THE DANISH GOVERNMENT

# Denmark's Convergence Programme 2019

Ministry for Economic Affairs and the Interior

APRIL 2019

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Content

# Chapter 1

## Challenges and goals for economic policy

### 1.1 The economy until 2025

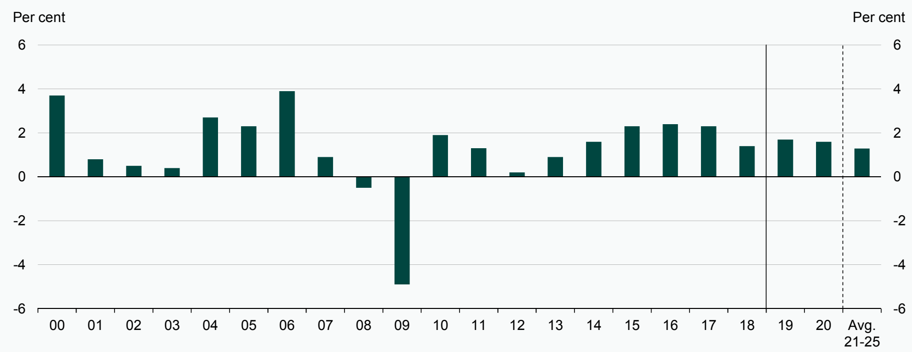
The Danish economy is experiencing a boom without any signs of significant imbalances. Employment is high and rising. Unemployment is low and declining.

There has been solid growth in recent years where GDP has grown by an average of 2 per cent annually in the period 2015-2018, *cf. figure 2.1*. A period of similar progress was more than ten years ago. The positive development in the Danish economy is considered to be sustainable, and the growth in GDP and employment is expected to continue toward 2025, although with some dampening which will gradually bring GDP down to its underlying structural level.

Growth is expected at 1.7 per cent and 1.6 per cent respectively in 2019 and 2020.[1] In the medium-term period from 2021 to 2025, it is assumed that growth will average just over 1¼ per cent.

**Figure 1.1**

**GDP growth**



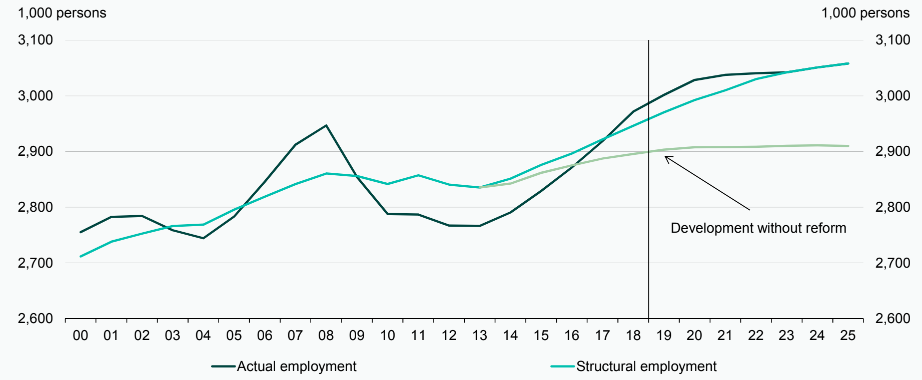

Note: Estimates for 2019-2020 are based on *Economic Survey*, December 2018. Annual growth for GDP in 2017 and 2018 has not been adjusted for an extraordinary patent payment in the first quarter of 2017, which adds to the GDP growth in 2017 while it drags on GDP growth in 2018 with an estimated 0.4 percentage points in both years. The dashed line indicates transition to the medium-term scenario.
Source: Statistics Denmark, *Economic Survey,* December 2018 and own calculations.

[1] Estimates for 2019 and 2020 are based on the forecast in *Economic Survey*, December 2018.

Employment has risen steadily since the beginning of 2013 with the increase in 2018 being the largest since 2007. As a result, at the end of 2018 just as many jobs have been created as during the boom in the 00's, and with continued job growth the outlook is for a historically large job creation in the current upswing. Employment is estimated to increase by 60,000 persons in the years 2019-2020, and toward 2025, an additional 30,000 persons are expected to find employment, *cf. figure 1.2*.

**Figure 1.2**

**Employment development**




Note: The development without reform shows how the structural employment develops without reforms.
Source: Statistics Denmark and own calculations.

Reforms and foreign labour have contributed to an expansion of the workforce in recent years which has supported employment growth. Reforms have, among other things, contributed to seniors remaining in the labour market and to a stronger integration effort. In addition, there has been a significant inflow of foreign labour through international recruitment.

Since the beginning of the economic upswing, foreign labour has contributed by more than 40 per cent of the increase in employment. Foreign labour still finds employment in Denmark and constitutes a major cyclical buffer that can dampen the pressure on the labour market. The competition for international labour has, however, been tightened, and there is a risk that the opportunities for international recruitment will weaken.

Reforms facilitate further sustainable job growth in the coming years. The expected increase in employment until 2025 is supported inter alia by the 2011 retirement reform, which entails that the retirement age will gradually increase from 65½ years in 2019 to 67 years in 2022. Also the early retirement age has been increased continuously since 2014 and will reach 64 years in 2023. The effect of later retirement is estimated at almost 15,000 persons per year in 2019-2022.

In addition, other reforms contribute with a boost of just over 3,000 persons a year to structural employment, including the phasing-in of previously agreed tax and transfer measures and the tax agreement from 2018. In total, the reforms are estimated to increase structural employment by an average of about 18,000 persons per year until 2022. The reform effect decreases to just below 9,000 persons annually in 2023-2025, as the contributions from higher retirement age decrease.

The reforms will contribute to increase labour supply and thus prosperity in Denmark by securing that more people are in employment. The reforms will also dampen capacity pressures in the years to come and contribute to employment not being significantly above the structural level. Without the reforms, employment would have already exceeded the structural level, implying a significant risk of unsustainable wage growth and a possible overheating of the economy.

Denmark thus has a strong foundation for a continued expansion. This is also reflected in the fact that there are no current signs of significant imbalances building up, e.g. in the form of unsustainable indebtedness or housing prices that exceed fundamental economic drivers. This is partly due to a number of measures aimed at the housing market, including new guidelines (from 1 January 2018) in connection with mortgage lending which are intended to limit the use of certain risky loan types.

Reforms and measures that support the stability of the housing market reduce the risk of significant imbalances. However, a less favourable course with regard to imbalances can be a consequence, for example if widespread lack of labour occurs. This will increase the pressure on the labour market in a situation where a considerable part of firms already report a shortage of labour.

In such a situation, a more subdued development in public expenditure could dampen demand pressures. Measures that increase labour supply will increase the availability of productive resources for firms – but will also ensure an increase in overall prosperity as such measures structurally increase GDP. New initiatives that increase the supply of labour will thus also allow the economy to grow more than under the current assumptions based on already adopted policies.

Negative risks from abroad can also materialize and dampen growth in Denmark. In particular, a no-deal Brexit will have significant financial consequences for both the UK and its trading partners, including Denmark. At the same time, new protectionist measures at a global level cannot be ruled out, and if so, it would also affect the Danish economy.

## 1.2 Goals for economic policy

Denmark has a tradition for a stability-oriented economic policy with a long planning horizon. The formal framework for fiscal policy is specified in the Danish Budget Law and also follows EU rules.

An important instrument in the planning of fiscal policy is the medium-term plans that contain economic policy targets and projections of the economic development. Among other things, the medium-term plans have played an important role in ensuring sound public finances and strengthening the foundation for growth and employment by identifying challenges for the Danish economy at an early stage.

A number of goals and benchmarks for fiscal policy towards 2025 can be found in *Box 1.1*.

**Box 1.1**

**Goals and benchmarks for fiscal policy towards 2025**

- The government will pursue a sound and responsible economic policy that support the fixed-exchange-rate policy. Fiscal policy is planned within the framework of the Budget Law, including the structural deficit limit of ½ per cent of GDP, the Stability and Growth Pact and the Fiscal Compact.
- In the coming years, economic policy is planned to support a balanced expansion in the economy, including the effects of reforms that increase labour supply and productivity. Fiscal policy should be aligned with the economic situation.
- The government's goal is to increase growth structurally by DKK 80 bn. towards 2025. The contribution to increased growth and prosperity can be divided into sub-goals, respectively, to increase employment by 55-60,000 persons and to increase productivity by DKK 35 bn.
- Fiscal policy in the coming years is planned in order to ensure balance between public expenditures and revenues in 2025.
- The consolidation of public finances ensures, among other things, the build-up of a margin to the deficit limit in the Budget Law, so that fiscal policy supports a sustainable expansion in the economy and there is a fiscal room for manoeuvre relative to the deficit limit in the Budget Law in the event of an unexpected economic setback.
- The expenditure burden should decrease such that expenditures account for a smaller part of the overall economy. Within the framework of a declining expenditure burden, a larger proportion of total public spending should go to public spending and public investments that increase the basis for growth.
- The tax freeze forms the framework for tax policy, and the government wants to lower taxes and fees in order to make it cheaper to be a Dane and operate a firm. Towards 2025, the tax burden should decrease.
- A goal of an annual basis real public consumption growth of 0.3 per cent per year within the framework of a decreasing expenditure burden. In addition to the basis growth in public consumption, comes expenses made possible by reforms, such as student grants, and investments in the safety of Danish people.
- Public debt should maintain a wide margin to the 60 per cent of GDP limit concerning EMU debt.

Source: Regeringsgrundlag: *For et friere, rigere og mere trygt Danmark* mv.

Since the projection in *Denmark's Convergence Programme 2018*, the government has reached a number of agreements, including:

- Media agreement (*medieaftale for 2019-2023)* (June 2018) which, among other things, abandons the media license so that financing in the future is done through income taxation, and a reduction in the grant to the Danish Broadcasting Corporation by 20 per cent over five years.

- Agreement on energy (*energiaftale)* (June 2018) includes investments in green energy sources such as windmill parks at sea, solar power cells, wind on land, and biogas. In addition, a number of fees on electricity and heat are reduced. The current energy saving scheme is replaced with two new support schemes for business and buildings.

- Agreement on securing qualified labour to firms (*aftale om at sikre kvalificeret arbejdskraft til virksomheder)* (November 2018) contains a number of initiatives for a total of DKK 100 mil. to enhance the qualifications of unemployed and secure qualified labour to the firms.

- Agreement on new revalorization of old age pension etc. *(aftale om ny regulering af folkepensionen og indførelse af obligatorisk opsparing for overførselsmodtagere)* (November 2018) implies that old age pension is to be adjusted by the regular wage trend without a deduction. In addition to this, a mandatory retirement savings for a number of recipients of public income transfers is introduced.

- The Budget Bill for 2019 (*aftale om finansloven for 2019)* (November 2018) includes, inter alia, a number of fee reductions and strengthening of business conditions, initiatives that increase the disposable income of old age pensioners, and increased priority to health and old age spending.

- Agreement on a coherent Denmark (*aftale om et sammenhængende Danmark – investeringsplan 2030)* (March 2019) invests a total of DKK 112.7 bn. in the transport infrastructure sector over the period 2021-2030.

- Agreement on a health reform (*et stærkere sundhedsvæsen – tættere på dig)* (March 2019) includes, inter alia, the establishment of a proximity fund of DKK 8.5 bn. in 2020-2025 to an extraordinary lift of the health care area.

The agreements will with increasing strength support, among other things, incentives to employment, investments in roads and railways, improved health care, the green transition, and the build-up of pension savings for groups with none or limited pension savings.

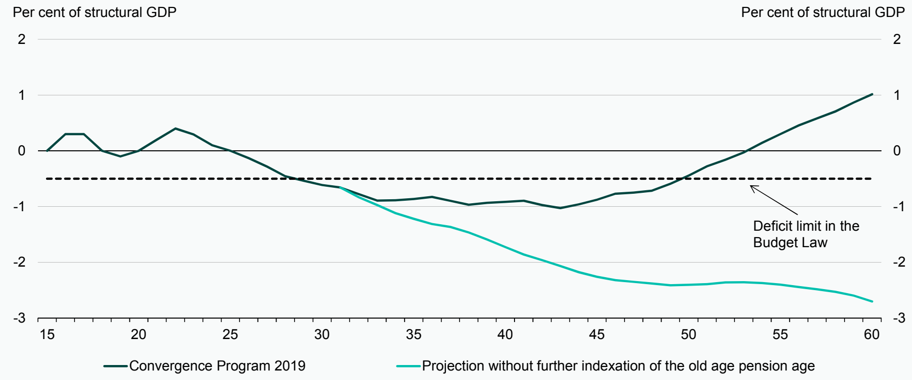
Meanwhile, a number of previous reforms are still being phased in, and there will be positive reform effects to the labour supply over the coming years. This especially concerns the Early Retirement reform from 2011.

The Early Retirement reform and the agreement to gradually increase in the old age pension age are essential to securing sustainability of public finances in the longer term where the number of older people will increase as well as the demand for health care services and elderly care. If the old age pension age is kept constant after the already agreed increase in 2030, public finances will in isolation be weakened by around 1 per cent of GDP in the years 2041-2045, equivalent to roughly DKK 25 bn. (2018-level). In

2060, the deficit will increase by just short of 4 per cent of GDP, or approximately DKK 85 bn., *cf. figure 1.3*.

**Figure 1.3**

**Development in fiscal balance 2015-2060 with and without indexation of pension age**




Note.: Projection without further indexation of old age pension age shows how the fiscal balance would develop if the old age pension age is kept constant after the already agreed increase to 68 years in 2030. The effect of the deficit includes interest rate effect.
Source: Statistics Denmark and own calculations.

The public finances are under pressure for a considerable period of time toward the middle of the century due the demographic development and declining revenues from oil and gas production in the North Sea. The demographic development implies that persons in employment will amount to a smaller share of the overall population from around 2025 to 2040. The number of employed is important in relation to total tax revenues and the public expenses to income transfers, including old age retirees. The Welfare Agreement from 2006 and the Early Retirement reform from 2011 will thus not in themselves prevent that from the middle of the century there will be a number of years with structural public deficits in excess of ½ per cent of GDP.

The new political agreements since the projection in *Denmark's Convergence Programme 2018* and other updates, including the latest demographic projections from Statistics Denmark (May 2018), are taken into account in the updated medium-term projection in the 2019 Convergence Programme. New information since the medium-term projection from August 2018 are summarized in box 1.2

**Box 1.2**

**Updates to the 2025 projections since August 2018**

- New short term forecast in *Economic Survey,* December 2018: The forecast in *Economic Survey*, December 2018, is maintained for the 2019 Convergence Programme. The survey includes forecasts for central macroeconomic variables and public finances in 2018-2020. In the medium projection, the positive output- and employment gaps are assumed to close by 2023. National accounts and public accounts for 2018 will be included in the upcoming forecast in May 2019.

- New political agreements: The medium-term projection includes the effects from new political agreements since the projection an August, including the Budget Bill for 2019 and "*Aftale om ny regulering af folkepension og indførelse af obligatorisk opsparing for overførselsmodtagere", "Aftale om et sammenhængende Danmark – Investeringsplan 2030",* and "*Et stærkere sundhedsvæsen – tættere på dig"*.

- The agreement on mandatory pension savings implies, among other things, a gradual build-up of mandatory pension savings toward 2030, which is taken into account in the projection. The agreement of an investment plan implies a lift in public investments, in excess of the technical assumptions, toward 2030 equivalent to the agreed financing contributions from dividends from Great Belt and Sound etc.

- Updated structural revenue levels: In connection with the Convergence Programme, the calculation of structural revenues from corporate taxation and equity income taxes has been updated, *cf. chapter 3*.

- Vehicle registration duties and energy fees: The projection takes into account the 2019 basis projection from the Danish Energy Agency, including a gradual increase in the number of electrical cars toward, and especially after, 2025, which in isolation implies lower structural revenues from registration fees and fees on fuel. Rules on fees etc. follow agreed policy, i.e. current rules or political agreements with a majority behind them, but not for example goals on zero emission in 2050 or the stop of sales of conventional cars, *cf. chapter 5.*

- Updated interest rate assumptions: The interest rate assumptions are based on *Economic Survey,* December 2018 for the years 2019-2020. From 2020 to 2040, a gradual normalisation of the interest rate levels is assumed. The interest rate on a 10-year Treasury bond is, for example, 2.7 per cent in 2025 and 4.5 in the long run.

- Oil prices and revenues from activities in the North Sea: The oil price is based on the International Energy Agency's projection from November 2018 and the development in the price on futures in according to *Economic Survey*, December 2018. The projection for the North Sea production is based on the August 2018 projection from the Danish Energy Agency.

- Demographic pressure: On the basis of updated individual-level data, the growth in the mechanically calculated demographic pressure amounts to around DKK 20½ bn. toward 2025 (measured relative to 2019). That amounts to an average annual growth of around 0.65 per cent.

- Other information: Among other things, the development in revenues from carbon dioxide quotas has been revised up on the basis of updated price assumptions, updated projections for PSO-expenditures and consequences from the adjusted time plan for the release of new property valuations, and other things, including revenues from broadband auctions etc.

## 1.3 Updated assessment of the fiscal space

The fiscal space towards 2025 is a measure of how much room there is for new political tax and expenditure initiatives, including real growth in public consumption, or other political initiatives within the goal of structural balance in 2025. In the absence of new funding, the fiscal space must cover, among other things, the annual budget agreements with the municipalities and regions, as well as the annual budget bills.

The fiscal space until 2025 was last updated in connection with the medium term projection from August 2018, when it was calculated to amount to approx. DKK 27½ bn. in 2025 (compared to the expenditure level in 2018).

In connection with the 2019 budget bill, the fiscal space for 2019 has been allocated. When this is taken into account, the fiscal space as calculated in August 2018 amounts to approx. DKK 23½ bn. towards 2025. This reflects that the calculations of the fiscal space include one year less when compared to the assessment from August 2018.

The fiscal space in the Convergence Programme 2019 is estimated at approx. DKK 24½ bn. in 2025 (measured in relation to the level in 2019) and is thus slightly higher than estimated in August, *cf. Table 1.1.*

The updated fiscal space reflects that new information, including updated structural revenues from equity income taxes and corporate taxes, entails an underlying improvement in the structural balance by 0.1 per cent of GDP in 2025. Within the goal of structural balance in 2025, the new information etc. thus increases fiscal space by DKK 2 bn. in isolation. The effect is dampened by the fact that a financing contribution from the fiscal space is used in the *Agreement on new regulation of public pension and the introduction of mandatory savings for transfer recipients* (November 2018), which supports pension savings for persons who are on public transfer income during periods of their lives.

**Table 1.1**

**Changes in fiscal space since August 2018**

| | 2025 |
|---|---|
| **DKK bn. (2019 prices)** | |
| **Updated 2025 projection, August 2018** | **23½** |
| + Agreement on mandatory pension savings | -1 |
| + Underlying improvement of the structural balance | +2 |
| + Other factors incl. expected increased costs on EU contributions | -¼ |
| **Denmark's Convergence Programme 2019** | **24½** |

Note: The fiscal space is currently calculated in relation to the level of expenditure in 2019. Figures are rounded to the nearest DKK quarter billion. The fiscal space is calculated with uncertainty, which is increasing with time.
Source: Own calculations.

# Chapter 2

## Macroeconomic scenario towards 2025

### 2.1 Economic outlook for 2018 and 2019

In recent years, both GDP and employment have shown solid growth. It has brought the Danish economy well into a boom phase. The improvement in the labour market has led to a significant increase in incomes, and both private consumption and investments are key drivers of the upturn. Effects of already adopted reforms will support employment in the coming years.

GDP has grown at an average rate of 2 per cent annually in the period 2015-2018, and the expansion is expected to continue in the coming years. GDP growth is expected to be 1.7 and 1.6 per cent in 2019 and 2020 respectively. The boom in the Danish economy is thus expected to continue.

The assessment of the economic outlook for 2019 and 2020 is based on the forecast in *Economic Survey*, December 2018, *cf. box 2.1*

**Box 2.1**

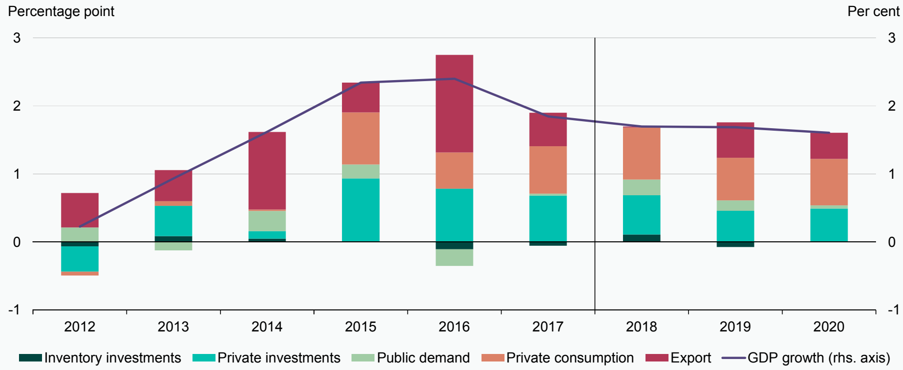
**The economic outlook for 2018-2020 in Denmark's Convergence Programme 2019**

The convergence programme is based on the forecast in the *Economic Survey*, December 2018. Since the December survey, national accounts figures for the fourth quarter of 2018 and a number of key figures for the economy have been published. The figures show that the expansion in the Danish economy continues in line with expectations in the December survey. Against this background, the assessment of the economic outlook is unchanged from the December survey. Growth estimates and underlying assumptions are thus maintained in the convergence programme as in the *Economic Survey*, December 2018. In May 2019, a new forecast for the Danish economy will be published, incorporating new information on the economic development.

The primary driving force in the Danish economy is the continued improvement in the labour market. The increase in employment lays the foundation for increasing private consumption through larger incomes. Growth in 2019 and 2020 is also expected to be supported by private investments. Public demand, i.e. public consumption and public investments are, on the other hand, expected to grow only modestly. Exports are also expected to contribute, but to a lesser extent. This is mainly due to the fact that the global economy seems to have peaked. This happens after a number of years where the recovery of the Danish economy after the financial crisis was driven by increased exports, *cf. figure 2.1*.

**Figure 2.1**

**Contribution to GDP growth**




Note: Contribution to GDP growth is adjusted for import content. Estimates for GDP growth in 2017 and 2018 are adjusted for a large one-off payment in the 1st quarter of 2017 for use of Danish-owned intellectual property rights, *cf. box 4.1* in *Economic Survey*, May 2018. National accounts figures for 2018 have not been incur porated, *cf. box 2.1*.
Source: Statistics Denmark and own calculations.

The increase in private consumption should be seen in connection with a significant increase in incomes. At the same time, households are cautious in the sense that they do not spend the increase in incomes on consumption, but also to a considerable extent on savings. This means that the increase in consumption is not founded on unsustainably high growth in indebtedness. On the contrary, households overall have the opportunity to increase consumption further without causing imbalances to their financial situation.

Investments are driven in particular by an increasing need for more production capacity due to higher capacity utilization (measured by the output gap). Housing investments also have increased in line with, among other things, higher incomes and continued low interest rates, but the pace is expected to decline slightly in the coming years.

Employment has grown by 226,000 persons since the beginning of 2013 and is expected to grow by 33,000 and 27,000 persons in 2019 and 2020 respectively. Increasing pressure on the labour market is dampened by reforms that are estimated to increase structural employment by a total of 17,000 persons per year in 2019 and 2020.

Employment is currently slightly above the structural level, and the employment gap is expected to expand further towards 2020. However, the pressure on the labour market is expected to remain relatively moderate. If employment rises faster than expected, or if reforms do not have the anticipated effect, the pressure on the labour market may increase further in a situation where many companies are already reporting high labour shortages.

However, the situation is not the same as in 2006-2007. At that time, the labour market was severely overheated, including through wage increases that reduced competitiveness. At the same time, house price increases outpaced underlying economic fundamentals, and borrowing was high. Currently, there are no signs of similar imbalances.

## 2.2 Assumptions for the international economy and financial conditions

The assumptions concerning developments in the international economy and financial markets are unchanged relative to *Economic Survey,* December 2018. The outlook points to trade weighted GDP growth in export markets of 2.2 per cent in 2019 and 2.1 per cent in 2020, *cf. table 2.1*.

Towards 2023 the assumptions regarding the international economy are based on the medium-term projections in the IMF *World Economic Outlook,* October 2018. Trade-weighted international economic growth is estimated at 2.0 per cent on average from 2020 to 2023 with a declining trajectory.

The projected development in oil prices is from the *Economic Survey*, December 2018 and assumes a gradual convergence towards the medium-term projections from the International Energy Agency (IEA). In correspondence with the projections, oil prices have been increasing since the turn of the year from around 50 USD per barrel to just below 70 USD per barrel at the end of March 2019. Towards 2025, the oil price is assumed to increase slightly more than average inflation to around 85 dollars per barrel by 2025. The methodology is more thoroughly described in *Economic Survey*, December 2018.

**Table 2.1**

**External assumptions**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| Real GDP growth, main trading partners[1)] | 2.5 | 2.2 | 2.1 | 2.0 | 1.9 | |
| Oil price (Brent), USD per barrel | 71.4 | 64.6 | 67.9 | 71.1 | 74.6 | 85.2 |
| Dollar exchange rate, DKK per USD | 6.3 | 6.6 | 6.6 | 6.5 | 6.4 | 6.3 |
| Interest rate, 10-year Danish treasury bonds, per cent. | 0.5 | 0.6 | 1.1 | 1.5 | 1.9 | 2.7 |

Note: Estimates for the exchange rate, oil price and interest rates are based on observations up until 28 November 2018.

1) Calculated as a weighted average of GDP growth in 36 main Danish trading partner countries, based on their respective shares in Danish exports of goods and services in 2017.

Source: *Economic Survey,* December 2018, and own calculalations.

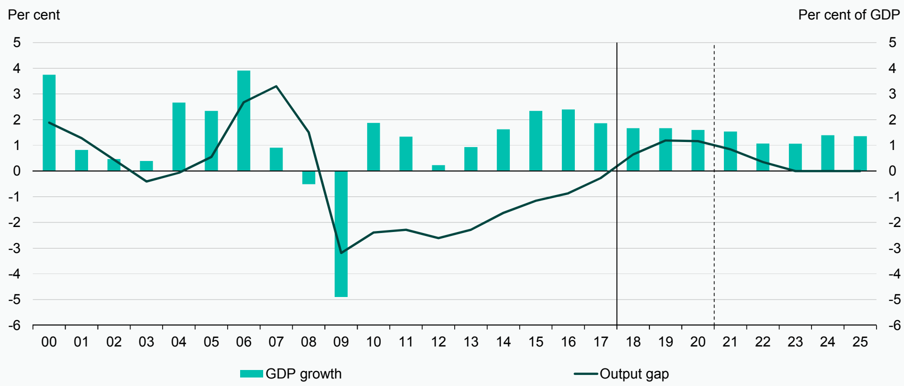
Based on the projections in *Economic Survey,* December 2018, short-term interest rates in Denmark are assumed to remain negative in 2019, at -0.3 per cent, and to increase gradually in 2020. The interest rate on 10-year government bonds is also assumed to increase gradually to just above 1 per cent in 2020 and further to 2.7 per cent by 2025. The interest rate projections reflect, among other things, an assumption that the ECB will continue to pursue accommodative monetary policy in the coming years followed by a gradual normalisation.

## 2.3 Growth and employment towards 2025

As a result of the solid growth in the Danish economy in recent years, GDP now exceeds its structural level, i.e. the output gap is positive. In the medium-term projection towards 2025, it is assumed that the positive output gap will gradually close towards 2023. Thereafter growth in GDP will correspond to the estimated structural growth rate with an average GDP growth rate of approximately 1¼ pct. in the years 2021-2025, *cf. figure 2.2*.

**Figure 2.2**

**GDP growth and output gap**




Note: The output gap measures the difference between actual and structural GDP. Annual GDP growth in 2017 and 2018 has been adjusted for an extraordinary patent payment in the first quarter of 2017, *cf. box 4.1 in Economic Survey,* May 2018. National Accounts figures for 2018 are not incorporated, *cf. box 2.1*.
Source: Statistics Denmark and own calculations.

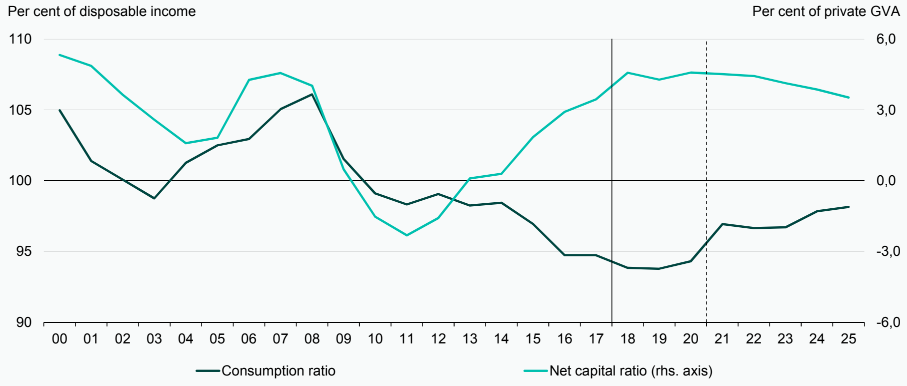
Similarly, it is assumed that employment and unemployment towards 2023 will gradually adjust to their estimated (structural) levels, which are consistent with stable wage and price developments over the medium term. Total employment is expected to increase by 90,000 persons from 2018 to 2025, while structural employment increases by 112,000 persons.

The increase in structural employment is partly due to the early retirement reform from 2011 and a gradual increase in the retirement age. In addition, the phasing-in of previously agreed tax and transfer measures and the tax agreement from 2018 will support labour supply.

Increasing employment and real wages support private consumption towards 2025. Moreover, a normalisation of the consumption ratio is assumed, *cf. figure 2.3*. The annual growth rate in private consumption is assumed at approximately 2.0 per cent on average towards 2025.

**Figure 2.3**

**Consumption ratio and net capital ratio**




Note: The consumption ratio is calculated as private consumption as a share of households' disposable incomes. The net capital ratio is the sum of machines, vehicles, inventory, buildings and plants (excluding housing) in private industry less depreciations.
Source: Statistics Denmark and own calculations.

In line with the general development in the economy, firms are assumed to need to expand their production capacity. It is assumed that the net investment ratio will stay largely unchanged on a relatively high level of 4 per cent during the forecast, which will support an increase in the capital ratio. An increase in production capacity is reflected in higher hourly productivity growth.

Production potential is expected to grow by 1.5 per cent annually on average from 2018 to 2025 due to an increase in productivity growth and higher structural workforce, *cf. table 2.2*.

**Table 2.2**

**Contributions to growth in potential production**

| | 1996-2007 | 2008-2009 | 2010-2017 | 2018-2020 | 2021-2025 |
|---|---|---|---|---|---|
| Average annual growth, per cent | | | | | |
| **1. Potential production (GVA)** | 1.8 | 1.0 | 1.2 | 0.8 | 1.7 |
| Of which contributions from: | | | | | |
| - Hourly productivity (structural) | 1.1 | 1.3 | 1.0 | 0.1 | 1.2 |
| - Structural unemployment | 0.5 | 0.1 | 0.0 | 0.0 | 0.0 |
| - Structural labour force | 0.2 | 0.2 | 0.3 | 0.8 | 0.4 |
| - Working hours (structural) | 0.0 | -0.6 | -0.2 | 0.0 | 0.0 |
| 2. Cyclical contribution | 0.3 | -3.2 | 0.4 | 0.5 | -0.2 |
| **3. Real GVA (1+2)** | 2.1 | -2.2 | 1.6 | 1.3 | 1.5 |
| 4. Net taxes | 0.1 | -0.5 | 0.0 | 0.2 | -0.2 |
| **5. Real GDP (3+4)** | 2.2 | -2.7 | 1.6 | 1.5 | 1.3 |

Note: The estimate for potential growth in sub-periods is uncertain, including with regards to the contributions from each individual component. Due to rounding, the sum of individual components does not necessarily correspond to the totals.
Source: Statistics Denmark and own calculations.

## 2.4 Housing prices and macroeconomic imbalances

The housing market has been growing since 2012, and housing prices have continued to rise in 2018. The increase in housing prices was broad based across the country and reflects that rising incomes and low interest rates have increased the demand for housing. In addition, rising prices in the larger cities have pushed prices up in surrounding areas.

Recently, housing prices have had a more subdued development, partly due to an increase in housing investment. In particular, the prices of owner-occupied flats have stagnated since mid-2018. The slowdown also reflects a number of new initiatives aimed at the housing market and lending. This applies, among other things, to the Growth Guidance from 2016, which imposes stricter requirements on borrowers in growth areas, as well as new guidelines in the statutory order on 'good-practise' (from 1 January 2018) with the purpose of limiting the use of certain risky loan types.

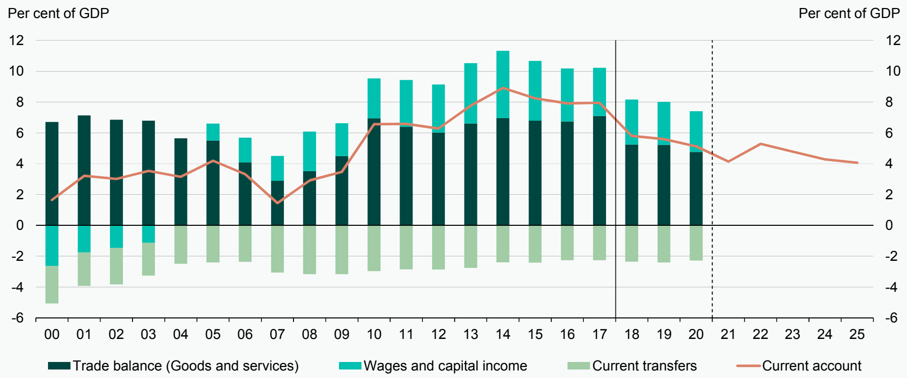
In addition, the government has decided to activate the countercyclical capital buffer at 0.5 per cent with effect from 31 March 2019 and to raise it further to 1 per cent from 30 September 2019. The countercyclical capital buffer contributes to a more solid financial system in the form of a shock absorber that can be released to protect the credit institutions' loans to households and businesses in times of financial instability or economic downturns.

A new housing tax system is implemented in 2021 which aims to ensure that housing taxation follows new and more accurate real estate and land evaluations. Overall, the new tax rules are expected to have a fairly neutral effect on average housing prices with a marginally positive effect on the price of single-family houses towards 2021. For owner-occupied flats, the new housing taxes are expected to lead to a more subdued price development. This reflects that the total housing tax payments are eased slightly for single-family homes, but increases a little for owner-occupied flats before tax rebates, *cf. Tax Economic Review 2018*.

The surplus on the current account is currently around 6 per cent of GDP, but is expected to decline to just over 4 per cent of GDP towards 2025, *cf. figure 2.4*. The large surpluses on the current account in recent years reflect, among other things, a large propensity to save among households. A return to a more normal consumption propensity is expected in the coming years, which contributes to a reduction in the surplus. At the same time, the financial savings of businesses are also expected to decline, as the needs for investment increase.

**Figure 2.4**

**Current account**




Source: Statistics Denmark and own calculations.

The surplus on the current account contributes to an increase in Denmark's net foreign assets, which is expected to grow to more than 80 per cent of GDP in 2025, *cf. table 2.3*. In itself, this points towards higher wealth income. On the other hand, gradually rising interest rates in the forecast period are expected to reduce the return on the Danish assets relative to abroad, due to the composition of assets and liabilities.

**Table 2.3**

**Savings, investments, current account and net assets against other countries**

| | 1995-2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | | | |
| Investment ratio, private sector | 18.2 | 19.5 | 19.5 | 20.0 | 20.1 | 20.4 | 20.5 |
| Savings ratio, private sector | 21.8 | 24.5 | 24.9 | 24.7 | 24.3 | 25.5 | 24.4 |
| Private financial savings | 3.9 | 5.7 | 5.7 | 5.3 | 4.4 | 5.3 | 4.1 |
| General government budget balance | 0.2 | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Current account | 4.1 | 5.8 | 5.6 | 5.1 | 4.1 | 5.3 | 4.1 |
| Net assets, end of period | 4.9 | 60.5 | 66.4 | 71.4 | 73.3 | 76.7 | 83.1 |

Note: National accounts figures for 2018 have not been incorporated, *cf. box 2.1*.
Source: Statistics Denmark and own calculations.

# Appendix 2.1 Key figures for the Danish economy 2017-2025

**Table 2.4**

**Key figures for the Danish economy 2017-2025**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| **Output gap and real growth rates (per cent)** | | | | | | | |
| GVA | 2.1 | 1.5[1)] | 1.6 | 1.4 | 1.9 | 1.2 | 1.5 |
| GDP | 2.3 | 1.7[1)] | 1.7 | 1.6 | 1.5 | 1.1 | 1.4 |
| Output gap (per cent of GDP) | -0.3 | 0.6 | 1.2 | 1.2 | 0.8 | 0.3 | 0.0 |
| **Demand, real growth, per cent** | | | | | | | |
| Private consumption | 2.1 | 2.4 | 2.1 | 2.3 | 1.8 | 1.8 | 2.0 |
| Public consumption | 0.7 | 0.4 | 0.5 | 0.4 | 0.6 | 0.4 | 0.5 |
| Gross fixed capital formation | 4.6 | 6.1 | 2.8 | 3.8 | 2.8 | 2.1 | 1.1 |
| Export | 3.6 | 1.7[1)] | 2.6 | 2.3 | 1.8 | 1.3 | 2.0 |
| Import | 3.6 | 3.9 | 3.0 | 3.4 | 2.3 | 2.3 | 2.1 |
| **Prices, per cent** | | | | | | | |
| Consumer prices | 1.1 | 0.9 | 1.5 | 1.8 | 1.9 | 1.7 | 1.7 |
| **Current account, per cent of GDP** | | | | | | | |
| Current account | 8.0 | 5.8 | 5.6 | 5.1 | 4.1 | 5.3 | 4.1 |
| Private financial savings | 6.8 | 5.7 | 5.7 | 5.3 | 4.4 | 5.3 | 4.1 |
| **Labour market and productivity** | | | | | | | |
| Growth in the labour force (per cent) | 1.7 | 1.4 | 0.9 | 0.8 | 0.4 | 0.2 | 0.2 |
| Growth in employment (per cent) | 1.7 | 1.7 | 1.1 | 0.9 | 0.3 | 0.1 | 0.2 |
| Registered gross unemployment (1,000 persons) | 116 | 108 | 103 | 99 | 100 | 105 | 108 |
| Structural gross unemployment (1,000 persons) | 111 | 112 | 110 | 109 | 107 | 107 | 107 |
| Hourly productivity, entire economy | 1.0 | 0.0[1)] | 0.5 | 0.5 | 1.5 | 1.1 | 1.2 |
| Hourly productivity, private urban sector | 1.0 | 0.6[1)] | 0.6 | 0.7 | 1.2 | 1.1 | 1.3 |
| Growth in GVA per employed | 0.5 | -0.2[1)] | 0.4 | 0.5 | 1.6 | 1.1 | 1.3 |

1) Estimates for 2018 are adjusted for a large one-off payment in the 1st quarter of 2017 for use of Danish-owned intellectual property rights, *cf. box 4.1* in *Economic Survey*, May 2018.

Note: The projections for 2018-2019 reflect the forecast in *Economic Survey*, December 2018. The projections for 2020-2025 derive from technical assumptions.

Source: Statistics Denmark and own calculations.

# Chapter 3
## Budget balance and public debt towards 2025

### 3.1 The budget balance

In *Economic Survey,* December 2018 the actual budget balance is expected to be balanced in 2018-2020, which is also the case for the period 2021-2025 with only minor fluctuations, *cf. table 3.1*.

**Table 3.1**

**Overview of the actual budget balance**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| **Budget balance, per cent of GDP** | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |

Note: The preliminary figures from Statistics Denmark show an actual budget balance surplus of DKK 11¼ bn. in 2018 corresponding to approx. 0.5 pct. of GDP*, cf. appendix 5.1.*The surplus based on the preliminary figures is larger than estimated in December 2018, which mainly reflects larger revenues from the volatile pension yield tax and corporate taxes. In the calculation of the structural budget balance adjustments are made for fluctuations in revenues from the pension yield tax, revenues from the North Sea etc.
Source: Statistics Denmark and own calculations.

The actual budget balance is expected to improve both this year and the next year due to the favorable business cycle compared to 2018, while one-off payments weaken the budget balance in 2020-2022[1]. After 2022 the projection is structural and the actual budget balance is equal to the structural budget balance, which is gradually reduced towards the political goal of a balanced budget in 2025.

### Budget balances by sector

The public sector consists of the central government, local governments (regions and municipalities), and social security funds. In Denmark, it is generally only the central government that need not balance the budget. The central government budget surplus is expected to be 0.2 per cent of GDP in 2018 based on the projection of December 2018, while a balanced budget is expected in the local governments, *cf. table 3.2*. In 2019-21 the central government is expected to operate with a deficit of 0.1-0.2 percent of GDP, which is gradually reduced towards the political goal of a balanced budget in 2025.

The budget balance of municipalities and regions is technically considered to be balanced throughout the projection period. On a cash basis, local government sector (i.e. municipalities and regions) finances should be in balance, but based on national account

[1]The agreement on more years on the labour market (*Flere år på arbejdsmarkedet*) from June 2017 entails a one-time tax free payment of early retirement contributions of approx. DKK 4 bn. in 2018, while the agreement on housing taxation (*Tryghed om boligbeskatningen*) from May 2017 implies a compensation of homeowners of approx. DKK 5¼ bn. in 2020, 7¾ bn. in 2021, and 2½ bn. in 2022.

principles there may in some years be small surpluses or deficits. The budgets of the social security funds are also assumed to be balanced throughout the projection period.

**Table 3.2**

**Budget balance by subsectors**

| Per cent of GDP | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| Central government | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Local government | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Social funds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Source: Statistics Denmark and own calculations.

## 3.2 Structural budget balance

The structural budget balance is a calculated measure of the underlying position of public finances at the given fiscal policy and is the main instrument in the planning of fiscal policy. The structural budget balance is in contrast to the actual budget balance corrected for business cycles and a number of temporary conditions and is therefore a more robust measure of the real financial position.

The updated projection in the Convergence Programme is based on the assessment in *Economic Survey*, December 2018 and other new information including new political initiatives since the latest medium term projection conducted in August 2018, *cf. box 1.2 in chapter 1*.

**Table 3.0**

**Estimated structural budget balance**

| Per cent of GDP | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Convergence Programme 2019 | 0.0 | -0.1 | 0.0 | 0.2 | 0.4 | 0.3 | 0.1 | 0.0 |
| Latest assessment | -0.2 | -0.1 | -0.1 | 0.1 | 0.4 | 0.2 | 0.0 | 0.0 |

Note: Estimates of the structural budget balance in the latest assessment are based on *Economic Survey*, December 2018 for 2018-2020 and *Updated 2025-projections*, August 2018 in 2021-2025.
Source: *Updated 2025-projections*, August 2018, *Economic Survey*, December 2018 and own calculations.

The updated projection in the Convergence Programme estimates a balanced structural budget in 2025. Within the target of structural balance in 2025, the structural budget balance shows an underlying improvement compared to the assessment in August 2018. The underlying structural improvement should primarily be viewed in context with updated estimated revenues from the structural equity income tax and corporate taxes *cf. below*.

Contrarily, the budget balance is worsened by an adjusted estimate of the extent of conversions to age pensions (alderspension), where the extent of conversions is expected to be smaller compared to the August-assessment, *c.f. Updated 2025 projection: Basis for* *expenditure ceilings 2020, August 2018*. The impact on the budget balance stems from the time of taxation, where age pensions are taxed when deposited, whereas deductible pension contributions are taxed when they are paid out. Additionally, the updated estimates of revenues from property taxation, including the adjusted plan for implementing the new property valuations, are incorporated.

The overall underlying improvement of the public finances contributes to an increase in the fiscal space towards 2025, *cf. section 3.4*. Including the effect of the increased fiscal space, the structural budget balance is improved by approx. 0.1 per cent of GDP on average from 2020 to 2025, *cf. table 3.3*.

The Danish economy is currently in an economic upturn. Thus, the improvement of the structural budget balance should be viewed in connection with the fact, that fiscal policy that should have a dampening impact on capacity pressure in order to contribute to a balanced and continual upswing.

In connection to the Danish Convergence Programme 2019, an update of the method used by the Ministry of Finance in the assessment of a number of structural revenue levels that enters into the calculation of the structural budget balance has been implemented, *cf. box 3.1*.

**Box 3.1**

**Updated methods in calculating the structural revenues of equity income tax, corporate tax and registration tax**

- **Equity income tax:** The method used to calculate the structural revenue from equity income tax has been adjusted to better reflect the development in the assets and incomes that serves as the foundation of the equity income tax. Until now the structural revenues from equity income tax have been calculated using a 7-year centered moving average. The basis of the adjusted method relies, among other things, on the prerequisites regarding wealth and the implicit tax rate on the Danish households' shareholdings and foreign investors' holdings of Danish shares as well as equity income tax of dividends from main shareholders' unlisted shares.

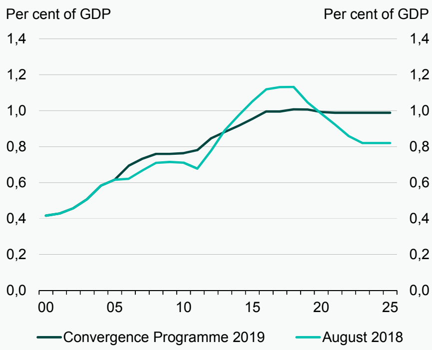
- **Corporate tax:** The updated calculation of the structural revenue from the corporate tax (exluding hydrocarbon tax) takes into account the effects of discretionary tax policy in historical years before a basis for the future revenue is calculated. Similarly, the structural revenue is now based on an updated time period which is both extended backwards and incorporates the development in recent years.

- **Vehicle registration duty:** A new method for calculating the future structural revenue from the vehicle registration duty has been implemented in order to better reflect a provisional Projection 2019 from the Danish Energy Agency. The method incorporates provisional estimates of the consequences of an expected increase in low- and zero-emissions vehicles due to the technological development and stringent rules regarding the emission of new vehicles in EU after 2021. The increase in electric and plug-in hybrid vehicles affects the revenue from the registration tax because these types of vehicles obtain a larger deduction due to better fuel economy than conventional vehicles, and because the taxation is more lenient for electric and plug-in hybrid vehicles up to 2022.

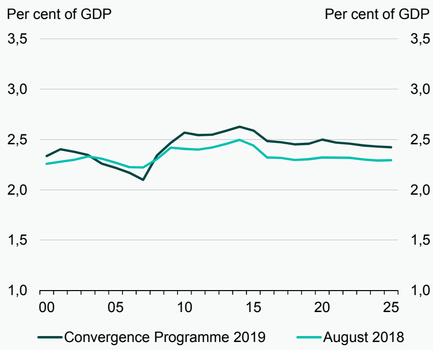
## Box 3.1 (continued)

The effect of the updated structural revenues for equity income tax, corporate tax and vehicle registration duty is depicted in figure a-d. In total, the updated structural revenues contribute to an increase in the structural budget balance by approx. ¼ per cent of GDP in 2025. More information about methods and prerequisites used in updating the structural revenues can be found on www.fm.dk.

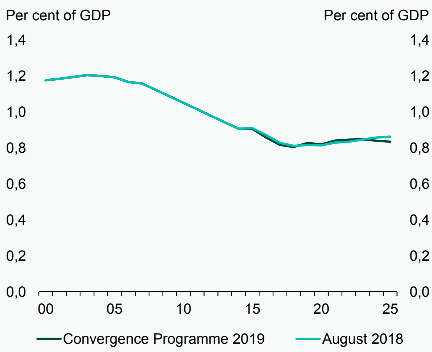
### Figure a
**Structural revenue from equity income tax**



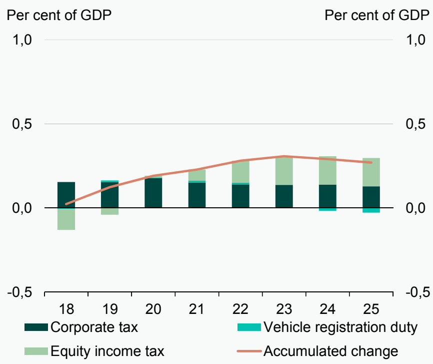

### Figure b
**Structural revenue from corporate tax**[1)]




### Figure c
**Structural revenue from vehicle registration duty**




### Figure d
**Accumulated changes from new structural levels**




1) The reduction in structural revenues from corporate taxation (excl. hydrocarbon tax etc.) from 2001 to 2007 especially reflects the rate reductions from 34 per cent in 1998 to 25 per cent in 2007. The rate reductions were, among other things, financed by a tightening of the depreciation regulations, which generated temporary (non-structural) revenues. The increase from 2008 to 2010 reflects among other things a phased-in financing of the rate reduction in 2007, tightening of the depreciation regulations and interest deduction limiting rules. Corporate tax initiatives in *Spring package 2.0* from 2009 further contributes to an estimated increase from 2008 to 2010 in structural corporate tax revenue.

The structural budget balance in 2019 and 2020 is based on *Economic Survey*, December 2018 and corrected for the effect of updated structural revenues and the effect of a change in behavior concerning age pensions. Thus, the estimates of the structural budget balance in 2018-2020 do not reflect a full assessment of the business cycle, and the numbers should be interpreted with some caution until the full assessment in *Economic Survey*, May 2019.

## From actual to structural budget balance

The structural budget balance is calculated by correcting the actual balance for cyclical effects and the impact of other temporary factors, including the often very large fluctuations in the pension yield tax and North Sea revenues. Thus, the structural budget balance in a given year is an estimate of the size of the general government surplus or deficit under normal conditions, i.e. in a situation where economic activity is neither particularly high nor low and where the public finances are not affected by temporary factors.

As an example, the structural deficit of 0.1 per cent of GDP in 2019 is based on the estimated actual deficit of 0.1 per cent of GDP, cf. table 3.4 (row 1). As the current economic situation (as measured by a weighted output and employment gap) is estimated as being stronger than under normal circumstances, the actual balance is adjusted for the positive cyclical impact on public finances. The cyclical strengthening of the budget balance is estimated at approx. 0.8 per cent of GDP (row 2).

In addition, the actual balance is corrected for a number of fluctuations in specific budget items (rows 3-9), where the revenue from the North Sea, pension yield tax, corporate taxes, equity income tax and vehicle registration duty etc. in total is estimated to be approx. 0.8 per cent of GDP below the structural level in 2019. This correction is mainly driven by low expected revenues from the pension yield.

Finally a correction is made for other factors (row 10), namely reflecting temporary factors (in addition to one-offs in the special budget items), which affect the actual balance in a given year but are not considered to be structural, *c.f. appendix table 3.3*. In 2019, this correction corresponds to 0.0 per cent of GDP.

The structural deficit limit in the Budget Law is 0.5 per cent of GDP and corresponds to Denmark's Medium Term Objective (MTO), which is determined in the EU Stability and Growth Pact. The structural budget balance is within the limit in all years towards 2025.

**Table 3.4**

**From actual to structural budget balance**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025[6)] |
|---|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | | |
| **1. Actual balance** | **0.2** | **-0.1** | **-0.1** | **-0.2** | **0.0** | **0.0** |
| *Contribution to the actual budget balance:* | | | | | | |
| 2. Cyclical adjustment | 0.5 | 0.8 | 0.9 | 0.7 | 0.3 | |
| 3. Corporate taxes[1)] | 0.2 | 0.1 | -0.1 | 0.0 | 0.0 | |
| 4. Vehicle registration duty | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | |
| 5. Equity income tax | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | |
| 6. Pension yield tax | -0.8 | -1.0 | -0.9 | -0.9 | -0.6 | |
| 7. North Sea revenues[2)] | 0.0 | -0.1 | -0.1 | 0.0 | 0.0 | |
| 8. Net interest payments[1)] | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | |
| 9. Special budget items[)3] | -0.2 | 0.0 | -0.2 | -0.3 | -0.1 | |
| 10. Other factors[4)] | -0.1 | 0.0 | 0.1 | 0.0 | 0.0 | |
| **11. Structural balance (1-2-3-4-5-6-7-8-9-10)[5)]** | **0.0** | **-0.1** | **0.0** | **0.2** | **0.4** | **0.0** |
| | | | | | | |
| *Memo item: Weighted cyclical gap* | *0.7* | *1.1* | *1.2* | *0.9* | *0.3* | |

1) Excl. revenue relating to North Sea activities.
2) The structural level for years up to 2022 is based on the structural revenue as of Updated 2020-projection (September 2015) for the years 2018 and 2019, 2020-projection (August 2016) for 2020, 2025-projection (August 2017) for 2021 and 2025-projection (August 2018) for 2022, adjusted for the effect on fiscal sustainability due to revised future North Sea revenues. The permanent effect of updated revenues in 2016 corresponds -0.10 per cent of GDP in 2018-2019, -0.03 per cent of GDP in 2020 and -0.01 per cent of GDP in 2021 and 2022. The revenues are further adjusted for the direct consequences on the North Sea revenues towards 2020 of the agreement on recovery of the Tyra oil field.
3) 2018 is corrected for the one-time tax-free payments of early retirement contributions following the Agreement on more years on the labour market (June 2017), corresponding to approx. DKK 4 bn. The years 2020-2022 are corrected for the reimbursement of property taxes as a consequence of the transition to the new real estate valuation system (following the Agreement on housing taxation (May 2017). It is assumed that the compensation for property owners following the new property valuations amounts to approx. DKK 5¼ bn. in 2020, DKK 7¾ bn. in 2021 and DKK 2½ bn. in 2022
4) Incl. correction for differences between the commitment level and payouts regarding foreign aid and conversions from percent of actual GDP to per cent of structural GDP. Moreover, there are corrections for the following temporary conditions: Due to the tax rebate regarding the restructuring of existing capital pensions it is estimated that the ordinary capital pension tax revenues of DKK 5 bn. in 2013 and approx. DKK 1 bn. in 2014, respectively, have been carried forward from the period 2014-2019. Further, in 2018-2021 a correction is made for the fighter jet investment, which is planned in the period 2021-2026, but affects the structural budget balance through a 7-years moving average. Lastly, a separate correction is made in order to include the updated estimate in regard to conversions to age pensions in 2019 and 2020 compared to the estimates in *Economic Survey, December 2018.*
5) The structural budget balance is recorded in per cent of structural GDP.
6) From 2023 and onwards the economy is assumed structural and the actual and structural budget balance is thus equal in these years.

Source: Statistics Denmark and own calculations.

## 3.3 Fiscal impact on economic activity

The fiscal and structural policy together are estimated to dampen the capacity pressure by approximately 0.1 percent of GDP towards 2025 on average, measured by the fiscal impacts, *c.f. table 3.5*. The impact on the capacity pressure can tentatively be divided into the contribution of the impact of fiscal policy on the demand and impact of the structural policy on the capacity pressure.

Under the current conditions, fiscal policy is estimated to have a minor positive impact on GDP-growth towards 2025 through increased demand. The development of the fiscal policy effect on demand reflects amongst other things the relatively moderate growth in public consumption, which in itself dampens the capacity pressure. In the opposite direction, the estimated evolution of public investments and other public expenses are increasing the capacity pressure, including the reserve for other priorities. Moreover, the dismantling of PSO charge[2] and the agreement on lower tax on labour income and larger deductions for pension contributions both have a moderately positive effect on demands towards 2020.The fiscal and structural policy having a moderately dampening effect on the capacity pressure towards 2025 should be seen in the light of the structural policy increasing the labour supply and capacity in the production. The growing labour supply can largely be attributed to adopted reforms, including the Retirement Reform Agreement (2011). Overall, the structural policy has a dampening effect on approximately 0.2 percent annually in 2018-2022 and 0.1 percent subsequently.

**Table 3.5**

**Fiscal and structural policy effect on the capacity pressure (annual effects)**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| **Percent of GDP** | | | | | | | | |
| Fiscal policy effect on capacity pressure | 0.2 | 0.0 | 0.1 | 0.2 | -0.1 | 0.0 | 0.0 | 0.0 |
| Structural policy effect on capacity pressure | -0.2 | -0.2 | -0.2 | -0.2 | -0.2 | -0.1 | -0.1 | -0.1 |
| **Overall effect on the capacity pressure** | **0.0** | **-0.2** | **-0.1** | **0.0** | **-0.3** | **-0.1** | **-0.1** | **-0.1** |

Note.: The overall effect on the capacity pressure describes the fiscal and structural policies' contribution to changes in the output gap in a given year. The fiscal policy's effect on GDP-growth solely reflects the effect on demand.
Source: Statistics Denmark and own calculations.

The overall moderately dampening effect on the capacity pressure must be seen in relation to the Danish economy currently being in an economic upturn, where it is necessary for the economic policy to be contractionary. A too expansionary fiscal policy would imply a risk for increasing the capacity pressure and contribute to creating undesirable unsustainability. On that basis, the projected policy in line with the fiscal policy estimated

[2] PSO is short for Public Service Obligation. PSO-revenues depend, among other things, on electricity price developments and the expansion of renewable energy (VE), since the PSO-rate is adjusted quarterly in order to correspond to the PSO-subsidies. This implies that the estimated PSO-revenues are subject to considerable uncertainty and can vary from year to year.

development of the structural budget balance, will support a balanced and sustainable upturn.

The share of the fiscal space not predisposed for public consumption is technically included in the projection as a transfer to the private sector. The actual impact of the fiscal policy on the economy towards 2025 will depend on the allocation. In isolation, the dampening effect on the capacity pressure will be smaller if a larger part of the fiscal space is allocated to increased public consumption expenditures, and potentially larger if the fiscal space is disposed to initiatives, which increase labour supply, e.g. tax initiatives aimed at increasing the benefit from employment.

## 3.4 Fiscal space

The fiscal space towards 2025 is a measure of how much space there is for new political tax and expenditures, including real growth in public consumption or other political initiatives within the goal of structural balance in 2025. In the absence of new funding, the fiscal space must cover, among other things, the annual budget agreements with municipalities and regions, as well as the budget bill.

In the latest medium term projections from August 2018, the fiscal space was estimated at DKK 27½ bn. based on the public consumption level in 2018. The fiscal space for 2019 is allocated in connection to the budget bill for 2019. With that taken into account, the fiscal space stated in August 2018 amounts to approx. DKK 23½ bn. towards 2025 reflecting that one year less is included in the aggregate.

The updated medium term projection in Convergence Programme 2019 includes the impact of political agreements since the August-projection and new information etc., *cf. Chapter 1*. On that basis, the fiscal space has been calculated to approx. DKK 24½ bn. towards 2025 compared to the 2019 level, *cf. table 3.6*.

**Table 3.6**

**Updated fiscal space**

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|
| **Compared to the 2019-expenditure level (DKK bn. 2019 prices)** | | | | | | |
| Updated 2025-projections, August 2018 | 1¼ | 3¼ | 8¼ | 14 | 19¼ | 23½ |
| Convergence Programme 2018 | 1½ | 2½ | 7¾ | 14 | 19¾ | 24½ |

Note.: The fiscal space is calculated with uncertainty namely after the years with expenditure ceilings 2018-2022. The uncertainty is increasing over time.
Source: *Updated 2025-projections: Basis for expenditure ceilings 2022*, august 2018 and own calculations.

Out of the total fiscal space, approx. DKK 14½ bn. is placed as growth in public consumption expenditures, *cf. detailed below,* whereas the residual fiscal space of approx. DKK 13¼ bn. is placed as a reserve for other priorities outside public consumption. The updated fiscal space reflects amongst other things updated structural revenue levels from equity income tax and corporate tax and a funding contribution from the fiscal space in *Agreement on new regulation of the state pension and the introduction of compulsory savings for the public transfer recipient (November 2018), cf. box 3.2*.

**Box 3.2**

**Changes in fiscal space since August 2018**

Since the updated medium term projection in August 2018 a number of political agreements, which affects the fiscal space, *cf. table a*.

- *Agreement on new regulation of the state pension and the introduction of mandatory pension savings for the public transfer recipient (November 2018)* implies among other things that the state pension henceforth will be valorized in accordance with the wage growth, thus without any deductions for the rate adjustment pool. Moreover, a compulsory pension saving scheme for public transfer recipients is implemented. The agreement includes a funding contribution from fiscal space of approx. DKK 1 bn. in 2025.

- Structural improvement of public finances enables more fiscal space: In the updated medium-term projection, the public finances are evaluated to improve compared to the augustassessment, stemming among other things from updated calculations of the structural revenues from equity income tax and corporate taxation. An adjusted projection of conversions to ge pensions and updated revenue from property taxation including the updated plan for new property valuation pulls in the opposite direction with regards to the fiscal space. Overall, the structural improvement of the public finances increases the fiscal space with DKK 2 bn. in 2025 within the government's target of structural balance.

- Other factors: Includes a number of technical adjustments including altered prerequisites for the Danish EU-membership contribution, which are subject to spending ceilings towards 2022. Overall, other minor factors reduces the fiscal space with approx. DKK ¼ bn. in 2025.

**Table a**
**Changes in fiscal space since August 2018**

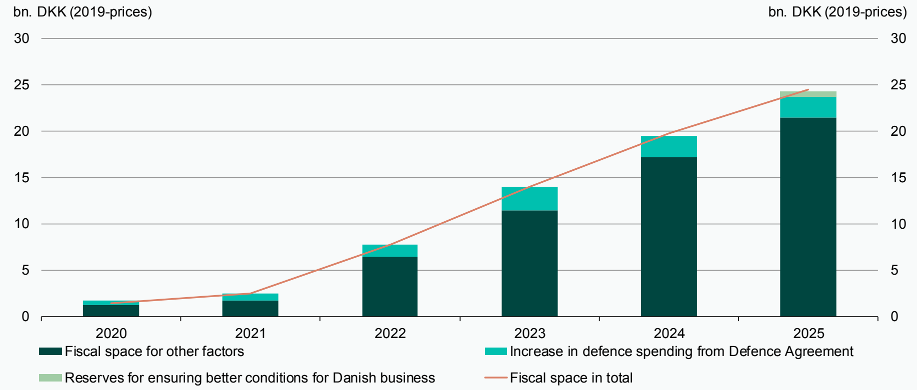
| | 2025 |
|---|---|
| **DKK bn. (2019-level)** | |
| **Updated 2025-projection, August 2018** | **23½** |
| + Agreement on mandatory pension savings | -1 |
| + Underlying improvement of the structural budget balance | +2 |
| + Other factors | -¼ |
| **Convergence Programme 2019** | **24½** |

Note: Fiscal space is calculated to the expenditure level in 2019. Numbers are rounded to the nearest quarter of a bn. DKK. The fiscal space is calculated with uncertainty, which is increasing over time.
Source: Statistics Denmark and own calculations.

Funds for the agreed-upon increase in defense spending related to The *Defense agreement (January 2018)* and funds reserved for ensuring better conditions for Danish businesses related to *The North Sea agreement (March 2017)* is included in the fiscal space. When excluding these, the fiscal space for other priorities amounts to approx. DKK 21½ bn. towards 2025, *cf. figure 3.1*.

**Figure 3.1**

**Fiscal space towards 2025**




Note: Noteworthy, the defense agreement spans from 2018-2023. A part of the additional funding for defense is categorized as public consumption, which is financed from the fiscal space and the increase in defense spending which follows the defense agreement is technically maintained on its 2023-level in 2024-2025.
Source: Statistics Denmark and own calculation.

The overall fiscal space is limited in the coming years. In the absence of new financing, the fiscal space has, as mentioned, to cover budget bills and the annual agreements with municipalities and regions etc.

Noteworthy, the medium-term projections for the public finances are calculated with uncertainty, which is increasing over time. Currently, uncertainty is connected with the future Danish EU-membership contribution following the determined EU's multiannual financial framework for 2021-2027 and also including its dependence on the outcome of Brexit. Moreover, the agreed-upon political initiatives related to *The agreement on restructuring vehicle registration duty (September 2017)* and *The energy agreement 2018 (June 2018)* requires a funding contribution from road taxes from 2020 and a temporary energy tax in 2021-2025.

The budgeted surpluses from the Employers Educational Reimbursement system (Arbejdsgivernes Uddannelsesbidragsordning) are reflected in 2018 and 2019 in the assessment in *Economic Survey, December 2018*. In the medium-term projection, revenues and expenditures related to the system are technically extended towards 2025.

In the estimation of the projection, the Danish Energy Agency's preliminary base projection 2019 is included, thus also a gradual increase of electric vehicles towards and especially after 2025, which alone pulls in the direction of a lower structural revenue from vehicle registration duty and fuel tax. There is a significant uncertainty associated with the technological development of electric vehicles and the following consequences for the related tax revenues. Improved fuel economy for conventional vehicles (petrol and diesel) alone will pull in the direction of reducing the vehicle registration duty revenues at the current mileage limits for deductions/supplements for good/bad fuel efficiency (estimated as corresponding to approx. 0.15 per cent of GDP towards 2025). In relation to *the agreement on restructuring vehicle registration duty (September 2017)*, it has been agreed upon, that the revenues from vehicle registration duty must be robust to improved fuel economy. In the projection in the convergence programme, a funding contribution which counteracts the above reduction is included.

## 3.5 Public consumption and investment

### Public consumption

In *Economic Survey,* December 2018, real public consumption expenditure is expected to increase by 0.4 per cent in 2018 and 0.5 per cent in 2019. For 2020-25 real growth in public consumption expenditure is based on the government's goal of a baseline real growth in public consumption expenditure of 0.3 per cent a year in addition to the share of the increase in defence expenditure categorized as public consumption expenditure, *cf. Agreement on defence 2018-2023* (*Aftale på forsvarsområdet 2018-2023*). Thus, real growth in public consumption expenditure (excl. consumption of fixed capital) is 0.4 per cent per year on average in 2020-2025, *cf. figure 3.2*.

Based on these presumptions, public consumption expenditure as a share of GDP is roughly constant from 2019 to 2025, *cf. figure 3.3*. The presumptions behind the real growth in consumption expenditure partly reflect that the projection includes a reserve for political priorities.

**Figure 3.2**

**Real growth in public consumption expenditure**

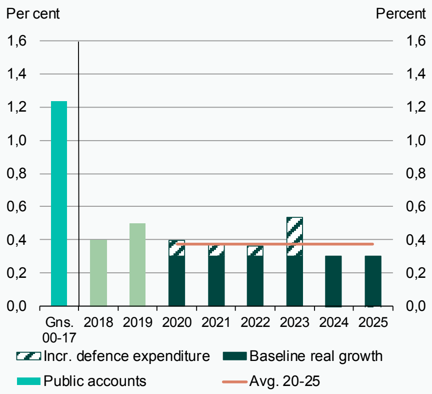
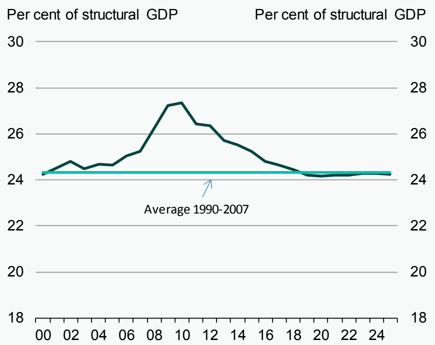



**Figure 3.3**

**Level of public consumption expenditure**




Note: Real growth in public consumption expenditure is measured by the input approach. Public consumption expenditure in figure 3.2 excludes consumption of fixed capital, whereas public consumption expenditure in figure 3.3 includes consumption of fixed capital.
Source: Statistics Denmark and own calculations.

## Public investment

The level of public investment as a share of GDP has been at a historically high level in recent years. This is expected to continue in the coming years, *cf. figure 3.4*.

Compared to the assessment in the updated 2025-projection of August 2018 the level of public investment in the medium-term projection has been increased following political agreements. The adjustments namely reflect an increase of the public investment in buildings and facilities due to *Agreement on a connected Denmark – Investment plan 2030 (Aftale om et sammenhængende Danmark – Investeringsplan 2030), cf. box 3.3*. The infrastructure plan prioritizes an increase in public investment by DKK 4½ bn. in 2021-2025.[3] In addition, *Agreement on stronger health care* (*Aftale om et stærkere sundhedsvæsen – tættere på dig*) contains an increase of public investments by DKK 0.3 bn.

With the adjustments, the level of public investments is estimated at 3.4-3.6 per cent of GDP in 2019-25. This is a high share compared to the years before the financial crisis. The medium term projection implies that the level of public investement will increase from DKK 79.9 bn. in 2019 to DKK 88.8 bn. in 2025 (2019 prices).

**Figure 3.4**

**Public investment including research and development**

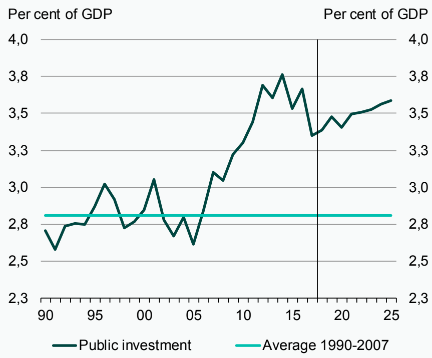
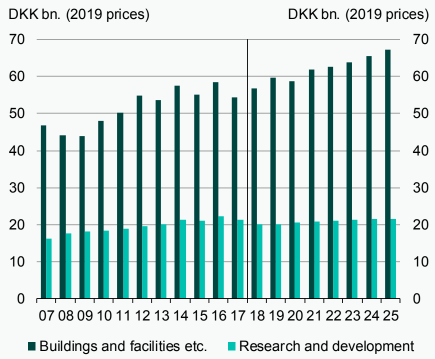



**Figure 3.5**

**Public investment by components**




Source: Statistics Denmark and own calculations.

Public investment mostly consist of investment in buildings and facilities etc., *cf. figure 3.5*. Investment in buildings and facilities is also the main driver behind the increase in public investment in the projection period.

[3] Public investment in the national accounts is measured including VAT. An increase of DKK 4½ bn. thus corresponds to an increase of public investment by DKK 5¼ bn. in the national accounts.

**Box 3.3**

**Agreement on a connected Denmark – Investment plan 2030**

In March 2019 a political agreement on an infrastructure plan for 2021-2030 was reached. The agreement is expected to result in investments on transport infrastructure of approx. DKK 112.7 bn., of which DKK 61.2 bn. is targeted roads and DKK 51.5 bn. is targeted railways.

The agreement implies the commisioning of new road and railway projects as well as expansions and upgrades of existing road and railway infrastrucutre. In addition, the agreement includes funding for improved accessibility, traffic safety, noise reduction, bicycle infrastructure etc.

The agreement contains the following funding increasing public investments:

- Yields from the Great Belt (Storebælt) in addition to the previously agreed of DKK 7.9 bn. in 2024-2030
- More effective operation of railways of DKK 1.1 bn. in 2025-2030
- Revenue from yields to A/S Øresund of DKK 5.8 bn. in 2021-2030
- Revenues of at least DKK 1.5 bn. from the sale of parking houses by the Copenhagen Airport Station

The effects of the agreement are reflected in the projection of the level of public investment, and public investments are thus increased towards 2025.

## 3.6 Public expenditures and revenues

The tax burden and expenditure burden reached high levels in the wake of the financial crisis, which was characterized by a strong growth in public expenditures. Taking into account temporary contributions, such as fluctuations in the business cycle, the expenditure burden has been decreasing since 2012, while the tax burden, adjusted for a number of temporary conditions, has been decreasing since 2015, *cf. figure 3.6 and figure 3.7*.

**Figure 3.6**

**Tax burden**

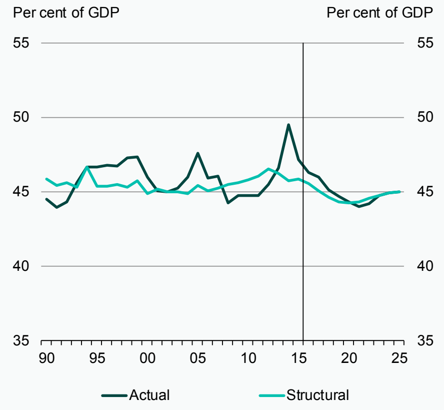
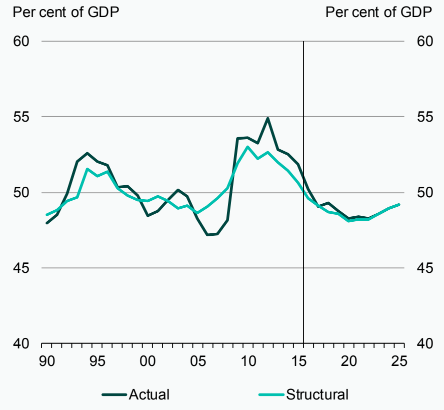



**Figure 3.7**

**Expenditure ratio (primary expenditures)**




Note: The tax burden is measured excl. North Sea revenues. The primary expenditures consist of public expenditures excl. interest payments. There is no official measure of the structural tax burden and expenditure ratio. The figures reflect approximated measures of the structural tad burden and expenditure ratio, taking business cycles, one-offs and temporary fluctuations in pension yield taxation revenues into account. The method corresponds to the calculation of the structural budget balance.

Source: Statistics Denmark and own calculations.

## Public expenditures

Total public expenditures are estimated at 50¼ per cent of GDP in both 2018 and 2025, *cf. table 3.7*. This is partly due to the fact that GDP is estimated to be approx. 0.6 pct above the structural level in 2018, while GDP in 2025 is presumed to be at the structural level.

The public consumption expenditures grow moderately in the projection, corresponding to the government's goal of a baseline growth rate of 0.3 per cent per year in addition to the increased defence expenditure following the agreement on defence until 2023.The moderate growth in public consumption is partly offset by the inclusion of a reserve for political priorities which is increasing as a share of GDP towards 2025.

Public investements are growing as a share of GDP in the projection, while subsidies as a share of GDP are declining. The growth in investments is mainly due to political agreements, while the decline in subsidies is mainly due to decreasing expenditures for PSO towards 2025.

**Table 3.7**

**Composition of public expenditure**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025[3)] |
|---|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | | |
| Public expenditure (expenditure ratio)[1)] | 50.3 | 49.7 | 49.2 | 49.3 | 49.2 | 50.3 |
| Primary expenditures | 49.3 | 48.7 | 48.3 | 48.4 | 48.3 | 49.2 |
| - public consumption | 24,6 | 24.4 | 24.2 | 24.2 | 24.2 | 24.2 |
| - public investment[2)] | 3.4 | 3.5 | 3.4 | 3.5 | 3.5 | 3.6 |
| *of which research and development* | *0.9* | *0.9* | *0.9* | *0.9* | *0.9* | *0.9* |
| *of which buildings and facilities etc.* | *2.5* | *2.6* | *2.5* | *2.6* | *2.6* | *2.7* |
| - income transfers | 16.3 | 16.2 | 15.9 | 15.9 | 15.9 | 16.2 |
| - subsidies | 1.8 | 1.7 | 1.6 | 1.6 | 1.6 | 1.5 |
| - other primary expenditures (incl. reserve) | 3.2 | 3.0 | 3.1 | 3.2 | 3.1 | 3.7 |
| Interest expenditures | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 |

1) Total public expenditures (and revenues) differ from Statistics Denmark's measure. Here the expenditure ratio is measured on the basis of total expenditure figures that include all sub-elements of public consumption, including e.g. imputed expenditures in terms of consumption of fixed real capital and revenues from sales of goods and services. The budget balance is unaffected by these technical differences.
2) Public investment is measured excl. net purchases of buildings etc. Since Statistics Denmark's ESA2019-revision of the national accounts in the autumn of 2014, public investment also includes research and development spending.
3) From 2023 and onwards, projected levels are based on technical principles.
Source: Statistics Denmark and own calculations.

*Public consumption expenditures* are estimated at approx. 24½ percent of GDP in 2018 and are expected to decrease to around 24¼ per cent of GDP in 2025. This is due to the assumed real growth and the effect of reforms etc. that increase GDP.

The moderate development of public consumption is also a product of the inclusion of a reserve for political priorities, which is increasing as a share of GDP towards 2025. The reserve is included in the projection of public expenditure in the category *other primay expenditures*.

*Public investment as a share of GDP* is estimated at approx. 3.4 per cent in 2018. With the increase of the level of public investment in building and facilities etc., public investement is estimated to stay at a relatively high level towards 2025, where public investment is estimated at approx. 3.6 per cent of GDP.

*Public spending on income transfers* is estimated at around 16¼ per cent of GDP in both 2018 and 2025, *cf. figure 3.8*. This development reflects the effect of the retirement reform, which increased the voluntary early retirement age as well as the statuary age of retirement, thereby decreasing income transfers. On the other hand, the increase of the old age retirement benefits with the Budget Bill for 2019 and the expected number of recipients after 2022 increase income transfers towards 2025, *cf. figure 3.9*.

**Figure 3.8**

**Public spending on income transfers**

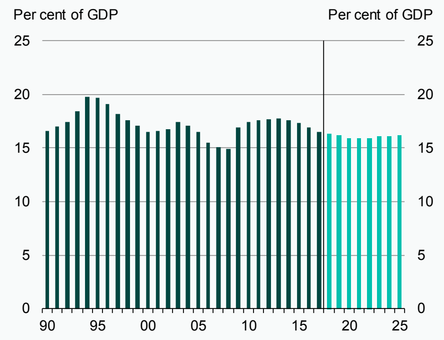
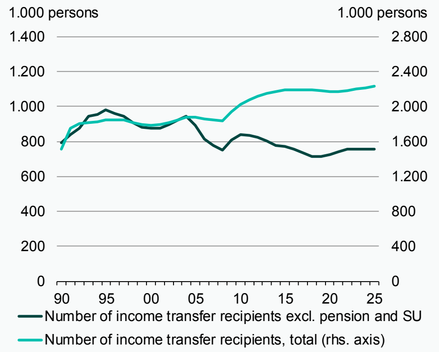



**Figure 3.9**

**Income transfer recipients**




Source: Statistics Denmark and own calculations.

*Subsidies* are expected to be reduced from *approx.* 1¾ per cent of GDP in 2018 to approx. 1½ per cent of GDP in 2025. The reduction in subsidy spending partly reflects the phasing out of the old flexi-job scheme[4] as well as decreasing expenditure for PSO towards 2025.

*Public interest payments* are estimated to account for roughly 1 per cent of GDP in both 2018 and 2025.

## Public revenues

Public revenues are expected to amount to 50.5 per cent of GDP in 2018, based on estimates from December, and are estimated to fall to 50.3 per cent of GDP by 2025, *cf table 3.8*. Personal income tax revenue amounted to approximately 21.1 per cent of GDP in 2018, and is expected to fall towards 20.9 per cent of GDP in 2025, partially due to increases in the tax deduction stemming from interest payments. Revenue from the pension yield tax is expected to amount to 0.3 per cent of GDP in 2018. The return on bonds and various derivatives held by the pension companies is estimated to stay relatively low towards 2022, as interest rates are assumed, on average, to rise in the coming years. This stems from the fact that a relatively large proportion of the pension companies' total assets are placed in bonds, whose value, all else being equal, falls as interest rates rise. Thus, fluctuations in the interest rates can be said to shift revenue between years.This may have a relatively large impact on the calculated tax burden and the actual budget balance in individual years, while the consequences for the real economy are insignificant. Revenue from the pension yield tax is therefore expected to fall to 0.2 per cent of GDP in 2019, before gradually increasing to 0.5 per cent of GDP by 2022. From

[4] The main revision of the national accounts in 2014 implies that expenses for the new flexi-job scheme are categorized as public income transfers, while expenses for the old flexi-job scheme are still categorized as public subsidies.

2023 and onwards the revenue from the pension yield tax is assumed to correspond to the structural level of approximately 1.2 per cent of GDP.

VAT revenues are expected to amount to approximately 9.8 per cent of GDP in 2018, and project to rise to approximately 10.1 per cent of GDP by 2025. The increase towards 2025 is, among other reasons, due to expected rises in the consumption ratio in the same period.

Various other indirect taxes primarily include excise duties, among others, in the form of energy- and environmental taxes, taxes on tobacco and spirit, gambling taxes as well as PSO-revenue.[5] In addition, this also includes vehicle registration tax, municipal property taxes (land tax etc.), motor vehicle weight duty from companies, duty on wage and salary costs as well as stamp duties. Revenues from the various other indirect taxes are expected to fall from approximately 6.6 per cent of GDP in 2018 to approximately 5.9 per cent of GDP by 2025. This decrease primarily stems from lower revenue from energy taxes as well as lower PSO-revenue.

The revenues from the North Sea activities are to a large degree affected by changes in production and oil price (denominated in DKK) and thus associated with a considerable amount of uncertainty. The North Sea revenues are expected to amount to approximately 0.4 per cent of GDP in 2018, 0.1 per cent of GDP in 2019 and 0.0 per cent of GDP 2020. The revenue is expected, in accordance with the projection from august, to amount to 0.3 per cent of GDP in 2025.

*Public interest income* is expected to decrease from approximately 1 per cent of GDP in 2018 to approximately 0.8 per cent of GDP by 2025. The decrease primarily stems from an expected fall in interests on tax arrears.

[5] PSO is short for Public Service Obligation. PSO-revenues depend, among other things, on electricity price developments and the expansion of renewable energy (VE), since the PSO-rate is adjusted quarterly in order to correspond to the PSO-subsidies. This implies that the estimated PSO-revenues are subject to considerable uncertainty and can vary from year to year.

**Table 3.8**

**Decomposition of public revenue**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025[8)] |
|---|---|---|---|---|---|---|
| **In per cent of GDP** | | | | | | |
| Personal income tax.[1)] | 21.1 | 21.0 | 20.8 | 20.7 | 20.7 | 20.9 |
| Labour market contributions | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Pension yield tax | 0.3 | 0.2 | 0.3 | 0.3 | 0.5 | 1.2 |
| Corporation tax | 2.8 | 2.6 | 2.4 | 2.6 | 2.6 | 2.6 |
| - Corporation tax revenue from hydrocarbon producing taxpayers | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 |
| - Various other corporation taxes | 2.6 | 2.5 | 2.4 | 2.5 | 2.5 | 2.5 |
| Value added tax | 9.8 | 9.9 | 9.9 | 9.9 | 10.0 | 10.1 |
| Various other indirect taxes | 6.6 | 6.4 | 6.3 | 6.1 | 6.0 | 5.9 |
| Various other taxes[2)] | 0.3 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 |
| Tax burden | 45.3 | 44.7 | 44.3 | 44.1 | 44.3 | 45.1 |
| Interest income[3)] | 1.0 | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 |
| Various other revenues[4)] | 4.4 | 4.2 | 4.1 | 4.3 | 4.3 | 4.5 |
| Duties etc. to EU[5)] | -0.1 | -0.1 | -0.1 | -0.1 | -0.1 | -0.2 |
| Total public revenue[6)] | 50.5 | 49.6 | 49.0 | 49.0 | 49.2 | 50.3 |
| | | | | | | |
| *Itempost: North Sea revenues[)]* | *0.4* | *0.1* | *0.0* | *0.2* | *0.2* | *0.3* |

1) Personal income taxes etc. include basic income tax, property value tax, motor vehicle weight duty from households, gift and heritage tax and other personal taxes
2) Other various taxes include media license (primarily for Danish Radio) and mandatory pension contributions for civil servants in publicly-owned companies, etc
3) Includes dividends and profit from Danmarks Nationalbank
4) Various other revenues include, among others, profits from public enterprises, operating and capital transfers from other domestic sectors and the EU, as well as imputed (calculated) revenues from both the gross operating surplus and the contributions to civil servant pensions. Furthermore, it also includes central government revenues from state participation in the oil and gas production in the North Sea and the hydrocarbon tax (in national accounts categorized as rent).
5) According to national accounting principles, these revenues are categorized as taxes and are therefore included in the tax burden, but since the revenues are going to the EU, they are not included in the revenue burden.
6) The calculation of total public revenues differs from Statistics Denmark, that among other attributes the sale of public goods and services to the revenue side and not, as here, the expenditure side, as part of the total consumption expenditure. Total revenues are calculated incl. imputed gross operating surplus being matched by the imputed depreciation costs included in the calculation of public consumption.
7) Total North Sea revenues consist of hydrocarbon tax, corporation tax on hydrocarbon manufacturing and dividend from the Danish North Sea Fund. The North Sea revenues are included in corporate taxes, interest income and other revenues.
8) Beyond 2020, projected levels are based on technical principles

Source: Statistics Denmark and in-house calculations

## 3.7 Public debt

Denmark's gross general government debt according to the EMU definition is at a safe distance from the 60 per cent of GDP-limit in the Stability and Growth Pact. It has been below 40 per cent of GDP since 2015 and was at 33.8 per cent of GDP at the end of 2018, *cf. table 3.9*. Denmark remains among the few countries in the world with triple A-ratings from all leading rating agencies.

Gross public debt is expected to fall slightly until 2020. This reflects not least that the (small) public sector deficits and the amortisation of government bonds is expected to be funded to a large degree by drawing on the central government's account at the central bank instead of issuing new bonds. Reducing the balance of the government's account at the central bank leaves gross debt in the EMU definition unaffected, *cf. box 3.4*.

Towards 2025 the debt ratio is expected to rise to slightly below 38 per cent of GDP. The increase is mainly due to the reforms *Ny model for finansiering af almene boliger, 2017 (New financing model for social housing*), where the government buys government-guaranteed mortgage bonds to fund social housing, and *Tryghed om boligbeskatningen, 2016 (Security of housing taxation)*. Both reforms imply a parallel increase of public assets and liabilities. The reduction of gross debt over time has created the necessary leeway for these initiatives, making it possible to reduce the financing costs of social housing and allowing homeowners to postpone property tax increases until they sell their home. Public debt will maintain a wide safety margin to the 60 per cent limit set by the Stability and Growth Pact.

**Table 3.9**

**Overview of public debt, end of year**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | | |
| Gross debt (EMU definition) | 33.8 | 33.4 | 33.4 | 34.0 | 35.5 | 37.8 |
| Net public debt | 1.1 | 1.1 | 1.2 | 1.4 | 1.2 | -0.2 |
| | | | | | | |
| *Memo item: Actual budget balance* | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |

Note: From 2025 onwards projected debt levels are based on technical principles.
Source: Statistics Denmark, Danmarks Nationalbank and own calculations.

Net public debt – i.e. liabilities minus assets – is the key debt concept when it comes to assessing long-term fiscal sustainability. In the *Økonomisk Redegørelse (Economic Survey)* published in December 2018, net debt was estimated to be close to zero in the years 2018-2020. This development is expected to continue towards 2025, where the estimate is that public assets will be slightly larger than public liabilities, so that net debt becomes negative.

Estimates for net public debt are particularly uncertain as on top of the public sector balance, value adjustments play in. Adjustments to public liabilities (and parts of the assets) will however have a tendency to smooth out over the years. Public assets are expected to see positive value adjustments over the years.

**Box 3.4**

**Key public debt concepts**

There are 3 debt concepts in use: public net debt, gross general government gross debt (EMU definition) and central government debt. The concepts differ in calculation methods and definitions of the public sector:

- *Net public debt* is a measure of net financial assets and liabilities for the consolidated public sector (state, municipalities, social security funds and regions). In contrast to other definitions, net public debt is measured at market value. Net public debt is key for assessing long-term fiscal sustainability.

- G*ross general government debt (EMU definition)* covers the combined consolidated financial liabilities of the state, municipalities, regions as well as social security funds. The measure is important with regard to the EU's Stability and Growth Pact, which includes a debt-to-GDP ratio of not more than 60 per cent. EMU debt is a pure gross debt concept that primarily comprises outstanding government bonds consolidated for liabilities between municipalities and the state. There is no direct connection between the government balances and changes to the EMU definition of gross debt, as budget deficits covered by drawing on (i.e. reducing) the central government account at the Danish Central Bank instead of bond issues will have no effect.

- *Central government debt* only covers the government's debt and hence disregards debt in the other public sub-sectors. Central government debt is managed by the Danish Central Bank. The measure is a gross concept but is calculated net of the government's account at the central bank and net of holdings of government securities such as social housing bonds and funds' assets.

# Appendix 3.1 Preliminary public accounts in 2018

Statistics Denmark has published preliminary figures for the public finances in 2018, *jf. Appendix box 3.1*.

*Economic Survey*, May 2019 will contain the national accounts and public finances for 2018.

## Appendix box 3.1

**Preliminary figures for the actual budget balance 2018**

Statistics Denmark's preliminary figures for the public finances for 2018 show a surplus on the actual budget balance of DKK 11¼ bn. in 2018 corresponding to 0.5 per cent of GDP. The surplus on the actual budget balance is thus approx. DKK 7½ bn. larger than estimated in *Economic Survey*, December 2018, *cf. table a*.

The larger surplus on the actual budget balance in 2018 can be attributed to larger revenues than expected, namely revenues from the pension yield tax and corporate taxes.

**Table a**
**The actual budget balance in 2018**

| DKK bn. | 2018 |
|---|---|
| **Estimate in *Economic Survey*, December 2018** | **3.9** |
| **Preliminary accounting figures (March 2019)** | **11.3** |
| **Difference** | **7.5** |
| | |
| *Pension yield tax* | *5.9* |
| *Corporate tax etc. (incl. carbon tax)* | *3.7* |
| *VAR* | *-2.1* |
| *Public consumption* | *-1.3* |
| *Personal income tax etc.* | *-1.9* |
| *Net interes payments* | *3.0* |
| *Public income transfers* | *-0.4* |
| *Other factors* | *0.5* |

The revenues from the pension yield taxa re affected by price fluctuations in financial markets and can be quite volatile from year to year. In the calculation of the structural budget balance, which is used in calculating the fiscal space, adjustments for business cycles are made as well as a range of other temporary factors that affect the public finances, including fluctuations in revenues from the pension yield tax, revenues from the North Sea etc.

The composition of public expenditure by function (the functional distribution) shows that social protection spending is by far the largest expenditure item, *cf. appendix table 3.1*. The expenditure for social protection has shown a downward trend during the period 2014-2018 from approx. 24 per cent of GDP to approx. 22 per cent of GDP, mainly due to decreasing expenditure on unemployment benefits and cash benefits. Expenditure on social protection covers among other things the majority of income transfers (old age pension, disability pension, unemployment benefit, cash benefits etc.) as well as operating expenditures for day care etc. Health care and educational spending accounted for approx. 8½ and 6½ per cent of GDP in 2018.

**Appendix table 3.1**

**Public expenditures by function, 2014-2018**

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | |
| General public services | 7.3 | 7.4 | 6.6 | 6.2 | 6.6 |
| Military defence | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 |
| Public order and safety | 1.0 | 1.0 | 1.0 | 0.9 | 1.0 |
| Economic affairs | 3.6 | 3.6 | 3.3 | 3.3 | 3.4 |
| Environmental protection | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 |
| Housing and community amenities | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 |
| Health care | 8.6 | 8.5 | 8.5 | 8.4 | 8.4 |
| Recreation, culture and religion | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 |
| Education | 7.1 | 7.0 | 6.8 | 6.5 | 6.5 |
| Social protection | 24.0 | 23.5 | 23.0 | 22.4 | 22.1 |
| **Public expenditure in total**[1)] | 55.2 | 54.5 | 52.7 | 51.2 | 51.4 |

Note: 2016-2018 reflect preliminary accounting figures.
1) Statistics Denmark's measure of the total public expenditures differ sfrom the measure in table 3.7 due to differences in the methodology. In table 3.7, the imputed expenditures in terms of consumption of fixed capital and revenues from sales of goods and services are accounted for on the expenditure side, which is not the case in Statistics Denmark.
Source: Statistics Denmark.

# Appendix 3.2 Structural budget balance 2018-2022

**Appendix table 3.2**

**Actual and structural specific budget items in the calculation of the structural budget balance**

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | |
| **1. Actual budget balance** | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 |
| | | | | | |
| **Cyclical adjustment** | | | | | |
| i) Output gap | 0.7 | 1.2 | 1.2 | 0.8 | 0.3 |
| ii) Employment gap | 0.8 | 1.1 | 1.3 | 0.9 | 0.4 |
| a) Weighted cyclical gap = i)*0.4+ii)*0.6 | 0.7 | 1.1 | 1.2 | 0.9 | 0.3 |
| b) Budget factor | 0.75 | 0.75 | 0.75 | 0.75 | 0.76 |
| c) (1-(output gap/100)) | 0.99 | 0.99 | 0.99 | 0.99 | 1.00 |
| **2. Cyclical contribution = a)*b)*c)** | **0.5** | **0.8** | **0.9** | **0.7** | **0.3** |
| | | | | | |
| **Corporate taxes** | | | | | |
| Actual revenue | 2.6 | 2.5 | 2.4 | 2.5 | 2.5 |
| Structural revenue | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| **3. Corrections for corporate taxes** | **0.2** | **0.1** | **-0.1** | **0.0** | **0.0** |
| | | | | | |
| **Vehicle registration duty** | | | | | |
| Actual revenue | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Structural revenue | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| **4. Correction for vehicle registration duty** | **0.1** | **0.1** | **0.1** | **0.1** | **0.0** |
| | | | | | |
| **Equity income tax** | | | | | |
| Actual revenue | 1.3 | 1.1 | 0.9 | 1.0 | 1.0 |
| Structural revenue | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **5. Correction for equity income tax** | **0.3** | **0.1** | **0.0** | **0.0** | **0.0** |
| | | | | | |
| **Pension yield tax** | | | | | |
| Actual revenue | 0.3 | 0.2 | 0.3 | 0.3 | 0.5 |
| Structural revenue | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 |
| **6. Correction for pension yield tax** | **-0.8** | **-1.0** | **-0.9** | **-0.9** | **-0.6** |

**Appendix table 3.2 (continued)**

**Actual and structural specific budget items in the calculation of the structural budget balance**

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | |
| **North Sea revenue** | | | | | |
| Actual revenue | 0.4 | 0.1 | 0.0 | 0.2 | 0.2 |
| Structural revenue | 0.3 | 0.3 | 0.1 | 0.2 | 0.2 |
| **7. Correction for North Sea revenue** | **0.0** | **-0.1** | **-0.1** | **0.0** | **0.0** |
| | | | | | |
| **Net interest payments** | | | | | |
| Actual revenue | 0.0 | -0.1 | -0.1 | -0.1 | -0.2 |
| Structural revenue | -0.2 | -0.2 | -0.1 | -0.1 | -0.2 |
| **8. Correction for net interest payments** | **0.2** | **0.1** | **0.0** | **0.0** | **0.0** |
| | | | | | |
| **Special budget items** | | | | | |
| Actual revenue before corrections for one-offs etc. | -0.8 | -0.5 | -0.7 | -0.8 | -0.5 |
| *Actual revenue corrected for one-offs etc. for calculation of structural revenue, cf. appendix table 3.3* | -0.6 | -0.5 | -0.5 | -0.4 | -0.4 |
| Structural revenue | -0.6 | -0.5 | -0.5 | -0.5 | -0.4 |
| **9. Correction for special budget items** | **-0.2** | **0.0** | **-0.2** | **-0.3** | **-0.1** |
| | | | | | |
| **10. Other corrections (cf. appendix table 3.3)** | **-0.1** | **0.0** | **0.1** | **0.0** | **0.0** |
| | | | | | |
| **11. 1-2-3-4-5-6-7-8-9-10 Structural budget balance** | **0.0** | **-0.1** | **0.0** | **0.2** | **0.4** |

# Appendix 3.3 One-offs in 2018-2022

**Appendix table 3.3**

**Corrections to the structural budget balance**

| | 2018 | 2019 | 2020 | 2022 | 2022 |
|---|---|---|---|---|---|
| **Per cent of GDP** | | | | | |
| **One-offs corrected for in special budget items** | | | | | |
| Extraordinary payments of early retirement contributions | 0.2 | | | | |
| Extraordinary payback of property taxes | | | 0.4 | 0.3 | 0.1 |
| **One-offs corrected for in special budget items in total** | **0.2** | **0.0** | **0.4** | **0.3** | **0.1** |
| | | | | | |
| **Other one-offs** | | | | | |
| Foreign aid – difference between commit-ted level and pay-outs | 0.0 | -0.1 | | | |
| Advancement of ordinary revenue from the capital pension tax[1)] | -0.1 | 0.0 | | | |
| Correction for conversions to age pension | | -0.1 | -0.1 | | |
| Correction for investment in fighter jets[2)] | 0.02 | 0.03 | 0.06 | -0.02 | 0.01 |
| Conversion to per cent of structural GDP | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Other one-offs in total** | **-0.1** | **-0.1** | **0.0** | **0.0** | **0.0** |

1) Deduced from the tax rebate regarding conversion of existing capital pensions the estimated ordinary revenues are moved forward with 5 billion DKK in 2013 and approx. 1 billion DKK in 2014 (net) in the period from 2014 to 2019.
2) Investments in fighter jets is treated the same way as net purchase of buildings and other investment goods in the calculation of the structural budget balance, and is calculated via a seven years moving average.

# Chapter 4
## Sensitivity analyses and comparison to Convergence Programme 2018

### 4.1 Sensitivity analyses

The expansion in recent years has brought the Danish economy into a boom phase. The boom is evolving at a moderate pace, with no current signs of significant imbalances building up, such as high wage growth or unsustainable debt accumulation. This means that the Danish economy is in good shape, also in the case of a more negative development than assumed.

Below, various scenarios are presented, which illustrate the sensitivity of the Danish economy to changes in underlying assumptions in light of the requirements set forth in the Code of Conduct for the Stability and Convergence Programmes of the EU countries. The sensitivity is illustrated by comparing the projections for 2019 and 2020 in the Convergence Programme to scenarios in which the external assumptions regarding the international economy and financial conditions are based on the assumptions of the European Commission. In addition, two additional alternative short-term growth scenarios are presented, one of which is more negative and one is more positive.

### Scenario with the European Commission's external assumptions

The external assumptions for the Danish Convergence Programme 2019 on the international economy and financial conditions are broadly in line with the assumptions in the European Commission's spring forecast, *cf. table 4.1*.

In the Convergence Programme 2019, the short-term interest rates are slightly higher in 2020, and long-term interest rates are slightly higher in both 2019 and 2020 compared to the assumptions of the European Commission. The external assumptions in the Convergence Program 2019 are based on the forecast in *Economic Survey*, December 2018, and since then interest rates have fallen, which is also the case for market expectations of monetary policy rates in the US and the euro area.

**Table 4.1**

**External assumptions in *Convergence Programme 2019 (CP19)* and the European Commission's spring forecast 2019**

| | 2018 | 2019 | | 2020 | |
|---|---|---|---|---|---|
| | CP19 | CP19 | EU | CP19 | EU |
| Growth in export markets, per cent[1)] | 3.7 | 3.9 | 3.9 | 3.4 | 3.4 |
| Crude oil price, USD per barrel | 71.4 | 64.6 | 65.5 | 67.9 | 65.0 |
| Short-term interest rate, per cent[2)] | -0.3 | -0.3 | -0.3 | 0.3 | -0.2 |
| Long-term interest rate, per cent [2)] | 0.5 | 0.6 | 0.2 | 1.1 | 0.4 |

1) Growth in export markets concerns manufactured goods and is shown as real growth in per cent.
2) European interest rates. The levels of the corresponding Danish rates have been modified in order to ensure that the spread to the euro area remains unchanged relative to the assumptions in Convergence Programme 2019.
Note: The external assumptions are based on the European Commission's spring forecast 2019 except the export market growth, which is based on the European Commission's fall forecast from November 2018.
Source: European Commission and own calculations.

An alternative scenario based on the external assumptions of the European Commission implies a higher GDP growth rate of 0.1 percentage points in 2019 and 0.2 percentage points in 2020. Employment is slightly higher and there is a slight improvement in the budget balance compared to the central projection in Convergence Programme 2019.

## Alternative scenarios

The Danish economy is fundamentally sound, and there is a solid foundation for continued growth in the coming years. The upswing has been balanced, wages are growing at a moderate pace, and households and firms have the opportunity to increase consumption and investments.

There is a possibility for a larger than assumed increase in domestic demand. Firms have a savings surplus that can be used to increase investments, and the consumption ratio remains low in historical perspective.

- *Positive scenario: Households increase consumption growth by 0.2 percentage points in 2019 and 2020, and firms increase business investment growth by 2 percentage points annually.*

  *In this scenario, GDP growth will increase by about 0.2 percentage points in 2019 and 0.3 percentage points in 2020, and employment will increase by about 9,000 persons over the course of both years. The budget balance is improved by approximately 0.2 per cent of GDP in 2019 and 0.3 per cent of GDP in 2020. The higher investment volume also has a positive structural effect on productivity growth.*

The scenario will, in isolation, increase the capacity pressure in the economy. Reforms contribute to an increase in the supply of labour in the years to come, but to the extent that labour shortages intensify, growth will be dampened through increasing capacity constraints as well as higher wages and prices.

The risk of a more negative development largely comes from abroad. There is great uncertainty surrounding the rate of growth in the Danish export markets, and international organizations, such as the IMF and the OECD, have recently revised down their growth forecasts for the global economy. At the same time, there are risks related to a possible trade conflict between the US and China and, in particular, Brexit.

In the Convergence Programme 2019, the external conditions are maintained compared to *Economic Survey*, December 2018, including a technical assumption that the trade relations between the UK and EU27 remain unchanged. If negative risks materialize, the Danish economy will also be affected.

Increased trade restrictions, for example on the basis of trade conflicts or a no-deal Brexit, will increase the costs for Danish exporters and thus dampen growth, both in the short and the longer term. In addition, lower growth abroad will lead to lower demand for Danish goods and services.

- *Negative scenario: Growth in demand from the Danish export markets is assumed to be 2 percentage points lower in both 2019 and 2020 compared to the baseline scenario in Convergence Programme 2019.*

  *The negative effects in this alternative scenario reduce GDP growth by 0.2 percentage points in 2019 and by 0.3 percentage points in 2020. Total employment is reduced by almost 11,000 persons compared to the central projection while the budget balance worsens slightly.*

A markedly more negative scenario may follow in case of, for example, a stronger increase in trading costs, further growth dampening in the foreign markets or a general change in sentiment, possibly accompanied by financial turmoil. In this case, the impact on the Danish economy will also be larger.

The Danish economy is in a good position to cope with a more negative growth path. Thus, the budget balance deficit is some way away from the limit of 3 per cent of GDP, and in both alternative scenarios, Denmark will continue to comply with the requirements of the Budget Act and the Stability and Growth Pact, *cf. table 4.2*.

**Table 4.2**

**Alternative scenarios**

| | 2019 | 2020 |
|---|---|---|
| **Convergence Programme 2019** | | |
| GDP growth | 1.7 | 1.6 |
| Employment, 1,000 persons | 3,002 | 3,028 |
| Unemployment, per cent of labour force | 3.4 | 3.3 |
| Budget balance, per cent of GDP | -0.1 | -0.1 |
| EMU debt, per cent of GDP | 33.4 | 33.4 |
| | | |
| **More positive scenario** | | |
| GDP growth | 1.9 | 1.9 |
| Employment, 1,000 persons | 3,006 | 3,038 |
| Unemployment, per cent of labour force | 3.3 | 3.0 |
| Budget balance, per cent of GDP | 0.1 | 0.2 |
| EMU debt, per cent of GDP | 33.2 | 32.8 |
| | | |
| **More negative scenario** | | |
| GDP growth | 1.5 | 1.3 |
| Employment, 1,000 persons | 2,997 | 3,018 |
| Unemployment, per cent of labour force | 3.5 | 3.5 |
| Budget balance, per cent of GDP | -0.2 | -0.4 |
| EMU debt, per cent of GDP | 33.6 | 34.0 |

Note: The table shows the registered gross unemployment.
Source: Own calculations.

## 4.2 Comparison with Convergence Program 2018

Projections for GDP growth in 2019 and 2020 and up to 2025 are largely unchanged in the Convergence Programme 2019 in comparison to the Convergence Programme 2018, *cf. table 4.3*. However, the positive output gap is now estimated to be larger than the 2018 convergence programme, implying greater pressure on the labour market and the production capacity of the economy. Furthermore, the output gap is assumed to be closed one year later compared to the Convergence Programme 2018. However, the capacity pressure is still considered to be relatively moderate.

The actual government balance has been revised up slightly in the Convergence Programme 2019 compared to the Convergence Programme 2018 and is expected to approximately balance in 2019 and 2020.

The EMU debt in the Convergence Programme 2019 is estimated to be slightly lower compared to the 2018 programme and is well below 40 per cent of GDP, i.e. having a good margin to the 60 per cent limit in the Stability and Growth Pact.

**Table 4.3**

**Changes compared to Convergence Programme 2018**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| | | | Annual change, per cent | | | |
| **Real GDP growth** | | | | | | |
| CP18 | 1.9 | 1.7 | 1.6 | 1.6 | 1.7 | 1.3 |
| CP19 | 1.7[1)] | 1.7 | 1.6 | 1.5 | 1.1 | 1.4 |
| Change | -0.2 | -0.1 | 0.0 | -0.1 | -0.7 | 0.0 |
| | | | Per cent of GDP | | | |
| **Output gap, per cent of GVA** | | | | | | |
| CP18 | 0.4 | 0.8 | 0.5 | 0.3 | 0.0 | 0.0 |
| CP19 | 0.6 | 1.2 | 1.2 | 0.8 | 0.3 | 0.0 |
| Change | +0.2 | +0.4 | +0.6 | +0.6 | +0.3 | 0.0 |
| **Budget balance** | | | | | | |
| CP18 | -0.7 | -0.7 | -0.7 | -0.6 | 0.4 | 0.0 |
| CP19 | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Change | +0.9 | +0.6 | +0.6 | +0.4 | -0.3 | 0.0 |
| **Public gross debt (EMU definition)** | | | | | | |
| CP18 | 35.6 | 34.8 | 34.2 | 36.2 | 37.1 | 39.5 |
| CP19 | 33.8 | 33.4 | 33.4 | 34.0 | 35.5 | 37.8 |
| Change | -1.8 | -1.4 | -0.8 | -2.2 | -1.6 | -1.7 |

1) The estimate for GDP growth 2018 is adjusted for a large one-off payment in the 1st quarter of 2017 for use of Danish-owned intellectual property rights, *cf. box 4.1* in *Economic Survey*, May 2018.

Source: *Denmark's Convergence Programme 2018* and own calculations.

# Chapter 5

## The period beyond 2025 and long-term fiscal sustainability

### 5.1 Development beyond 2025

The starting point for the long-term projection is a medium-term trajectory characterized by structural budget balance in 2025. After 2025, the projection is based on technical principles including Statistics Denmark's and DREAM's demographic projection and The Danish Energy Authority's projection of production and gradual depletion of the Danish oil and gas resources in the North Sea, *cf. section 5.4*.

The aim is to assess the long-term outlook of public finances including whether the economic policy is maintainable beyond the planning horizon (i.e. 2025) without leading to a persistent and unsustainable increase in the public debt. Fiscal sustainability is assessed based technical assumptions, including an unchanged tax burden beyond 2025 and technical projection assumptions concerning public spending such that expenditures per person (at a given age) grow in line with wage developments.

**Figure 5.1**

**Structural budget balance**

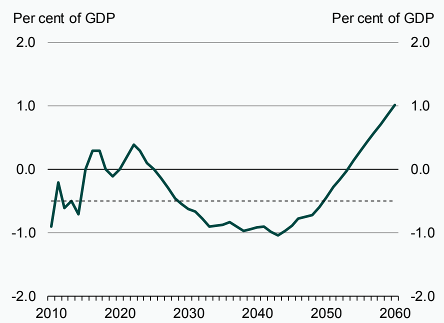
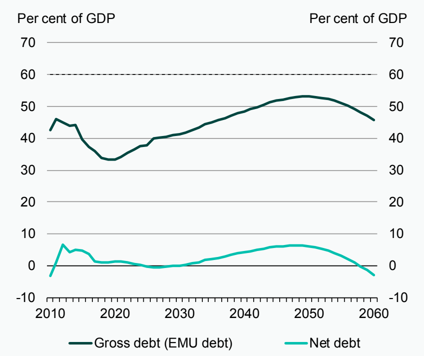



**Figure 5.2**

**EMU debt**




Source: Statistics Denmark and own calculations

After 2025, the projection entails a long period where the structural balance is worsened only to be restored after the middle of the century, *cf. figure 5.1*. The so-called hammock challenge primarily reflects the demographic development in combination with the agreed age limits of the old age pension and early retirement in relation to the development of life expectancy.

The effects of adopted reforms that increase labour supply are taken into account in the projection. This includes the gradual increase in the retirement age in accordance with the life expectancy indexation rules of the Welfare Agreement (2006) and the Retirement Reform Agreement (2011). In 2015, the Danish Parliament confirmed the increase in the age limit of early retirement to 65 in 2027 and old age pension to 68 in 2030 respectively. This is in accordance with the life expectancy indexation in the legislation.

In total, it is projected that the share of the population in employment will decrease between 2025 and 2040. Meanwhile the demographic development implies upwards pressure of the costs of elder care and health. According to the presupposed regulation of the retirement age, the share of the population in employment increases after 2040 while the demographic pressure on costs associated with long-term care and health decreases again. The indexation of the retirement age is crucial for the long run restoration of the employment ratio and public finances.

It is projected that the public gross debt (EMU definition) will increase to approx. 50 per cent of GDP towards 2050, *cf. figure 5.2*. However, the public net debt (including public assets and liabilities) remains below 5 per cent of GDP and thereby in general close to zero. The increasing public gross debt is partly reflects the agreement on housing taxes (2017) and the agreement on financing of public housing (2017), which result in increasing public assets and liabilities. Thus, the public gross debt increases without pressuring the public net wealth. Throughout the period, the public gross debt is projected to comply with the Stability and Growth Pact's limit of 60 per cent of GDP.

**Figure 5.3**

**Full-time equivalent employment share of total population**

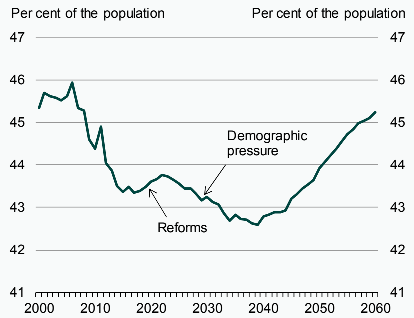
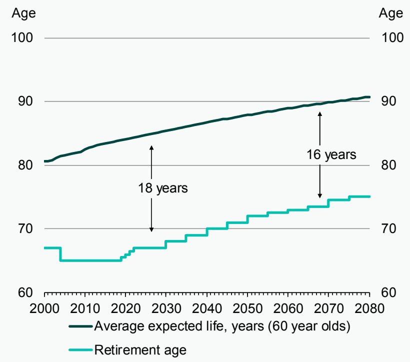



**Figure 5.4**

**Development in life expectancy and retirement age**




Source: Statistics Denmark and own calculations.

The hammock challenge primarily reflects a decreasing share of the population in employment from 2025 towards 2040, *cf. figure 5.3* and *Convergence Programme 2018*. The projected decline in the employment ratio is due to two factors. First, the generations entering the labour force between 2025 and 2040 will be smaller than the generations entering retirement. Second, the generations entering retirement towards 2025 will have longer periods of retirement on average than both past and future generations, *cf. figure 5.4.*

This reflects a higher increase in lifetime-expectancy than expected when the welfare agreement was made and that the indexation of the retirement age is limited such that it can at most be increased with one year every fifth year. The hammock challenge also reflects that revenue stemming from the North Sea activities is declining. The revenue is expected to be close to zero beyond 2045 (compared to approx. 0.3 per cent of GDP in 2025). Conversely, over time the increasing tax revenue from pay-outs of retirement schemes improves the public budget balance.

The projection in *Denmark's Convergence Programme 2019* includes the effects of the energy agreement of 2018 and a preliminary baseline projection in 2019 from The Danish Energy Authority. Among other, this contain a projection of the expected spread if low- and zero emission cars (primarily electric and hybrid cars). The projection in the convergence programme contains derived consequences for the revenue from the vehicle registration duty, fossil fuel tax and updated prerequisites of energy consumption and tax revenues in general. The rate of technological change and spread of low emission cars are subject to considerable uncertainty. Thus, the estimated consequences for e.g. the vehicle registration duty and fuel taxes are preliminary and will be improved in the work of the *Commission on green transition of passenger cars.*

**Box 5.1**

**Revenue from vehicle registration duty etc. is reduced as the extent of low or zero emission vehicles increases under the current regulation**

In the projection for *Convergence Programme* the structural development in the revenues from vehicle registration duty are updated in 2019 to 2035, including amongst other things the preliminary base projection 2019 by The Danish Energy Authority. The update incorporates – on the current basis, which will be extented in continuation of the results of the newly establish *Commison for green transition of passenger vehicles* – among other things an expectation of an increase in low or zero emmision vehicles together with tightened carbon dioxide regulations for new vehicles I EU after 2021. The increase of electric and plug-in hybrid vehicles has an effect on the revenues from vehicle registration duty, as these vehicles enables a higher deduction in vehicle registration duty reasoned by their better fuel economy.

The updated estimates for the structural revenues from vehicle registration duty in 2019 to 2035 for the *Convergence Programme* are calculated using a number of prerequisites on the development of amount of newly registrered vehicles, prices of vehicles, the composition of vehicle sizes and on its type of drive and fuel efficiency etc. Electric and hybrid vehicles together represent 40 per cent of the sales of new vehicles in 2035. After 2035, i.e. after the horizon of the The Danish Energy Authority's base projection in 2019, the structural revenue from vehicle registration duty is technically presumes to remain the same constant share of GDP.

In the projection, taxation and duty rules follows already agreed-upon policy, that is, current regulation and policy agreements, but not proclaimed targets of zero emissions in 2050 or ending the sale of conventional vehicles in 2030.

**Box 5.1 (continued)**

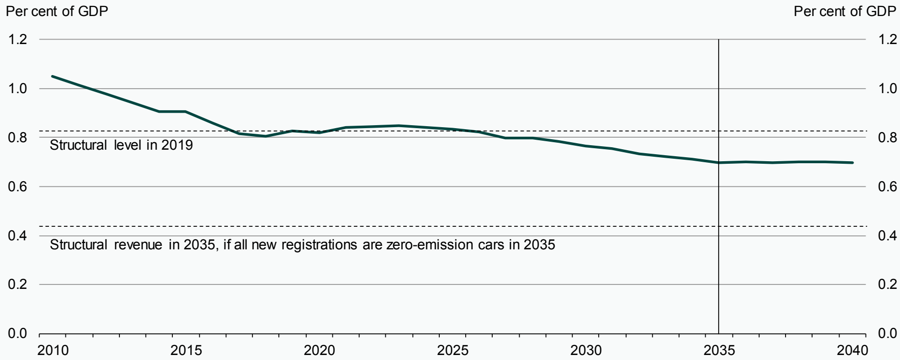
Under current regulation and policy agreements, it is estimated that the structural revenue from vehicle registration duty will amount to approx 0.8 per cent of GDP in 2019, where the actual revenue is estimated to just over 0.9 per cent of GDP. With The Danish Energy Authority's prerequisites on the increase in electric vehicles etc., the structural revenue is estimated to gradually decrease to approx 0.7 per cent of GDP towards 2035, partly caused by low emission vehicles warranting a larger deduction in vehicle registration duty for better fuel economy, *cf. figure a*. Moreover, there is a loss in revenue of fuel taxation etc. of similar size, and in total reduces the fiscal sustainability indicator with approx 0.15 per cent of GDP, *cf. secton 5.4*.

If the whole fleet of vehicles are zero emission vehicles in the long term, among other things caused by technological development, the structural revenue from vehicle registration duty under current regulation is estimated to approx. 0.4-0.5 per cent of GDP, although with uncertainty. Correspondingly, there would be a lower public revenue following a lower revnue from fuel taxation and green vehicle tax, when all vehicles are of a zero emission type.

The Danish government have established a *Commission for green transition of passenger vehicles*, which among other things shall *"deliver a concrete strategy for achieving the government's target, of all new vehicles from 2023 to be low emission vehicles in the best possible way. The Commission also have the task of developing concrete suggestions for funding, such that public revenues, which decreases along with the green transition of passenger vehicles, can otherwise be provided."*

**Figure a**

**Presumed development for structural revenue from vehicle registration duty**




Source: Own calculations.

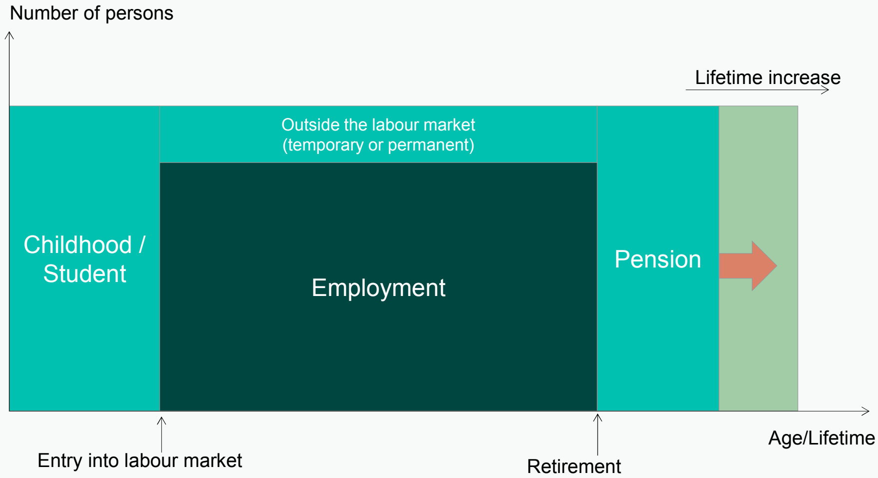
## 5.2 Indexation of the retirement age is essential for sustainable fiscal policy

In the baseline projection, the sustainability indicator (HBI) is approx. 1 per cent of GDP given the assumptions of the projections concerning the development in life expectancy and regulation of the retirement age, *cf. section 5.1*. The gradual increase in the retirement age in accordance with the life expectancy indexation rules of the *Welfare Agreement* (2006) and the *Retirement Reform Agreement* (2011) is crucial for the projection.

The long run sustainability of fiscal primarily reflects that the retirement reforms have created a mechanism which ensures that higher life expectancy lead to more active years on the labour market and a better balance between the share of the population within and outside the labour market. Without the mechanism, people outside the labour market receiving public pensions would constitute an increasing share of the population as life expectancy increases, *cf. figure 5.5*.

**Figure 5.5**

**Illustration of the link between increasing life expectancy and the share of the population, which participate in the labour market in the absence of life expectancy indexation**




This section presents a calculation of how the public budget balance would develop in the long run if the retirement age is held constant at the already legislated level of 68 years in 2030, *cf. figure 5.6 and 5.7*. In such a scenario, the public finances worsens by a little more than 1 per cent of GDP during the hammock challenge of 2041-2045, which is equivalent to approx. DKK 25 bn. (2018-level). In 2060, the deficit (including increasing interest expenditures on increasing public debt) is increased by almost 4 per cent of GDP or DKK 85 bn.

In such a hypothetical scenario, the fiscal sustainability indicator will be worsened by approx. 2¾ per cent of GDP or DKK 59 bn. per year. This will require tax increases or lower public expenditures in the same order of magnitude for the sustainability indicator to remain unchanged in relation to the baseline projection. It will require a tightening of approx. 1¾ per cent of GDP equivalent to a yearly effect on the public budget balance of approx. DKK 37 bn. in order to ensure sustainability of the fiscal policy based on additional assumptions of the convergence programme.[1]

Thus, constant retirement ages beyond 2030 will considerably worsen the foundation of financing public expenditure in the long run. This includes the possibilities of financing an increasing demand for health- and long-term care as the number of elderly increases. In this situation, a sustainable fiscal policy will presuppose a considerably higher aim for the structural budget balance in the medium term and markedly reduce the fiscal space including e.g. public expenditures.

**Figure 5.6**

**The evolution of the state pension eligibility age 2015-2060 with and without indexation of the retirement age**

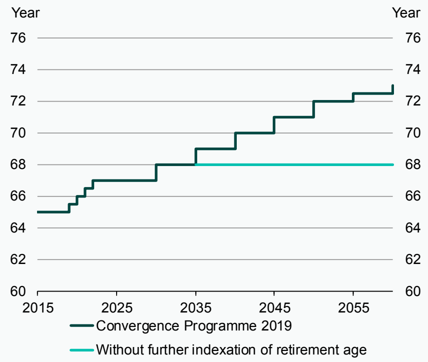
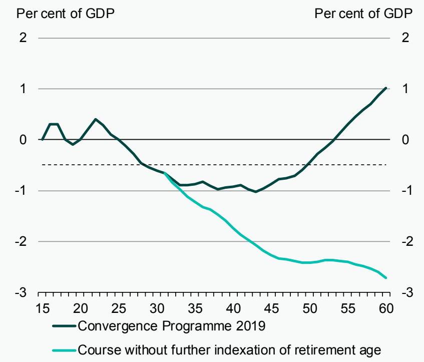



**Figure 5.7**

**The evolution of the structural budget balance with and without future indexation of the retirement age**




Source: Statistics Denmark and own calculation in connection with Convergence Programme 2019 based on the calculations used in Reply for The Finance Committee question 326 on January 28th 2019

## 5.3 Changes to the structural budget balance by 2025 and sustainability compared to Converge Programme 2018

The key medium-term objective for fiscal policy is at least structural budget balance in 2025 and fiscal sustainability, *cf. DK2025 – Growth and prosperity* (May 2017). In *Convergence Programme 2018* the structural budget balance in 2025 was in accordance with the above, while the sustainability indicator (HBI) at 1.2 per cent of GDP.

The objective of structural balance in 2025 is met in the updated *Convergence Programme 2019* projection and the sustainability indicator is estimated at 1.0 per cent of GDP, *cf. table 5.1*.

[1] This number being lower than the isolated effect from maintaining the retirement age, should be seen in the light of the fiscal sustainability indicator being estimated to approx. 1 per cent of GDP in the baseline projection (Incl. the presumed effects from an increasing retirement age in the long term). The positive sustainability in the baseline projection corresponds to the future generation past the hammock challenge years having the opportunity for a more lenient fiscal policy compared to the presumed, presuming that the projected will be realized until then.

**Table 5.1**

**Changes to the structural public balance and fiscal sustainability indicator (HBI) from CP18 to CP19**

| | Structural balance in 2025 | HBI |
|---|---|---|
| **Per cent of GDP** | | |
| ***Convergence Programme 2018*** | **0.0** | **1.15** |
| ***Updated 2025 projection (August 2017)*** | **0.0** | **1.15** |
| New structural revenue from equity income tax | 0.15 | 0.15 |
| New structural revenue from corporate tax | 0.15 | 0.15 |
| Updated profile for pension saving deposits excluding post-poned taxation (old-age saving scheme) | -0.1 | 0.0 |
| Updated prerequisites on energy consumption and a new struc-tural revenue level from vehicle registration duty | -0.05 | -0.15 |
| Adjustment of the plan of implementing new property valuations and updated prerequisites revenues from property taxation | -0.05 | -0.05 |
| Updated prerequisites on demographic costs | 0.0 | -0.1 |
| Increased fiscal space towards 2025 within the target of struc-tural budget balance | -0.1 | -0.1 |
| Other factors | 0.0 | -0.05 |
| ***Convergence Programme 2019*** | **0.0** | **1.0** |

Note.: As a result of rounding, the total change might deviate from the sum of each contribution
Source: *Convergence Programme 2018, Updated 2025 projection (August 2018)* and own calculations.

The updated projection in *Convergence Programme 2019* includes multiple new information and prerequisites etc. which affects the development both towards and after 2025.

Compared to the latest previous projection from August 2018, this projection of the structural balance and sustainability indicator includes among other things the effects from the following:

- Updated estimates of the structural revenues from equity income tax and corporate taxa are included in the projection, *cf. Chapter 3*. These together imply an improvement of the structural balance in 2025 and the sustainability indicated with approx. 0.3 per cent of GDP, *cf. table 5.1*.

- Adjusted estimates for conversions from deductable pension saving schemes to the old-age pension scheme, where following newly reported data etc., a smaller conversion extent is expected compared to that of the previous medium-term projection in August. This implies a worsening of the structural balance of approx. 0.1 per cent of GDP in 2025 while the sustainability indicator is barely changed. The effect on the balance should be seen in the light of old-age savings scheme being taxed on the deposit, contrary to deductible pension schemes, which are taxed on its payment.

- The structural revenue from vehicle registration duty is updated, including making sure of it being consistent with The Danish Energy Authority's 2019 base projection, which among other things accounts for the new EU-requirements for vehicles' carbon dioxide emmisions and an increase of electric vehicles towards 2025*, cf. box 5.1*. Moreover, the energy consumption and energy duty burden of both households and businesses is based on The Danish Energy Authority's preliminary 2019 base projection, which includes the effects from the *Energy Agreement* (June 2018) and updated prerequisites etc. The new information implies that in total the budget balance is weakened by approx. 0.05 per cent of GDP and the sustainability indicator with approx. 0.15 per cent of GDP in 2025.

- The calculations of the demographic pressure incorporates updated age-dependent costs based on individual register data estimation. The update does not have a short-term effect, but reduces the sustainability indicator with approx. 0.1 per cent of GDP.

- An update of the projection of property tax revenues etc., among other things due to the adjusted plan of implementing new property valuations, which alone pulls in the direction of weakening the structural balance in 2025 and also the sustainability indicator with approx. 0.05 per cent of GDP. [2]

- Within the target of structural balance in 2025, there is potential for a larger fiscal space compared to the August-assessment. The larger fiscal space alone weakens both the budget balance and the sustainability indicator with approx. 0.1 per cent of GDP. In the overall fiscal space, the above effect is dampened by a funding contribution from the fiscal space in the agreement on compulsory saving.

## 5.4 Principles for projecting beyond 2025

After 2025, the projection is based on technical principles including assumptions concerning demographic developments and the gradual exhaustion of the Danish oil and gas resources in the North Sea, *cf. box 5.2*.

[2] The estimate with the adjusted plan is associated with significant uncertainty, as the upcoming new valuations and thus the effect of those are unknown. Only when the final property valuations are conducted, it will possible to quantify the consequences on revenue of the adjusted plan for implementation on the estimated economic consequences by the *housing agreement*.

**Box 5.2**

**Principles for the projection after 2025**

- The projection principles after 2025 generally reflect an extrapolation of the structures of the economy as they appear in 2025. Additionally, an inclusion of agreed initiatives that have a longer lasting effect. Nominal public consumption expenditures are projected based on an assumption that expenditures per user grow in line with wages, while the number of users of public services evolves in line with the calculated impact of changing demographics, including a correction for healthy aging. Public sector wages grow in line with private wages, and public wage expenditures make up a constant share of public consumption expenditures.

- Social benefit rates are in accordance with the current regulation including the effect from *Agreement on new regulation of the state pension and the introduction of compulsory savings for the public transfer recipients* (November 2018) towards 2030, in which period an gradual increase of compulsory savings are made in accordance with the new agreement. After 2030, the social benefit rates are presumed to rise in line with the wage growth in the private sector, thus assuming that the degree of compensation during employment etc. is constant overall.

- From the outset, labour participation rates, and the propensities at which various social benefits are received, are assumed to be constant across age, gender and origin. However, the ratios are adjusted for the expected effects of changes in education composition as well as the duration of immigrants' stay in Denmark and adopted reforms.

- Gross public investment is projected in order to ensure that the growth in the public capital stock (gross and efficiency corrected) is equal to the increase in a weighted development in gross value added (GVA) in the public and private sector. The weights are 70 per cent for public GVA and 30 per cent for private GVA. The private sector share reflects public investment directed towards infrastructure. Additionally, the projection also includes the effects of the funded increase in public investments in relation with *The agreement on infrastructure* (2019).

- Public subsidies and net foreign transfers are constant relative to GDP.

- Besides the effects of adopted tax policy, the tax burden is projected to be unchanged after 2025, so tax rates in per cent remain constant, while excise duties etc. set in nominal terms are technically assumed to increase in line with price developments.

- Property taxes are projected in accordance with the rules of *the agreement on Security regarding property taxation* (May 2017). The projection accounts for the postponement of the property valuation and other new information (October 2018).

- The revenues from the North Sea activities are based on The Danish Energy Authority's longterm projection of oil and gas production. Long-term oil price assumptions are described in Chapter 2.

- Towards 2035, a development in energy consumption etc. are included, which are equal to the preliminary base projection (2019) of The Danish Energy Authority including *the Energy Agreement* (2018). After 2035, the technical setting of the projection presumes a gradual reduction in the energy intensity in both consumption and production, which reflects the ongoing improvements in energy efficiency, corresponding to that of the Converge Programme 2018.

- A gradual normalization of interest rates is assumed. Thus the 10-year interest rate on government bonds is assumed to increase to 2.7 per cent in 2025 and further to 4.5 per cent in 2040, and remain unchanged thereafter.

# Chapter 6
Public finances and institutional framework

## 6.1 Institutional framework

Economic policy is planned within the framework given by the Danish Budget Law, the government's medium term plan and the Stability and Growth Pact. The framework specifies concrete objectives for public finances in the form of long-term sustainability and structural budget balance in 2025. The goals are supported by multiannual expenditure ceilings, which are set for a continuous four-year forward-looking period for central government, municipalities and regions respectively. The expenditure ceilings are based on a medium-term projection, which implements a precautionary principle, whereby only the impact of reforms and initiatives agreed upon by a majority in the Danish Parliament are incorporated.

The expenditure ceilings are subject to continuous evaluation and monitoring to ensure compliance. Economic sanctions support compliance with the adopted expenditure ceilings, and compliance with approved budgets has strengthened in recent years.

With the Budget Law from 2012, a structural budget deficit limit has been adopted. Thus, the structural budget balance, as the key measure in planning and monitoring fiscal policy, has been fixed by law. The balance requirement of the Fiscal Compact is operationalized by the Budget Law, since the annual structural deficits must not exceed ½ per cent of GDP, corresponding to Denmark's national medium term fiscal target.

Furthermore, the Budget Law introduced binding and multiannual expenditure ceilings for central government, municipalities and regions, respectively, starting from 2014. Based on the preliminary experiences, the expenditure ceilings for central government, municipalities and regions have contributed to improve expenditure control.

Key elements of the Danish Budget Law are described in box 6.1. Furthermore, the preliminary experiences with expenditure ceilings are described in section 6.2.

**Box 6.1**

**Key elements of the Danish Budget Law**

- Within the framework of a sustainable fiscal policy, a budget balance requirement is introduced. The annual structural budget balance must not exceed a deficit of ½ per cent of GDP at the time of the budget proposal for a given fiscal year, unless extraordinary circumstances are present. Moreover, an automatic correction mechanism is activated in case of significant estimated deviation from the budget balance requirement.

- Expenditure ceilings support compliance with the overall fiscal policy targets. The ceilings set legally binding limits for expenditures in central government, municipalities and regions, respectively. The expenditure ceilings are to be adopted by the Danish Parliament (Folketinget) and cover a continuous forward looking period of 4 years. Improved budget management and economic sanctions support compliance with the expenditure ceilings.

- The Danish Economic Council continually (annually) assesses long-term fiscal sustainability and the medium-term development in the budget balance, and further that the expenditure ceilings are complied with and aligned with the medium-term fiscal objectives.

The key focal points for Danish economic policy – fixed exchange rate policy and stability oriented fiscal policy – are as follows:

Since 1982, Denmark has pursued a *fixed exchange rate policy*, initially against the German/Deutsche Mark (DEM), and since 1999 against the euro (EUR). Due to the fixed exchange rate policy, the Danish monetary policy is solely aimed at maintaining a stable level of the krone vis-à-vis the euro. A responsible and stability-oriented economic policy contributes to a credible fixed exchange rate policy, which supports continued low interest rates.

*Fiscal policy* is planned in order to ensure that annual structural deficits does not exceed ½ per cent of GDP and furthermore that the target of a structural budget balance is achieved in 2025, *cf. DK2025 – Growth and prosperity* (May 2017). Fiscal policy is planned in order to achieve a long-term sustainable development in public finances (i.e. the so-called sustainability indicator HBI must always be positive). As stated in the Budget Law, fiscal policy is subject to a precautionary principle, which implies that planned development of public spending can rely only on reforms and initiatives backed by a majority in the Danish Parliament.

*The expenditure policy* supports compliance with the fiscal policy objectives through expenditure ceilings for central government, municipalities and regions that cover approx. ¾ of total public expenditures. The expenditure ceilings support that public expenditure evolves in accordance with medium-term fiscal objectives and priorities.

*Tax policy* is based on a tax and burden stop and a number of political agreements. As part of the agreement on social assistance/cash benefit (November 2015) and the agreement on introducing an integration allowance (July 2015), the revenue have been used to finance tax cuts associated with the tax reform (February 2018) and agreement on more years on the labour market (June 2017). In May 2017, a political agreement concerning a new model for collecting property taxes was agreed upon. In addition, tax on equity income and a number of other taxes, including tax on electric heating was reduced (November 2017). Taxes on electrical heating as well as charge levied on electricity was reduced further in June 2018. Furthermore, there have been introduced reductions to the vehicle registration duty and a nominal freezing of land tax. Lastly, the housing employment scheme has been made permanent, while the equalization tax on income from pension savings and free phone taxation has been removed as of the income year 2020.

## 6.2 Expenditure control and expenditure ceilings

The introduction of binding and multiannual expenditure ceilings for central government, municipalities and regions contribute to strengthening expenditure control. Expenditure ceilings were introduced in 2014 and have currently been determined by law for the years up to and including 2021.

The expenditure ceilings are determined in line with fiscal policy objectives in government's medium-term plan. Thus, financed growth in public consumption expenditure in the medium-term projection is closely related to the expenditure policy defined by the specific expenditure ceilings.

Based on central government accounts for 2014-2017, both the central government sub-ceiling for operating expenditure and the sub-ceiling for income transfers have been complied with through all four years.

Based on preliminary accounts for 2018, expenditure ceilings are expected to be complied with.

Accounts show that municipalities have complied with the municipal expenditure ceiling in all four years in the period 2014-2017.

Likewise, regional accounts show that regions have complied with the regional expenditure ceiling in all four years in the period 2014-2017.

The final audited Accounts for municipalities and regions for 2018 have not been published yet.

# Annex tables according to EU's Code of Conduct

**Table 1a**

**Macroeconomic prospects**

| | 2018 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| | **Bn. DKK** | **Change, per cent** | | | | | |
| Real GDP | 2,047[1)] | 1.7[2)] | 1.7 | 1.6 | 1.5 | 1.1 | 1.4 |
| Nominal GDP | 2,223 | 2.5[2)] | 3.3 | 3.6 | 3.3 | 2.8 | 3.0 |
| | | | | | | | |
| **Components of real GDP** | | | | | | | |
| Private consumption | 1,051 | 2.4 | 2.1 | 2.3 | 1.8 | 1.8 | 2.0 |
| Government consumption[3)] | 548 | 0.4 | 0.5 | 0.4 | 0.6 | 0.4 | 0.5 |
| Gross fixed capital formation | 494 | 6.1 | 2.8 | 3.8 | 2.8 | 2.1 | 1.1 |
| Changes in inventories[4)] | 10 | 0.1 | -0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Export of goods and services | 1,215 | 1.7[1)] | 2.6 | 2.3 | 1.8 | 1.3 | 2.0 |
| Import of goods and services | 1,098 | 3.9 | 3.0 | 3.4 | 2.3 | 2.3 | 2.1 |
| | | | | | | | |
| **Contributions to real GDP growth** | | **Percentage points** | | | | | |
| Final domestic demand | | 2.5 | 1.7 | 2.0 | 1.7 | 1.5 | 1.4 |
| Changes in inventories | | 0.0 | -0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| External balance of goods and services | | -0.8 | -0.0 | -0.5 | -0.1 | -0.4 | -0.0 |

Note: The data for 2018-2020 are from *Economic Survey*, December 2018.
1) Based on chained 2010-prices.
2) Adjusted on a discretionary basis for a large one-off payment in the 1st quarter of 2017 for use of Danish-owned intellectual property rights, *cf. box 4.1 in Economic Survey, May 2018*.
3) Government consumption in table 1a is including depreciation.
4) Contribution to GDP growth.
Source: Statistics Denmark and own calculations.

## Table 1b

### Price developments

| | 2018 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| | Level | Rate of change, per cent | | | | | |
| GDP-deflator | 108.6 | 0.8 | 1.6 | 2.0 | 1.7 | 1.7 | 1.6 |
| Private consumption deflator | 109.4 | 0.9 | 1.5 | 1.7 | 1.9 | 1.6 | 1.7 |
| Consumer price index | 109.7 | 0.9 | 1.5 | 1.8 | 1.9 | 1.7 | 1.7 |
| HICP | 108.4 | 0.8 | 1.4 | 1.8 | 1.8 | 1.5 | 1.5 |
| Net price index | 109.7 | 0.9 | 1.5 | 1.8 | 1.8 | 1.8 | 1.8 |
| Public consumption deflator | 105.3 | 1.9 | 1.7 | 2.4 | 2.5 | 2.5 | 2.4 |
| Investment deflator | 108.5 | 0.9 | 1.7 | 1.7 | 1.6 | 1.8 | 1.7 |
| Export price deflator | 103.9 | 1.3 | 1.5 | 1.6 | 1.4 | 1.4 | 1.3 |
| Import price deflator | 102.0 | 2.2 | 1.3 | 1.4 | 1.8 | 1.8 | 1.8 |

Note: The data for 2018-2020 are from *Economic Survey*, December 2018. For all price indices 2010=100.
Source: Statistics Denmark and own calculations.

## Table 1c

### Labour market developments

| | 2018 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| | Bn. DKK | Change, per cent | | | | | |
| Employment, 1.000 persons | 2,969 | 1.7 | 1.1 | 0.9 | 0.3 | 0.1 | 0.2 |
| Employment, hours worked (mill. hours) | 4,164 | 1.6 | 1.1 | 0.9 | 0.4 | 0.1 | 0.2 |
| | | Per cent | | | | | |
| Unemployment rate, harmonized EU-definition[1)] | | 5.9 | 5.1 | 5.4 | 5.2 | 5.2 | 5.6 |
| | | Change, per cent | | | | | |
| Labour productivity. persons (1.000 DKK) | 690 | 0.1[2)] | 0.6 | 0.7 | 1.2 | 1.0 | 1.1 |
| Labour productivity, hours worked (DKK) | 492 | -0.0[2)] | 0.6 | 0.7 | 1.1 | 1.0 | 1.1 |
| Compensation of employees (DKK bn.)[3)] | 1,164 | 3.9 | 3.7 | 3.9 | 3.4 | 3.1 | 3.2 |
| Compensation per employee[4)] | 432 | 2.0 | 2.5 | 2.9 | 3.1 | 3.0 | 3.0 |

Note: The data for 2018-2020 are from *Economic Survey*, December 2018.
1) The number corresponds to the EU-harmonized unemployment in per cent of the labour force. The data is based on Statistics Denmark's Labour Force Survey (AKU).
2) Adjusted on a discretionary basis for a large one-off payment in the 1st quarter of 2017 for use of Danish-owned intellectual property rights, *cf. box 4.1 in Economic Survey, May 2018.*
3) Based on current prices, i.e. growth rates are in nominal terms.
4) Calculated as compensation per employed wage earner.
Source: Statistics Denmark and own calculations.

## Table 1d

### Sectoral balances

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| | | | Per cent of GDP | | | |
| Net lending/borrowing vis-à-vis the rest of the world | 5.8 | 5.6 | 5.1 | 4.1 | 5.3 | 4.1 |
| *Of which:* | | | | | | |
| - Balance of goods and services | 5.2 | 5.2 | 4.8 | 4.4 | 3.7 | 2.4 |
| - Balance of primary incomes and transfers | 0.6 | 0.4 | 0.4 | -0.2 | 1.6 | 1.7 |
| - Capital account | -0.0 | -0.0 | -0.0 | -0.0 | -0.0 | -0.0 |
| Net lending of the private sector | 5.7 | 5.7 | 5.3 | 4.4 | 5.3 | 4.2 |
| Net lending of general government | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | -0.0 |
| Statistical discrepancy | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Note: The data for 2018-2020 are from *Economic Survey*, December 2018.
Source: Statistics Denmark and own calculations

**Table 2a**

**General government budgetary prospects (EDP-basis)**

| | 2018 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| | Bn. DKK | Per cent of GDP | | | | | |
| **Net lending (EDO B,9) by sub-sector** | | | | | | | |
| General government (EDP-form) | 3.9 | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Central government | 4.0 | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Local government | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Social security funds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | | |
| **General government (S13)** | | | | | | | |
| Total revenue | 1,122 | 50.5 | 49.6 | 49.0 | 49.0 | 49.2 | 50.3 |
| Total expenditure | 1,118 | 50.3 | 49.7 | 49.2 | 49.3 | 49.2 | 50.3 |
| Net lending | 3.9 | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Interest expenditures | 22 | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 |
| Primary balance[1)] | 26 | 1.2 | 0.8 | 0.8 | 0.7 | 0.9 | 1.1 |
| One-off effects[2)] | 7.9 | -0.4 | -0.8 | -1.0 | -1.1 | -0.6 | 0.0 |
| | | | | | | | |
| **Selected components of revenue** | | | | | | | |
| Total taxes[3)] | 1,004 | 45.2 | 44.6 | 44.2 | 44.0 | 44.2 | 45.0 |
| Taxes on production and imports | 361 | 16.3 | 16.2 | 16.1 | 15.9 | 15.8 | 15.8 |
| Current taxes on income and wealth etc. | 636 | 28.6 | 28.2 | 27.9 | 27.9 | 28.1 | 29.0 |
| Capital taxes | 5 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| Social contributions[4)] | 1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Property income[5)] | 27 | 1.2 | 0.9 | 0.8 | 0.9 | 0.8 | 0.9 |
| Other (residual)[6)] | 92 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| Total revenue | 1,122 | 50.5 | 49.6 | 49.0 | 49.0 | 49.2 | 50.3 |
| p.m.: Tax burden[7)] | 1,007 | 45.3 | 44.7 | 44.3 | 44.1 | 44.3 | 45.1 |

**Table 2a (continued)**

**General government budgetary prospects (EDP-basis)**

| | 2018 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| | Bn. DKK | Per cent of GDP | | | | | |
| **Selected components of expenditure** | | | | | | | |
| Compensation of employees and intermediate consumption | 535 | 24.1 | 23.8 | 23.7 | 23.6 | 23.6 | 23.6 |
| - Compensation of employees | 340 | 15.3 | 15.1 | 15.0 | 14.9 | 15.0 | 14.9 |
| - Intermediate consumption | 195 | 8.8 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 |
| Total social transfers | 394 | 17.7 | 17.6 | 17.3 | 17.2 | 17.2 | 17.5 |
| - Social transfers in kind[6)] | 31 | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 | 1.3 |
| - Other than in kind | 363 | 16.3 | 16.2 | 15.9 | 15.9 | 15.9 | 16.2 |
| Interest expenditures | 22 | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 |
| Subsidies | 39 | 1.8 | 1.7 | 1.6 | 1.6 | 1.6 | 1.5 |
| Gross fixed capital formation | 71 | 3.2 | 3.3 | 3.3 | 3.3 | 3.4 | 3.4 |
| Capital transfers | 14 | 0.6 | 0.3 | 0.5 | 0.3 | 0.3 | 0.4 |
| Other (residual)[6)] | 43 | 1.9 | 2.0 | 1.9 | 2.3 | 2.2 | 2.8 |
| Total expenditure | 1,118 | 50.3 | 49.7 | 49.2 | 49.3 | 49.2 | 50.3 |
| p.m.: Public consumption | 548 | 24.6 | 24.4 | 24.2 | 24.2 | 24.2 | 24.2 |

Note: The data for 2018-2020 are from *Economic Survey*, December 2018.

1) Defined as the EDP-definition the net lending plus EDP-definition of the interest expenditures.

2) Based on the calculation of the structural budget balance and includes temporary variations in revenues from pension yield taxation, North Sea activities, net interest, corporate taxes, other special items and actual one-off effects. The structural budget balance is not calculated on EDP-basis. The calculations of the structural budget balance are based on public finances according to national account principles.

3) Defined as the sum of taxes on production and imports, current taxes on income, wealth, etc. and capital taxes. Does not include compulsory social contributions, which are traditionally included in the tax burden.

4) Does not include voluntary and imputed social contributions, since these are not included in the tax burden.

5) Incl. interest income and dividends and land rent etc.

6) Statistic Denmark does not publish figures for all the subgroups (P.11+P.12+P.131+D.39+D.7+D.9 (other than D.91) D.6311. D.63121. D.63131. D.29+D.4 (other than D.41) +D.5+D.7+D.9+P.52+P.53+K.2+D.8), and no estimates are available for these individual components in the projections.

7) Defined as the sum of taxes on production and imports (incl. those collected by the EU), current taxes on income, wealth etc. and capital taxes and compulsory social contributions.

Source: Statistics Denmark and own calculations.

**Table 2b**

**No-policy change projections**

| | 2018 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| | Bn. DKK | Per cent of GDP | | | | | |
| Total revenue at unchanged policies | 1,122 | 50.5 | 49.8 | 49.6 | 49.7 | 49.9 | 51.0 |
| Total expenditure at unchanged policies | 1,118 | 50.3 | 50.0 | 49.5 | 49.0 | 49.3 | 50.2 |

Source: Statistics Denmark and own calculations.

**Table 2c**

**Amounts to be excluded from the expenditure benchmark**

| | 2018 | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|---|
| | Bn. DKK | Per cent of GDP | | | | | |
| Expenditure on EU programmes fully matched by EU funds revenue | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| - Of which investments fully counter-balanced by revenue from EU funds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cyclical unemployment benefit expenditure | 16.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| Effect of discretionary revenue measures | -8.6 | -0.4 | 0.2 | -0.3 | -0.1 | 0.0 | -0.1 |
| Revenue increases mandated by law | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Note: The cyclical unemployment benefit expenditure consists of the cost of unemployment benefits and social assistance for unemployed (both excluded the cost of people in activation programmes).
Source: Statistics Denmark and own calculations.

**Table 3**

**General government expenditure by function**

| | COFOG | 2017 | 2022 |
|---|---|---|---|
| | | Per cent of GDP | |
| **General public service** | 1 | 6.2 | - |
| Defence | 2 | 1.2 | - |
| Public order and safety | 3 | 0.9 | - |
| Economic affairs | 4 | 3.3 | - |
| Environmental protection | 5 | 0.4 | - |
| Housing and community amenities | 6 | 0.2 | - |
| Health | 7 | 8.4 | - |
| Recreation. culture and religion | 8 | 1.7 | - |
| Education | 9 | 6.5 | - |
| Social protection | 10 | 22.4 | - |
| Total expenditures[1)] | TE | 51.2 | 49.2 |

Note: Short-term and longer-term projections do not include general government expenditures by function. The focus of both short-term and longer-term projections is public expenditures by type of transaction. 2017 is based on accounting figures.

1) The estimate for the total expenditure-to-GDP ratio in Statistics Denmark's calculation deviates from the estimate in table 2a due to definitional differences in the approach of calculation (table 2a includes depreciations in public consumption, which is not the case in Statistics Denmark's approach).

Source: Statistics Denmark and own calculations.

**Table 4**

**General government debt developments**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| | | | Per cent of GDP | | | |
| Gross debt | 33.8 | 33.4 | 33.4 | 34.0 | 35.5 | 37.8 |
| Change in gross debt ratio[1)] | -2.0 | -0.4 | -0.1 | 0.7 | 1.5 | 0.3 |
| Change in gross debt[2)] | -1.3 | 0.7 | 1.1 | 1.7 | 2.4 | 1.3 |
| | | | | | | |
| **Contributions to change in gross debt** | | | | | | |
| Primary balance[3)] | 1.2 | 0.8 | 0.8 | 0.7 | 0.9 | 1.1 |
| Interest expenditure[4)] | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 |
| Stock-flow adjustment[5)] | -3.5 | -1.1 | -0.5 | 0.2 | 0.6 | -0.8 |
| p.m. implicit interest rate on debt[6)] | 3.0 | 2.8 | 2.6 | 2.6 | 2.5 | 2.9 |
| | | | | | | |
| **Other relevant variables** | | | | | | |
| Central government account in Danmarks Nationalbank | 5.0 | 2.8 | 2,3 | 2.0 | 2.0 | 1.8 |
| Public net debt[7)] | 1.1 | 1.1 | 1.2 | 1.4 | 1.2 | -0.2 |
| Net debt in central and local governments[7)] | 1.1 | 1.1 | 1.1 | 1.4 | 1.2 | -0.2 |

1) Change in gross debt ratio is defined as Dt/GDPt – Dt-1/GDPt-1, where D is public debt measured in nominal terms (DKK).
2) Change in gross debt is defined as Dt/GDPt – Dt-1/GDPt, where D is public debt measured in nominal terms (DKK).
3) As defined in table 2a.
4) As defined in table 2a.
5) At present information is not available to split stock-flow adjustment into subgroups.
6) Proxied by interest expenditures divided by the debt level of the previous year.
7) In the estimate of the public net debt and the net debt in central and local governments, the central governments deposit in Danmarks Nationalbank together with the central governments additional assets are subtracted.

Source: Statistics Denmark and own calculations.

**Table 5**

**Cyclical developments**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| | | | Per cent | | | |
| Real GDP growth[1)] | 1.7 | 1.7 | 1.6 | 1.5 | 1.1 | 1.4 |
| | | | Per cent of GDP | | | |
| Net lending of general government | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| Interest expenditure[2)] | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 1.1 |
| One-off effects[3)] | -0.4 | -0.8 | -1.0 | -1.1 | -0.6 | 0.0 |
| - Of which revenue | 0.7 | 0.4 | 0.3 | 0.1 | 0.1 | 0.0 |
| - Of which expenditure | -1.1 | -1.2 | -1.3 | -1.2 | -0.7 | 0.0 |
| | | | Per cent | | | |
| Potential GDP growth[4)] | 0.1 | 1.0 | 1.4 | 2.2 | 1.7 | 1.5 |
| | | | Percentage points | | | |
| *Of which, contribution from:* | | | | | | |
| - Labour | 0.0 | 0.3 | 0.5 | 0.9 | 0.7 | 0.2 |
| - Capital | 0.0 | 0.6 | 0.6 | 0.7 | 0.5 | 0.6 |
| - Total factor productivity | 0.0 | 0.1 | 0.3 | 0.6 | 0.5 | 0.7 |
| | | | Per cent of GDP | | | |
| Output gap | 0.6 | 1.2 | 1.2 | 0.8 | 0.3 | 0.0 |
| Cyclical component[5)] | 0.7 | 1.1 | 1.2 | 0.9 | 0.3 | 0.0 |
| Structural budget balance[6)] | 0.0 | -0.1 | 0.0 | 0.2 | 0.4 | 0.0 |
| Primary structural budget balance[6)] | 0.0 | -0.1 | 0.0 | 0.2 | 0.4 | 0.0 |

1) The growth estimate for 2018 is adjusted on a discretionary basis for a large one-off payment in the 1st quarter of 2017 for use of Danish-owned intellectual property rights, *cf. box 4.1 in Economic Survey, May 2018*.
2) As defined in table 2.
3) Based on the calculation of the structural budget balance and includes temporary variations in revenues from pension yield taxation, North Sea activities, net interest, corporate taxes, other special items and actual one-off effects.
4) Including a contribution from indirect taxes (in real terms).
5) The calculation of the cyclical component is based on the output and employment gap.
6) The structural budget balance is not calculated on EDP-basis. The calculations of structural budget balance are based on public finances according to national account principles. The primary structural budget balance is based on an actual primary balance defined via net interest expenditures and not gross interest expenditures.

Source: Statistics Denmark and own calculations.

**Table 6**

**Divergence from previous update**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| | | | Change, per cent | | | |
| **Real GDP growth** | | | | | | |
| - Previous update | 1.9 | 1.7 | 1.6 | 1.6 | 1.7 | 1.3 |
| - Current update[1)] | 1.7 | 1.7 | 1.6 | 1.5 | 1.1 | 1.4 |
| - Difference | -0.2 | 0.0 | 0.0 | -0.1 | -0.6 | 0.1 |
| | | | Per cent of GDP | | | |
| **Output gap (per cent of GVA)** | | | | | | |
| - Previous update | 0.4 | 0.8 | 0.5 | 0.3 | 0.0 | 0.0 |
| - Current update | 0.6 | 1.2 | 1.2 | 0.8 | 0.3 | 0.0 |
| - Difference | 0.2 | 0.4 | 0.6 | 0.6 | 0.3 | 0.0 |
| | | | | | | |
| **Actual budget balance** | | | | | | |
| - Previous update | -0.7 | -0.7 | -0.7 | -0.6 | 0.4 | 0.0 |
| - Current update | 0.2 | -0.1 | -0.1 | -0.2 | 0.0 | 0.0 |
| - Difference | 0.9 | 0.6 | 0.6 | 0.4 | -0.3 | 0.0 |
| | | | | | | |
| **Gross debt level** | | | | | | |
| - Previous update | 35.6 | 34.8 | 34.2 | 36.2 | 37.1 | 39.5 |
| - Current update | 33.8 | 33.4 | 33.4 | 34.0 | 35.5 | 37.8 |
| - Difference | -1.8 | -1.4 | -0.8 | -2.2 | -1.6 | -1.7 |

1) The growth estimate for 2018 is adjusted on a discretionary basis for a large one-off payment in the 1st quarter of 2017 for use of Danish-owned intellectual property rights, *cf. box 4.1 in Economic Survey, May 2018*.

Source: Own calculations.

**Table 7**

**Long-term sustainability of public finances**

| | 2007 | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|---|
| | | | | Per cent of GDP | | | |
| **Total expenditure** | 48.9 | 55.5 | 49.2 | 51.0 | 52.1 | 51.4 | 49.4 |
| *Of which:* | | | | | | | |
| Age-related expenditure | 26.5 | 30.0 | 27.7 | 27.9 | 28.1 | 27.2 | 25.9 |
| Social security pension | 9.0 | 9.9, | 9.4 | 9.3 | 8.9 | 8.0 | 7.1 |
| - Old-age and early pensions | 7.0 | 7.7 | 7.6 | 7.5 | 7.0 | 6.0 | 5.0 |
| - Other pensions | 2.0 | 2.2 | 1.8 | 1.8 | 1.9 | 2.0 | 2.1 |
| Occupational pensions | - | - | - | - | - | - | - |
| Health care[1)] | 5.7 | 6.3 | 6.6 | 7.1 | 7.3 | 7.2 | 7.0 |
| Long-term care[1)] | 2.0 | 2.2 | 2.3 | 3.0 | 3.5 | 3.9 | 4.0 |
| Education expenditure | 4.8 | 5.5 | 5.4 | 5.4 | 5.6 | 5.6 | 5.3 |
| Other age-related expenditures | 5.7 | 6.3 | 6.6 | 7.1 | 7.3 | 7.2 | 7.0 |
| Interest expenditure | 1.6 | 1.9 | 0.9 | 1.5 | 2.4 | 2.5 | 2.2 |
| | | | | | | | |
| **Total revenue** | | | | | | | |
| *Of which:* | | | | | | | |
| - Property income[2)] | 1.1 | 1.3 | 0.7 | 1.2 | 1.8 | 1.8 | 1.8 |
| - Revenue from pension pay-outs net | -1.3 | -0.9 | -0.2 | -0.2 | 0.2 | 0.3 | 0.2 |
| Pension reserve fund assets | 124.2 | 139.3 | 177.1 | 191.2 | 206.7 | 214.3 | 219.4 |
| *Of which:* | | | | | | | |
| Public pension fund assets | 0.1 | 0.0 | 0.0 | -0.1 | -0.2 | -0.4 | -0.6 |

**Table 7 (continued)**

**Long-term sustainability of public finances**

| | 2007 | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|---|
| | | | | Per cent | | | |
| **Assumptions** | | | | | | | |
| Labour productivity growth | -1.7 | 4.3 | 0.5 | 1.2 | 0.8 | 1.0 | 1.0 |
| Real GDP growth[3)] | 0.9 | 1.9 | 1.6 | 1.5 | 1.5 | 1.7 | 1.5 |
| Participation rate males (aged 20-64) | 83.0 | 80.2 | 82.5 | 82.2 | 82.5 | 82.4 | 82.6 |
| Participation rate females (aged 20-64) | 73.7 | 72.1 | 74.8 | 74.2 | 74.6 | 74.7 | 74.7 |
| Total participation rate (aged 20-64) | 78.4 | 76.2 | 78.7 | 78.3 | 78.6 | 78.6 | 78.7 |
| Unemployment rate[4)] (national definition) | 3.8 | 6.2 | 3.8 | 3.5 | 3.5 | 3.5 | 3.5 |
| Structural unemployment[4)] (national definition) | 4.7 | 4.6 | 3.6 | 3.5 | 3.5 | 3.5 | 3.5 |
| Population aged 65+, 1,000 persons | 844 | 918 | 1,169 | 1,388 | 1,555 | 1,566 | 1,626 |

1) The cost of nursing homes is included in long-term care.
2) Includes public revenues from interest income and dividends.
3) In some years after 2025 GDP growth is effected by the regulation of early- and old age person ages in line with longevity.
4) Registered gross unemployment (including people in activation programmes), percentage of the labour force.
Source: Statistics Denmark and own calculations.

**Table 7a**

**Contingent liabilities**

| | 2018 | 2019 |
|---|---|---|
| | Per cent of GDP | |
| Public guarantees | 18.1 | 17.5 |
| - of which: linked to the financial sector | 0.0 | 0.0 |

Note: Does not include deposit guarantees. Public guarantees consist of "statsforskrivninger", guarantees concerning loans and other guarantees. Guarantees linked to the financial sector consist of the Financial Stability Company.
Source: Government accounts for the fiscal year 2018.

**Table 8**

**Basic assumptions**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2025 |
|---|---|---|---|---|---|---|
| Short term interest rate (annual average) | -0.3 | -0.3 | 0.2 | 0.0 | 0.4 | 1.4 |
| Long term interest rate (annual average) | 0.5 | 0.6 | 1.1 | 1.5 | 1.9 | 2.7 |
| Exchange rate EUR/USD (annual average) | 118.4 | 113.6 | 113.6 | 114.8 | 115.9 | 119.4 |
| Nominal effective exchange rate (1980=100) | 103.7 | 103.3 | 103.3 | 103.3 | 103.3 | 103.3 |
| World excluding EU, GDP growth[1)] | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | - |
| EU, GDP growth | 2.2 | 2.0 | 1.8 | 1.7 | 1.7 | - |
| Growth of relevant foreign markets[2)] | 3.7 | 3.9 | 3.4 | 3.5 | 3.3 | - |
| World import volumes, excluding EU[1)] | 4.8 | 4.2 | 4.2 | 4.1 | 4.0 | - |
| Oil price (Brent, USD/barrel) | 71.4 | 64.6 | 67.9 | 71.1 | 74.6 | 85.2 |

Note: The data for 2018-2020 are from *Economic Survey*, December 2018.
1) Based on IMF's *Economic Outlook*, October 2018 and *Economic Survey*, December 2018.
2) Calculated as the weighted average of the import growth of Denmark's 36 most important trade partners. The weights reflect the countries' share of Danish industry exports in 2016.
Source: Statistics Denmark, European Economic Forecast, autumn 2018, IMF's World Economic Outlook, October 2018, OECD's Economic Outlook, October 2018, Macrobond and own calculations.

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