

ACCRUED-TO-DATE PENSION ENTITLEMENTS IN SOCIAL INSURANCE: FACT SHEET

DENMARK

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1. Table 29 column A: Defined contribution schemes (funded, non-general government)

1. General description of the scheme and the calculation model	
<i>a. Coverage of the scheme</i>	
<ul style="list-style-type: none"> • <i>ATP - Lifelong pension: A mandatory pension fund that covers the entire workforce - except for self-employed people where membership is optional.</i> • <i>Industrywide pension funds: These schemes are a result of negotiations between employers and employees/unions across different companies. The agreement is written into the collective agreement.</i> 	
<i>b. Institutional set-up</i>	
<i>Data sources/suppliers</i>	The Danish Financial Supervisory Authority.
<i>Which institution is running/managing the calculations?</i>	Statistics Denmark.
2. Any other comments	
<p>The data from The Danish Financial Supervisory Authority for industrywide pension funds does not distinguish between pension entitlements from social security schemes and entitlements from individual insurance schemes. Therefore, an estimated factor of 0.96 is applied to the opening value and the closing value to include only social insurance schemes.</p> <p>Discrepancies between the financial and non-financial accounts and the fact that the opening and closing balance sheets are only estimated social values and that the flows are actual social values cause differences from the opening to the closing balance. Therefore, row number 8, changes in entitlements due to revaluations, is used as a residual.</p> <p>In the National Accounts, a number of firms that are principally dealing with social insurance are classified as Insurance Firms dealing with life insurance. Pension entitlements in these firms are all classified as individual insurance policies related to pensions. The pension entitlements from these firms are not included in table 29 at this time.</p>	

2. Table 29 column B: Defined benefit schemes and other non-defined contribution schemes (funded, non-general government)

1. General description of the scheme and the calculation model	
<i>a. Coverage of the scheme</i>	
<i>Company pension funds: These schemes are based on the work contract in a specific company.</i>	
<i>b. Institutional set-up</i>	
<i>Data sources/suppliers</i>	The Danish Financial Supervisory Authority.
<i>Which institution is running/managing the calculations?</i>	Statistics Denmark aggregate information from the individual company pension funds.
<i>c. Major formulas: Benefit formula; Indexation of benefits</i>	
<i>Benefit formula</i>	In most company pension schemes, entitlements are based on a percentage of the final salary. The percentage is based on years of service. This is similar to the government civil-servant scheme.
<i>Indexation of benefits</i>	1
<i>d. Type and structure of the calculation model</i>	
The calculations are not based on a model by Statistics Denmark but rather information from the national accounts.	
2. Assumptions and methodologies applied	
<i>a. Discount rate</i>	

EIOPA curve from Solvens II including volatility adjustment.
<i>b. Wage growth</i>
2% based on inflation expectations.
<i>c. Valuation method: ABO/PBO</i>
ABO.
3. Data used to run the model
<i>a. Mortality tables</i>
Statistics Denmark population data.
<i>b. Entitlement statistics; other relevant statistics</i>
Not available.
4. Reforms incorporated in the model
Not relevant.
5. Specific assumptions
<i>a. How are careers modelled?</i>
Not relevant.
<i>b. How are survivor pensions calculated?</i>
Not available.
<i>c. How is the retirement age modelled over time?</i>
Not available.
<i>d. Other specific features of the model</i>
Not relevant.
6. Any other comments
<p>Compared to the defined contribution schemes, company fund schemes have an insignificant volume. Furthermore, the schemes seem to be funded as the companies make both regular and extraordinary payments to the schemes. Hence it is assumed that the schemes are fully funded and the liabilities from the annual reports are used.</p> <p>Company pension funds consist of only 18 companies. The largest is from TDC – a Danish telecommunication that used to be a government owned company. The benefit formula presented above is based on information from TDC.</p>

3. Table 29 column D: Defined contribution schemes (funded, general government)

No such scheme exists in Denmark.

4. Table 29 column E: Defined benefit schemes (funded, for general government employees, classified in financial corporations)

1. General description of the scheme and the calculation model	
<i>a. Coverage of the scheme</i>	
The insurance fund of civil servants administered by Sampension.	
<i>b. Institutional set-up</i>	
<i>Data sources/ suppliers</i>	Sampension annual reports.
<i>Which institution is running/managing the calculations?</i>	Statistics Denmark.
<i>c. Major formulas: Benefit formula; Indexation of benefits</i>	
<i>Benefit formula</i>	The benefit entitlements are calculated as sum of all future pension benefits which are accrued – to – date in present terms base year. In this scheme, entitlements are based on a percentage of the final salary of the civil-servant. The percentage is based on years of service.

<i>Indexation of benefits</i>	1
<i>d. Type and structure of the calculation model</i>	
The calculations are not based on a model by Statistics Denmark but rather information on a model used by Sampension, which is under supervision by the The Danish Financial Supervisory Authority.	
2. Assumptions and methodologies applied	
<i>a. Discount rate</i>	
EIOPA curve from Solvens II including volatility adjustment.	
<i>b. Wage growth</i>	
2% based on inflation expectations.	
<i>c. Valuation method: ABO/PBO</i>	
ABO.	
3. Data used to run the model	
<i>a. Mortality tables</i>	
Statistics Denmark population data.	
<i>b. Entitlement statistics; other relevant statistics</i>	
Not available.	
4. Reforms incorporated in the model	
Not relevant.	
5. Specific assumptions	
<i>a. How are careers modelled?</i>	
Not relevant.	
<i>b. How are survivor pensions calculated?</i>	
Not available.	
<i>c. How is the retirement age modelled over time?</i>	
Not available.	
<i>d. Other specific features of the model</i>	
Not available.	
6. Any other comments	
Sampension insures part of the civil servant scheme covered in column G. This part is funded. This stock is already covered in the national accounts as a part of Sampension, which is classified as an insurance company.	

5. Table 29 column F: Defined benefit schemes (funded, for general government employees, classified in general government)

No such scheme exists in Denmark.

6. Table 29 column G: Defined benefit schemes (unfunded, for general government employees, classified in general government)

1. General description of the scheme and the calculation model	
<i>a. Coverage of the scheme</i>	
Column G includes the civil servant pension scheme only. This scheme is mandatory for everyone employed as a civil servant. However, parts of the local government have such chosen to reinsure their liability. The reinsured part has been included in column E instead.	
<i>b. Institutional set-up</i>	
<i>Data sources/ suppliers</i>	The agency for modernization under the Ministry of Finance, IT companies Silkeborg Data (SD) and KMD, eIndkomstregistret and the Central Person Register. All data is provided at the individual level.
<i>Which institution is running/managing the calculations?</i>	Statistics Denmark.

<i>c. Major formulas: Benefit formula; Indexation of benefits</i>	
<i>Benefit formula</i>	The benefit entitlements are calculated as sum of all future pension benefits which are accrued – to – date in present terms base year. In this scheme, entitlements are based on a percentage of the final salary of the civil-servant. The percentage is based on years of service.
<i>Indexation of benefits</i>	1
<i>d. Type and structure of the calculation model</i>	
The Freiburg model adjusted to Danish circumstances by the University of Freiburg.	
2. Assumptions and methodologies applied	
<i>a. Discount rate</i>	
2% real rate.	
<i>b. Wage growth</i>	
Actual wage growth is updated to the most recent data available and differs between local and central government. Future wage growth is assumed to be labour productivity growth for Denmark from “The 2021 Ageing Report” and does not differ between local and central government.	
<i>c. Valuation method: ABO/PBO</i>	
PBO	
3. Data used to run the model	
<i>a. Mortality tables</i>	
Eurostat and Europop data is run through the Freiburg model. Updated yearly	
<i>b. Entitlement statistics; other relevant statistics</i>	
Reports on salary steps for civil servants are made public by the Ministry of Finance.	
4. Reforms incorporated in the model	
None – not relevant	
5. Specific assumptions	
<i>a. How are careers modelled?</i>	
Careers are modelled by assessing the individual level data to model 20 different average career paths - 13 groups for central government employees and 7 for local government employees. These career groups have been integrated into the Freiburg model by the University of Freiburg.	
<i>b. How are survivor pensions calculated?</i>	
Children under 22 inherent monthly fixed amounts. Widows and widowers inherit a certain proportion of the civil servant’s pension.	
<i>c. How is the retirement age modelled over time?</i>	
By observing the retirement pattern of the 70 year olds and creating weighted averages according to this pattern. This has been integrated into the Freiburg model by the University of Freiburg.	
<i>d. Other specific features of the model</i>	
6. Any other comments	
<p>Since 2015, there have been an improvement in the data quality, regarding the micro raw data for civil servants used as input to the Freiburg model. This has reduced the overall entitlements, but the new wage growth assumptions and discount rate has increased the level of the overall entitlement.</p> <p>The retirement age for civil servants follows the Danish State Pension “folkepension” (se other comments under column H). In 2018, the retirement age for the general population was 65, and the earliest retirement age for civil servants was 60. This is reflected by punishing retirement before the age of 65 by a life-long reduction in the entitlement, according to a percentage depending on how many years before 65 the individual takes retirement. With effect from 2019, these percentages will be updated, and the age when it is possible to retire as a civil servant will gradually increase. The 2018 calculations does not reflect this reform, but it could have an influence on the retirement behaviour of the still active civil servants.</p>	

7. Table 29 column H: Social security pension schemes (unfunded)

1. General description of the scheme and the calculation model	
<i>a. Coverage of the scheme</i>	
The early retirement scheme covers only old age pensions. It is an offer to retire earlier than the official retirement age and receive benefits for 5 years the State Pension scheme becomes available. This scheme is voluntary to enter and is based on payments into the scheme over 30 year and membership of an unemployment insurance fund.	
<i>b. Institutional set-up</i>	
<i>Data sources/ suppliers</i>	The labour market office at statistics Denmark, who have received data from the unemployment insurance funds as well as tables made public by the Ministry of Employment.
<i>Which institution is running/managing the calculations?</i>	Statistics Denmark
<i>c. Major formulas: Benefit formula; Indexation of benefits</i>	
<i>Benefit formula</i>	Recipients in the early retirement scheme receive unemployment benefits (dagpenge), which is regulated by the government. Members still paying into the scheme are entitled to their money back at the most recent payment rate.
<i>Indexation of benefits</i>	Unemployment benefits generally follow wage growth. However, since 2012 a new law came into place reducing the increase by 0.3% for 2016, 0.4% for 2017, and 0.75% for 2018-2023. Therefore, in the coming years, the indexation will be lower than real wage growth.
<i>d. Type and structure of the calculation model</i>	
The population is divided into two groups: People who are still paying into the scheme and people who have paid into the retirement scheme for 30 years and have reached the early retirement age. Upon reaching the retirement age early retirees receive an early retirement certificate. People paying into the scheme are able to pull out and receive their payments adjusted with the benefit indexation. Payments were introduced in 1999. People with the early retirement certificate are divided into subgroups based on if they already retired or if they are waiting for the two-year rule. The two-year rule rewards postponing the benefit payment by increasing the percentage of benefits received if recipients postpone benefit payments for two years to continue working.	
2. Assumptions and methodologies applied	
<i>a. Discount rate</i>	
The model does not include discounting of payments as one can only receive early retirement benefits for 5 years.	
<i>b. Wage growth</i>	
The benefit is described in indexation of benefits.	
<i>c. Valuation method: ABO/PBO</i>	
ABO with an implicit discount rate of 0%.	
3. Data used to run the model	
<i>a. Mortality tables</i>	
Mortality data from the databank of Statistics Denmark.	
<i>b. Entitlement statistics; other relevant statistics</i>	
4. Reforms incorporated in the model	
The pension reform of 2011 is included in the model.	
5. Specific assumptions	
<i>a. How are careers modelled?</i>	
Early retirement is a fixed amount that is the same for all members.	
<i>b. How are survivor pensions calculated?</i>	
Survivors do not inherit the pension.	
<i>c. How is the retirement age modelled over time?</i>	

The proportion of members who have earned the right to early retirement but who has not chosen to retire are expected to follow the same pattern as those who have already retired in future years.
<i>d. Other specific features of the model</i>
6. Any other comments
<p>Column H only includes the early-retirement scheme.</p> <p>According to The Ministry of Employment, there was an extra-ordinary possibility to get af tax-free refund of the paid premiums to the scheme in 2018. 60700 people took this option, of which 40700 could still have obtained the right to early retirement benefit. Approximately 4000 million Danish kroner were paid out, and an average of approximately 65000 Danish kroner per person.</p> <p>The early retirement benefit scheme is also following the state pension retirement age. The number of years, a person can receive early retirement benefit is gradually decreasing from 5 years prior to 2018 to 3 years in 2023. The two-year rule is reduced accordingly, but with effect for the persons taking early-retirement from 2022 and onwards there will no longer be a premium for postponing early retirement.</p> <p>Denmark also has a State Pension scheme, “Folkepension”, which is <u>not</u> presented in table 29. This is because the Danish State Pension is classified as social assistance rather than social insurance. Social insurance is covered in table 29 – not social assistance.</p> <p>The 10% decrease in this scheme for the reference year 2021 is caused by a large decrease in number of people enrolled in this scheme – which is possible because its voluntary (approximately a decrease of 38.000 people in 2021 compared to 2020).</p> <p>For the reference, the decrease in people making payments to the scheme is approximately 150.000 from 2015 to 2021.</p> <p>To help understand why The Danish State Pension is not recorded in table 29, it is prudent to present some features of the scheme: The State Pension is paid for by general taxes and requirements to enter the scheme are based on residency – not payments into the scheme. Funds from households are therefore not earmarked to the scheme. In other words, households are not entitled to The State Pension, and thus The State Pension is not an obligation by the government to households that should be recorded in table 29.</p> <p>In contrast, the early-retirement scheme is voluntary and paid into by household and therefore owed to household by the government.</p>

8. Table 29 column K: Entitlements of non-resident households

1. General description and the calculation model	
<i>a. Coverage of the scheme</i>	
This column covers all schemes where the entitlements belong to non-resident households.	
<i>b. Institutional set-up</i>	
<i>Data sources/methods</i>	Direct reporting to The Central Bank of Denmark by pension funds.
<i>Which institution is running/managing the calculations?</i>	The Danish central bank with additional splits made by statistics Denmark.
2. Any other comments	
<p>The actual social contribution is split between employer- and household contribution using the same split used in the core accounts: 64% for the employer contribution and 36% for the household contribution.</p> <p>Row number 8, changes in entitlements due to revaluations, is used as a residual. Since 2015 we have not been able to gather information in the same way about non-resident households, and we can thus not make the split. One possibility could be to use F.63 for S.2 from the financial accounts regarding the opening and closing stocks, but the non-financial part is not split between resident and non-resident.</p>	

9. Links to (national) publications providing further information on the pension schemes

Sampension annual reports (Danish)

<https://www.sampension.dk/Forside/Om-Sampension/Finansiel-information/aarsrapporter>

Law regulating company pension funds financial report (Danish)

<https://www.finanstilsynet.dk/da/Lovgivning/Lovsamling/Forsikringsomraadet/Firmapensionskasser/BEK-1230>

TDC Pensionskasse annual reports (Danish)

<http://www.tdcpensionskasse.dk/Om-os/Aarsrapporter>

Laws regulating the civil-servant scheme (Danish)

<http://hr.modst.dk/Service%20Menu/Love%20regler%20og%20aftaler/Love%20og%20Bekendtgoerelser.aspx>

The Danish FSA's Longevity benchmark, which is used to compare longevity models from Life insurance companies, company pension funds, and industrywide pension funds (Danish/English)

<https://finanstilsynet.dk/Tal-og-Fakta/Oplysninger-for-virksomheder/Oplysningstal-om-forsikring-og-pension/Levetidsmodel>

Early retirement regulation of benefits (Danish)

<https://www.retsinformation.dk/eli/lta/2019/339>

Early retirement reduced regulation of benefits (Danish)

<https://www.retsinformation.dk/Forms/R0710.aspx?id=143300>

Early retirement tax-free refund of payments to the early retirement benefit scheme

<https://bm.dk/nyheder-presse/nyheder/2019/09/60000-har-haevet-deres-efterloensbidrag-skattefrit>

Number of contributors actively paying into the early-retirement scheme (Danish)

<https://star.dk/viden-og-tal/statistik/statistikbanken-jobindsats-dk>