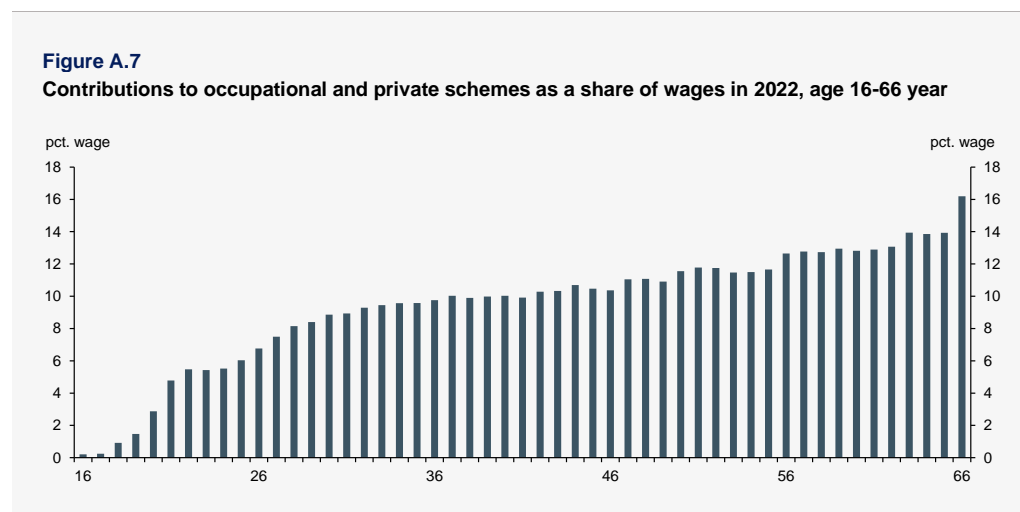
ATP is a contribution-defined and savings-based schemes. Almost all citizens of working age pay contributions to ATP. Furthermore, several groups of persons temporarily or permanently outside the labour market contribute to ATP. Thus, this scheme ensures almost all future pensioners supplementary pension besides public old-age pension. For a full-time employee, the employer contributes DKK 189 (EUR 25) per month, while the employee contributes DKK 95 per month (EUR 13).

Second Pillar Pensions

The second pillar consists primarily of (privately organized) labour market pension schemes and aims to secure citizens a reasonable replacement rate when they retire.

Labour market pension schemes presently cover around 80 per cent of the working-age population.

Labour market pensions are contribution-defined, i.e., the pension benefits depend on the contributions paid and the accumulated return on savings. Contribution rates varies depending on the wage agreement. 63 per cent of those with contributions have a contribution rate between 10 and 17 per cent.



Source: Dansih Ministry of Finance.

The composition of benefits in the labour market pension schemes varies considerably. Typically, a life-long current retirement pension is provided, which may be combined with rate pension (paid out over 10-25 years) and/or capital pension (paid out as a lump-sum benefit). To this may be added disability pension and spouse's and child's pensions.

Civil servant pensions

Civil servant pensions are defined-benefit schemes. The amount of the pension depends on the number of years of employment as a public servant and the final salary. The maximum pension is 57 per cent of the final salary and is achieved for people who have worked 37 years as a civil servant. Pensions are funded by government, regional, or local authorities out of current income, i.e. taxes.

Defined-benefit pension schemes in the form of civil servant pension schemes will have diminishing importance in both the central government and the local government sectors going forward. This is due to changes in the employment form where few new public employees are hired as civil servants. Instead, all public employees are enrolled in the labour market pension schemes described above.

1. The share of the population receiving civil servant pension is gradually reduced so that only around 250 persons is projected to receive civil servant pension in 2070 compared to around 158,400 persons in 2022. In 2022, the civil servant pension expenditure amounted to 1.1 per cent of GDP. From 2027, the VERP and old-age pension retirement age is linked to the life expectancy as described in the Welfare Agreement, *cf. table A.7*.
2. VERP is reduced from 5 to 3 years from 2018-2023. Private pension wealth lowers the VERP amount to a higher degree than now. Furthermore, the system of enrolment into the VERP is changed. At present members of unemployment insurance schemes are automatically enrolled at the age of 30, while leaving the scheme requires a written letter. With the reform, this is changed so that members of the unemployment insurance schemes must actively inform the insurer that they wish to join the VERP-scheme.
3. A new senior disability pension is introduced as an administrative fast track into the disability pension for persons 5 years before the statutory retirement age, however, the objective criteria for receiving the disability pension is unchanged.

Table A.7
Statutory retirement age, VERP, and old age pension with reforms

	Statutory retirement ages, 2006-reform		Statutory retirement ages, 2011-reform	
	VERP	Old age pension	VERP	Old age pension
2012	60	65	60	65
2013	60	65	60	65
2014	60	65	60½	65
2015	60	65	61	65
2016	60	65	61½	65
2017	60	65	62	65
2018	60	65	62½	65
2019	60½	65	63	65½
2020	61	65	63	66
2021	61½	65	63	66½
2022	62	65	63½	67
2023	62	65	64	67
2024	62	65½	64	67
2025	63	66	64	67
2026	63	66½	64	67
2027	63	67	65	67
2028	63	67	65	67
2029	63	67	65	67
2030	64	68	65	68
2031			65	68
2032			66	68
2033			66	68
2034			66	68
2035			66	69
Later	Indexed to life expectancy	Indexed to life expectancy	Indexed to life expectancy	Indexed to life expectancy

Source: Own calculations.

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