THE DANISH GOVERNMENT

Denmark's Convergence Programme 2018

Ministry for Economic Affairs and the Interior

APRIL 2018

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Content

Chapter 1

Challenges and Goals for Economic Policy

The Danish economy is in a period of stable growth and rising employment. GDP has increased by around 2 per cent the last two years, and the economic expansion is expected to continue in the coming years. Thus, the Danish economy is entering an economic boom phase.

In the next few years, the main challenge for economic policy will be to keep the expansion on track and to ensure that more persons actively participate in the labour market. There are no current signs of emerging imbalances as in the mid-1980s and 2000s, and several factors indicate that it will be possible to maintain stable growth in the coming years.

Since the financial crisis, several measures have been implemented to strengthen the financial sector and contribute to a stable development in the housing market. With the Budget Law, which took effect from the fiscal year 2014, the framework for fiscal policy management has been strengthened. The government is planning a gradual reduction of structural deficits in the coming years, and aims at achieving structural balance in 2025. The structural balance is thus improving towards 2025 despite declining structural North Sea revenues. In the period 2021-2025, there is on average structural surplus in the projection. Fiscal policy thus implies a gradual fiscal tightening which helps to dampen capacity pressures in the Danish economy.

In addition, a number of reforms have been implemented, which increase labour supply, including through later withdrawal from the labour market. In the coming years, reforms will contribute to increase the workforce further. However, a sustainable economic expansion is dependent on a sufficient supply of labour resources. Employment for wage earners has reached a historically high level in 2018, and firms are reporting increasing labour shortages. Experience shows that overheating may occur relatively fast. In particular, this will be a risk if no further efforts are made to increase labour supply.

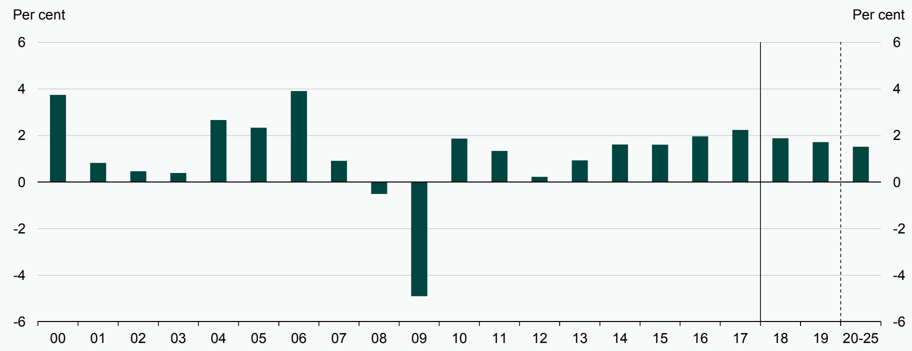
Fiscal policy is sustainable in the long run given the assumptions of the projection, but with unchanged policy, there will be a period towards the middle of the century, where public deficits will be excessive. In the absence of new reforms, the fiscal room for manoeuvre will also be limited in the coming years.

1.1 The economy towards 2025

The Danish economy has been in an upswing since 2013, and during the last two years GDP has increased by around 2 per cent, *cf. figure 1.1*. A period of higher growth rates lies more than ten years back. The economic expansion means that GDP in 2018 is expected to exceed the structural level and capacity pressure is expected to increase in the coming years.

Figure 1.1

Stable GDP growth



Source: Statistics Denmark and own calculations.

The preconditions for further expansion are good. The low ratio of private consumption to disposable income implies that households are in a good positon to increase consumption, also without necessarily taking on debt. Investment activity is also rising, and firms will need to invest in new capital stock. Both households and firms have in recent years consolidated their finances, and financial sector solidity has improved. Finally, the economic development abroad has strengthened, thus improving export opportunities.

The economic expansion is reflected in a high pace of job creation. Since the beginning of 2013, about 180,000 more persons have found employment. In 2016, unemployment had fallen to the lowest level in 40 years, apart from 2007 and 2008. The level of unemployment in 2017 is affected by technical factors but according to the latest figures unemployment is declining again and is now close to or below its structural level.

However, a continued sustainable expansion in the Danish economy is dependent on an increase in the workforce. Both the employment gap and the unemployment gap were closed in 2017. This means that, in the coming years, the risk of bottlenecks is elevated. Firms, in particular in construction, are already reporting lack of labour as a production constraint.

The workforce is already historically high. This partly reflects a large inflow of foreign labour since 2011. The increase in the number of foreign employees corresponds to approx. 40 pct. of total employment growth in the period from the first quarter of 2013 to the fourth quarter of 2017. Most foreigners come from other EU countries. Labour shortages are also increasing in these countries, and the international competition for labour is already increasing.

Reforms contribute to sustainable employment growth. The structural workforce has on average increased by about 20,000 persons annually in the period 2014-2017. In the period 2018-2022, the structural workforce is also expected to increase by around 20,000 persons annually. This in particular reflects a continued increase in the voluntary early retirement pension age and the increase in the retirement age from 65 to 67 years from 2019 to 2022. The Danish economy is thus in a better position than during the upswing in the 2000s, where employment rose faster than now, but reforms only contributed modestly to a larger workforce, *cf. table 1.1*.

Table 1.1

Reforms contribute significantly to future increases in the labour force

	2005-2008	2014-2017	2018-2022	2023-2025
Average annual increase, 1,000 persons				
Structural labour force	4	19	20	8
Actual employment	51	39	22	8

Note: The labour force and employment are including persons on leave.
Source: Statistics Denmark and own calculations.

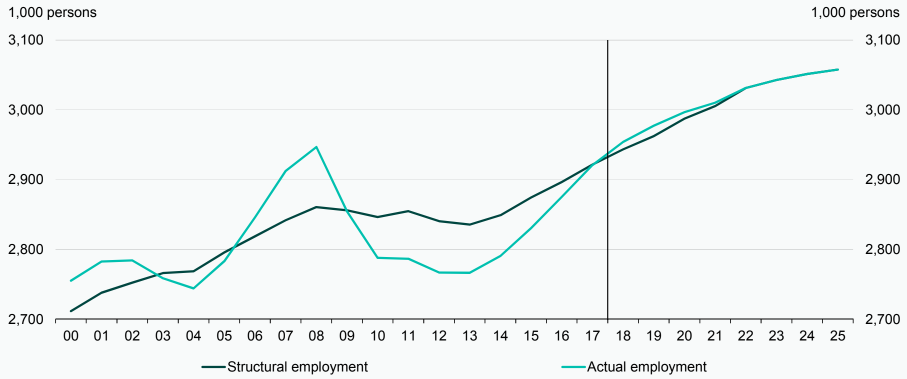
If employment rises faster than expected, the pressure on the labour market will increase further. This will especially be true in a situation without new measures that increase labour supply or otherwise dampen the capacity pressure. If a situation of pronounced shortage of labour arises, the economy may end up overheating. Experience shows that overheating may occur relatively fast when the labour market tightens. Overheating of the economy may lead to imbalances in the form of loss of competitiveness and unsustainable indebtedness, which may prolong a subsequent economic downturn.

In the projection of the Danish economy, the economic expansion and rising employment are expected to continue and hence not to be hampered by an unsustainable development due to rising capacity pressures. Growth is expected to be 1.9 per cent in 2018 and 1.7 per cent in 2019. In the medium-term period towards 2025, the annual rate of growth is expected to be around 1½ per cent on average, *cf. chapter 2*.

Employment is estimated to increase by about 75,000 people by 2020 and reach a level of about 3,000,000 persons. This largely reflects an increase in structural employment, as adopted reforms take effect. In the period 2021-2025, a further but smaller increase in employment is expected, increasing employment to an expected level of more than 3,050,000 people in 2025, *cf. figure 1.2*.

Figure 1.2

Employment reaches record level in 2018



Source: Statistics Denmark and own calculations.

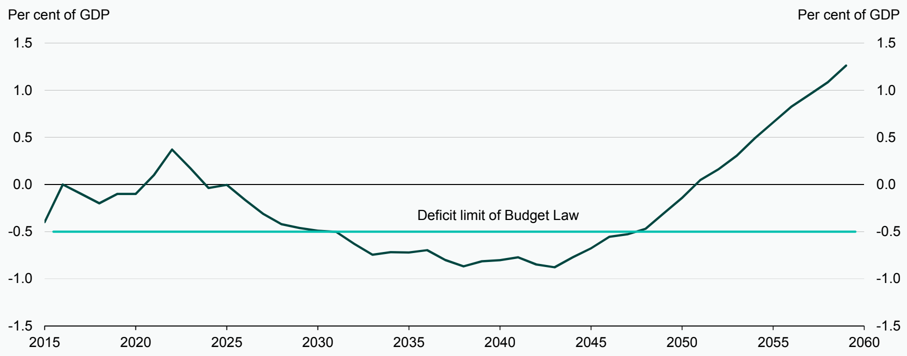
In the short term, it is important that economic policy as a whole is aligned with the business cycle situation of the Danish economy such that economic policy does not add unnecessarily to the capacity pressures in the economy. The framework for fiscal policy in the coming years aims to make progress towards structural balance. Fiscal policy thus implies a gradual fiscal tightening, which helps to dampen the capacity pressure in the Danish economy, *cf. chapter 3*.

Fiscal policy is also planned within the overall goal of fiscal sustainability. Even though this goal is met given the assumptions of the projection, there will be a period until the middle of the century where public deficits are expected to be excessive (the so-called hammock challenge), which all things being equal require an adjustment of economic policy.

The hammock challenge should be seen in connection with the demographic development, where the generations who retire from the labour market for a number of years will be larger than the generations entering the labour market. In the long run, the agreed indexation of the retirement age in connection with the 2006 welfare agreement and the 2011 retirement agreement will result in an improvement of the public balance, *cf. figure 1.3*. This improvement is due to the fact that future generations have the prospect of a longer working life and a shorter retirement period than current generations of elderly persons.

Figure 1.3

With unchanged policy public deficits will be excessive around 2030-2050



Source: Statistics Denmark and own calculations.

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 continually be aligned with the economic situation.
- The government's goal is to increase growth structurally by DKK 80 bn. 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.
- In the coming years, the planning of fiscal policy is based on a gradual reduction of structural deficits. By 2025 there should be balance between public expenditures and revenues. Towards 2020, the target is a structural deficit of 0.1 per cent of GDP.
- The consolidation of public finances in relation to current budget deficits ensures, inter alia, an increasing margin to the deficit limit in the Budget Law, such that fiscal policy can support a sustainable expansion in the economy and there is a fiscal room for manoeuvre in relation 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 stop 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 of safety to the 60 per cent of GDP limit concerning EMU debt.

Source: *Opdateret 2025-forløb*, August 2017.

Since the projection in Denmark's Convergence Program 2017, the government has reached a number of policy agreements, including:

- Agreement on housing taxation (*forlig om tryghed om boligbeskatningen*) (May 2017) means that a new housing tax system is introduced from 2021 to ensure confidence for the individual homeowner, including the transition to the new and more accurate property valuation system that was decided in November 2016. The revenue from housing taxes is reduced for a number of years, but is expected to be approximately unchanged in the long term. The new rules will, among other things, help stabilize house prices.

- Agreement on more years on the labour market (*aftale om flere år på arbejdsmarkedet*) (May 2017) reduces the so-called interaction problem implying that savings for retirement is unprofitable for some persons due to offsetting in some public services payments. At the same time, the agreement encourages more persons to choose to stay longer time on the labour market.

- Agreement on restructuring of car taxes and lower toll rates over the Great Belt (*aftale om omlægning af bilafgifterne og lavere takster over Storebælt*) (September 2017) gives Danes lower registration fees and encourages people to buy safer cars. In addition, the agreement ensures a reduction of the Great Belt toll rate by 25 per cent.

- The agreement on business and entrepreneurial initiatives (*aftale om erhvervs- og iværksætterinitiativer*) (November 2017) contains a number of initiatives in five areas that strengthen Danish businesses and create a stronger entrepreneurship and shareholder culture. At the same time, the agreement entails lower taxes on several goods as well as a lower electricity heating tax for renewable energy.

- The Budget Bill for 2018 (*finanslovsaftale for 2018*) (December 2017) includes, inter alia, an abolition of the tax on free telephone and makes the housing employment scheme (*boligjobordningen*) permanent in an adjusted form. It also ensures better conditions for the elderly, the health service is lifted, and the safety and security in Denmark is increased.

- Agreement on initiatives for digital growth in Denmark (*aftaler om initiativer for Danmarks digitale vækst)* (February 2018) supports the digital restructuring of firms and contributes to lift technological competencies of Danes.

- Agreement on lower tax on labour income and larger deductions for pension dontributions (*aftale om lavere skat på arbejdsindkomst og større fradrag for pensionsindbetalin*ger) (February 2018) will reduce tax rates on work and pension payments by approx. DKK 7 bn. (immediate effect). Particularly, the part of the population that has a relatively small gain from being in work rather than on transfer income is given a greater incentive to take a job. In addition, the agreement increases incentives to save for retirement, especially in the last part of working life.

Among other things, the agreements imply lower taxes rates and improve business conditions. In addition, the agreements help to make it reasonable to save for retirement. The agreements contribute to increasing prosperity through higher employment and increased productivity.

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 measures on the tax and expenditure areas, including real growth in public consumption or other political initiatives within the goal of structural balance in 2025.

In the latest medium term projections from August 2017, the fiscal space amounted to approx. DKK 12 bn. towards 2020 and approx. DKK 32 bn. towards 2025 compared to the expenditure level in 2017, within the government's goal of structural balance.

The fiscal space in the Convergence Programme 2018 is approx. DKK 9½ bn. in 2020 and approx. DKK 33 bn. in 2025 (compared to the expenditure level in 2017). The fiscal space is calculated with offset in the medium term assessment in the Convergence Programme, where agreements and new information etc. are included, *cf. box 1.2*. There are conditions that increase the fiscal space as well as conditions that decrease the fiscal space compared to the August 2018 projections*, cf. table 1.2 and chapter 3*.

Table 1.2

Changes in fiscal space since August 2017

	2020	2025
Updated 2025 projection, August 2017 measured as highest possible public consumption growth compared to 2017 level, DKK bn. (2018 prices)	**12¼**	**32**
Direct contribution from fiscal space in agreement on business and entrepreneurial initiatives	-¼	-½
Revenue from making DSB more efficient is used as financing in agreement on business and entrepreneurial initiatives	-½	-1¼
Agreement on expansion of the highway on western Funen	-½	0
Agreement on a new model for financing of social housing	¼	¼
Agreement on defence 2018-2023	-½	0
Direct contribution from fiscal space in agreement on lower labour taxes and higher deductions on pension contributions	-2¼	-¾
Tax cuts on the approved budget bill for 2018	-½	-½
Concrete estimates for PSO-expenditures after 2022	0	2½
Preliminary public figures for 2017	1¼	1¼
Others (net)[1)]	0	-¼
Denmark's Convergence Programme 2018 compared to 2017 expenditure level	**9½**	**33**
Denmark's Convergence Programme 2018 compared to 2018 expenditure level	**6**	**29½**

1) Includes, among other things, the effect of the agreement on the Danish Vacation Law, initiatives categorised as public consumpotion in agreement on business initiatives and agreement on lower labour taxes and higher deductions on pension contributions and other new information in the updated assessment.
Source: Own calculations.

Taking into account that fiscal policy for 2018 is defined, the remaining fiscal space towards 2025 (from 2019 and onwards) amounts to approx. DKK 29½ bn. The slightly lower fiscal space measured from 2018 reflects that the aggregate includes one year less, which other things equal reduce the remaining fiscal space to new initiatives and real growth in public consumption towards 2025. Similarly there is one year less in the estimated growth in the demographic pressure on public consumption expenditures, which amounts to DKK 22 bn. in the Convergence Programme measured from the 2018 level. The total fiscal space in 2025 measured from the 2018 expenditure level is approx. DKK 7½ bn. larger than the estimated the demographic pressure on public consumption expenditures.

In the coming years, the total fiscal space is limited, *cf. detailed in chapter 3.2*. The fiscal space shall among other things cover future budget bills and agreements with municipalities and regions and unavoidable expenditures etc.

Box 1.2

Updates of the 2025 projections since August 2017

- New cyclical assessment in *Economic Survey*, December 2017: The cyclical assessment in Economic Survey, December 2017, is maintained for the Convergence Programme 2018, updated with preliminary national accounts and public statements for 2017 etc.
- Political agreements: Agreement on more years on the labour market, agreement on restructuring of car taxes, agreement on a new Danish Vacation Law, a new strategy for utility supply, the approved Budget Bill for 2018 (including agreement on a new model for financing of social housing and expansion of the highway on western Funen), agreement on defence 2018-2023 and agreement on lower tax on labour income and larger deductions for pension contributions.
- Updated presumptions on oil price development: The presumptions are based on updated estimates from the International Energy Agency, November 2017, and updated future prices. The estimated North Sea production is based on the Danish Energy Agency's 2017-prognosis and is unchanged in comparison to the medium term projections from August 2017.
- Concrete estimates for PSO expenditures and new baseline projection from the Danish Energy Agency: Previously, the PSO expenditures after 2022 have been projected technically as a constant share of GDP. Concrete estimates for 2023-2025 are included with the Convergence Programme based on the Danish Energy Agency's updated baseline projection. This reflects that the future framework for the energy policy is to be determined with a new energy agreement.
- Updated demographic pressure on public expenditures: Is updated based on the national account for 2017 and updated registry data. The growth in the updated demographic pressure amounts to an annual average of 0.65 per cent in 2019-2025, corresponding to a total of DKK 22 bn. In the medium term projections in august, the growth in 2019-2025 was calculated to DKK 22½ bn.
- Updated interest rate presumptions: The interest rate presumptions are based on market expectations in 2018-2019. A gradual normalisation of the interest rate levels is assumed from 2019 to 2040. E.g. it is assumed that the 10 year state interest is unchanged 4.5 per cent on the long term. Because the observed normalisation is slower than presumed in earlier Convergence Programmes, a more long term normalisation is assumed, e.g. such that the 10 year state interest is assumed to approx. 2.9 per cent in 2025.

Source: Ministry of Finance and Ministry of Economy and the Interior.

Chapter 2

Macroeconomic Scenario towards 2025

The Danish economy is experiencing an upturn with high and rising employment and stable growth. In 2017 GDP increased by 2.2 per cent, which is the highest growth rate since 2006.

The projection in Convergence Programme 2018 is based on the economic outlook in Economic Survey, December 2017, which has been adjusted to reflect new national accounts data for 2017 and updated estimates for public finances, oil prices and interest rates. There is a broad foundation for growth in the years ahead with increasing private consumption, investments and exports.

In the coming years, the pressure on the Danish economy is expected to increase. Employment is approaching a historically high level and is expected to expand further, but at a slower rate than in the previous years. Unemployment has also been brought down to a low level.

Capacity pressures are increasing but there are no current signs of emerging imbalances as in the mid 1980's or the 2000's. Furthermore, reforms will contribute to increase labour supply in the coming years.

In the medium-term outlook towards 2025, it is assumed that the upturn and the progress on the labour market will continue and, hence, is not hampered by unsustainable developments, e.g. caused by capacity pressures. Employment is expected to increase in line with structural employment, which reflects the impact of already implemented reforms, not least the Early Retirement reform that contribute to expanding the workforce in the years ahead.

Structural employment is expected to increase by approximately 135,000 persons from 2017 to 2025, thus contributing significantly to the growth potential in the Danish economy. The productivity growth is expected to be relatively modest in line with the development over the past decades. On average, GDP is expected to grow by approximately 1.6 per cent per year in the period 2018-2025.

2.1 Economic outlook for 2018 and 2019

The economic outlook for *Convergence Programme 2018* is based on the forecast for 2017-2019 in *Economic Survey, December 2017,* which has been adjusted to reflect new information, including new national accounts data for 2017.

In addition, updated estimates for the oil price and interest rates have been included as well as the effects of new policy initiatives that among other things affect public finances. These include the Agreement on lower taxes on labour income and higher deductions for pension payments from 6 February 2018, the Agreement on restructuring of car taxes, the Agreement on business and entrepreneur initiatives and the Budget Bill for 2018.

A new forecast for the Danish economy will be published in *Economic Survey*, May 2018

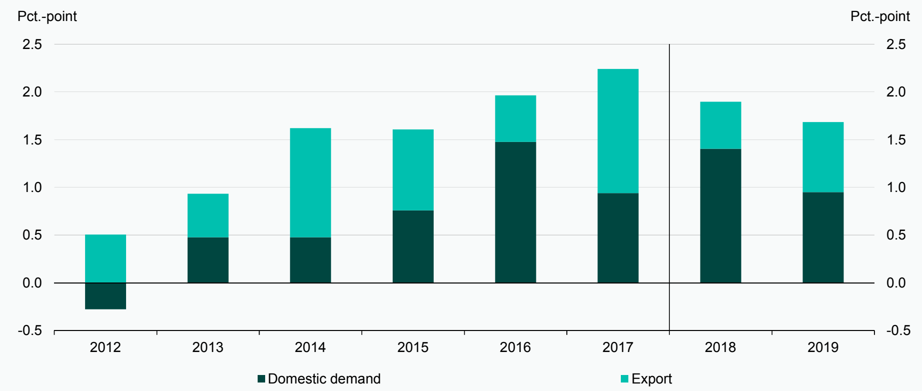
Growth is broad-based

Last year GDP increased by 2.2 per cent, and the high growth rate is expected to continue in 2017 and 2018, with expected growth rates at 1.9 per cent and 1.7 per cent respectively. Thus, the Danish economy is entering on economic boom phase with increasing output gap until 2019.

The growth in the Danish economy is broad-based. Private consumption as well as investments and exports contribute to the GDP-growth. Last year, growth was especially driven by high exports, which is also expected to contribute significantly to GDP growth in 2018 and 2019 as well, supported by higher demand from Danish export markets, *cf. figure 2.1*.

Figure 2.1

Contributions to GDP-growth



Note: Contributions to growth in GDP is adjusted for the import content in the demand components.
Source: Statistics Denmark and own calculations.

The previous years' solid growth in private consumption is expected to continue in 2018 and 2019. This is mainly due to higher employment and higher real incomes. In 2018 consumption is supported by the option of withdrawing early retirement contributions tax free, and in 2019 by the refund of excess property taxes will also support incomes.

Investments have increased in recent years in line with increasing capacity utilisation and increasing investment needs. This is expected to continue going forward.

Since the beginning of 2013 employment has increased by 178,000 persons and a further increase of 33,000 persons this year and 23,000 persons in 2019 is expected. As a result unemployment has reached a low level. In the projection, the pressure on the Danish economy is expected to increase.

Risks to the outlook include potential bottlenecks on the labour market. This will especially be true if labour demand increases at a faster rate than labour supply; for instance if domestic and foreign demand increases at an even faster rate. Increasing protectionism worldwide also represents a risk that can dampen world trade and thereby affect the Danish economy negatively, *cf. chapter 4*.

As a part of the current collective bargaining negotiations in the public sector (OK18), strikes and lockouts have been announced. If the conflict becomes reality, a large number of public services cannot be delivered. In addition, the conflict will have a negative spill over on the rest of the economy through dynamic responses. The negotiations are ongoing and a potential conflict represents a risk for the 2018 projection.

2.2 Assumptions for the international economy and financial conditions

The assumptions concerning developments in the international economy in 2018 and 2019 are unchanged relative to *Economic Survey*, December 2017. The outlook points to an increase in GDP-growth on Danish export markets of 2.6 per cent this year and 2.3 per cent next year.

The external assumptions beyond 2019 are based on IMF's most recent medium-term projections. An annual GDP-growth of approx. 2 per cent for Denmark's export markets is assumed for the period 2020-2023.

The projected oil price is determined by using futures prices and projections from the International Energy Agency (IEA), *cf. Denmark's Convergence Programme 2015*. In February 2018 the oil price was approx. 65 USD per barrel. The oil price is assumed to increase to approx. 70 USD per barrel in 2025 (measured in 2018 prices), which equals around 80 USD in nominal terms, *cf. table 2.1*

Table 2.1

External assumptions

	2017	2018	2019	2020	2025
Real GDP growth, main trading partners[1]	2.7	2.6	2.3	2.1	-
Oil price (Brent), USD per barrel, 2010 prices	54,2	65.6	65.7	67.2	80.6
Dollar exchange rate, DKK per USD	660.1	604.3	603.6	607.2	625.0
Interest rate 10-year Danish treasury bonds, per cent	0.5	0.8	1.3	1.6	2.9

Note: Estimates for the exchange rate, oil price and interest rates are based on observations up until March 21st 2018.
1) Includes OECD countries and the emerging market economies Brazil, China, India and Russia.
Source: European Commission, IMF, Bloomberg, Thomson Reuters Eikon, Economic Survey, December 2017 and own calculations.

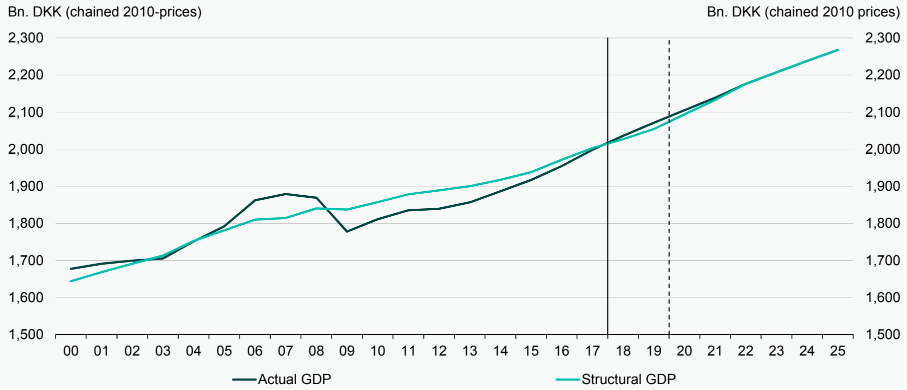
The projected short-term interest rates in the Euro Area and Denmark in 2018 are more or less unchanged compared to *Economic Survey*, December 2017. The stronger growth in Europe has led to expectations of a slightly faster normalisation of monetary policy. It is assumed that both the short-term and long-term interest rates will increase over the medium-term horizon. The 10-year government bond yield is expected to gradually increase from 0.8 per cent in 2018 to 2.9 per cent in 2025 and thereafter to 4.5 per cent from 2040 onwards.

2.3 Growth and employment towards 2025

In the medium-term projection towards 2025 it is assumed that the positive output gap in 2019 will gradually close towards 2022, and that growth in production and employment thereafter will correspond to their estimated structural growth rates, *cf. figure 2.2*.

Figure 2.2

Actual and structural GDP



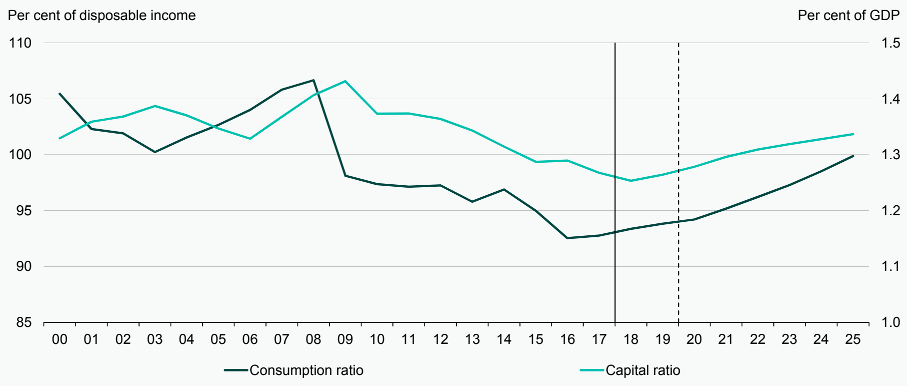
Note: The difference between actual and structural GDP corresponds to the output gap.
Source: Statistics Denmark and own calculations.

Total employment is expected to increase by approximately 135,000 persons from 2017 to 2025, reflecting an increase in the structural employment, partly due to an increase in the early retirement age in 2019 and again in 2022 and 2023 and an increase in the retirement age from 65 years to 67 years in 2019-2022.

Increasing employment and real wages support private consumption towards 2025, while a gradual normalisation of interest rates is expected to pull in the opposite direction. In the projection, the annual growth rate in private consumption is assumed to be 2.5 per cent on average in the period 2020-2025, and the share of income spent on consumption is assumed to normalise, but not return to the high level before the financial crisis, cf. *figure 2.3*.

Figure 2.3

Household consumption as a share of disposable income and capital as a share of GDP



Note: Consumption ratio is calculated as private consumption as a share of household's disposable income. Capital is the sum of machines, vehicles, inventory, buildings and plants (excluding housing) in private industry.
Source: Statistics Denmark and own calculations.

Gross fixed capital formation is expected to increase as firms will need to expand their production capacity. It is assumed that gross fixed capital formation increases as a share of GDP towards 2025 leading to a slight increase in the capital ratio, *cf. figure 2.3*.

In the period 2020-2025 production potential is expected to grow by approximately 1.8 per cent annually, *cf. table 2.2*. This reflects a higher structural workforce and an increase in productivity, which, among other things, is a result of higher business investments that increases the available capital base.

Productivity for the economy as a whole is expected to increase by 1.2 per cent annually in the period 2020-2025. This is due to productivity growth in the private sector. In the projection, productivity growth in the public sector is assumed to be zero when the public expenses are calculated by the use of the input method.

Table 2.2

Contributions to growth in potential production

	1991-2007	2008-2009	2010-2017	2018-2019	2020-2025
Average annual growth, per cent					
1. Potential production (GVA)	**1.9**	**1.2**	**1.0**	**1.3**	**1.8**
Of which contributions from:					
- Hourly productivity (structural)	1.5	1.4	0.8	0.6	1.3
- Structural unemployment	0.4	0.2	0.0	0.0	0.0
- Structural labour force	0.0	0.1	0.4	0.7	0.5
- Working hours (structural)	0.0	-0.6	-0.1	0.0	0.0
2. Cyclical contribution	0.2	-3.4	0.4	0.5	-0.1
3. Real GVA (1+2)	**2.1**	**-2.2**	**1.4**	**1.8**	**1.7**
4. Net taxes	0.1	-0.5	0.0	0.0	-0.1
5. Real GDP (3+4)	**2.2**	**-2.7**	**1.5**	**1.8**	**1.5**

Note: The estimate for potential growth in subperiods 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

Housing prices have continued to rise. The prices of apartments increased by 7.0 per cent nationwide in 2017, while housing prices grew by 4.0 per cent.

It is assessed that the price increases on single-family houses on a national level mostly reflect real economic conditions, particularly rising incomes and low interest rates. In Copenhagen and Aarhus, the development in housing prices gives rise to vigilance, but should be seen in the light of a significant population growth in the last several years.

Incomes are expected to increase in the coming years, which indicate that housing prices will continue to rise. On the contrary, gradually rising interest rates are expected to have a dampening effect.

Since *Denmark's Convergence Programme 2017* a number of initiatives aimed at the housing market have been adopted.

In May 2017 an agreement on a new housing tax system was adopted, which will supersede the housing tax stop from 2001. The new system will, amongst other things, imply that housing taxes from 2021 will follow new and more accurate property and land evaluations.

From 1 January 2018, the government has implemented new guidelines to limit the use of certain risky mortgage loan types. The new guidelines apply to loans with variable interest rates with interest rate fixed for up to five years (with or without installments), as well as loans with deferred amortization and variable interest rates for five years or more. This means that households that wish to take out a new mortgage will not be eligible for these risky loan types if the total debt of the household exceeds four times their annual income, and the loan-to-value ratio exceeds 60 per cent, *cf. Economic Survey,* December 2017.

The new loan rules have entailed a significant tightening of financial and mortgage institutions' credit conditions towards households in the 1st quarter of 2018, which adds to a general tightening over the last two years.

The government has also decided to activate the countercyclical capital buffer at 0.5 per cent with effect from 31 March 2019. The buffer contributes to a more solid financial system in the form of a shock absorber that can be released to protect the credit institution's loans in times of financial instability or economic downturns.

These initiatives supplement a number of previously adopted initiatives that also aim at increasing the robustness of households' finances and support stability on the housing market. The government has announced that it will continue to monitor the developments on the housing market closely and continuously assess the need for further initiatives.

The current account

The surplus on the current account was approx. 7.8 per cent of GDP in 2017, which is somewhat under the record high surplus in the years 2013–2015. The largest contribution to the surplus in 2017 came from the goods and services balance (the trade balance), *cf. figure 2.4.*

Figure 2.4

Current account, 2000 - 2025

Source: Statistics Denmark and own calculations.

The surplus is still significant, which amongst other things should be seen in the light of continued high national savings. Wages and capital income from abroad has also contributed, while Denmark has built up a large net foreign asset position.

The large surpluses on the current account in the last few years reflect an increased propensity to save among households and a weak development in investment after the financial crisis, *cf. Economic Survey,* December 2017. A return to a more normal consumption propensity in the coming years is expected, which together with rising housing investments will reduce the households' historically high savings. The firms' financial savings are similarly expected to fall concurrently with a rise in the need for investment.

The surplus on the current account is expected to fall to about 4.5 per cent of GDP in 2015, *cf. table 2.3*.

Table 2.3

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

	1995-2016	2017	2018	2019	2020	2021	2025
Per cent of GDP							
Investment ratio, private sector	18.1	17.6	18.1	18.5	19.0	19.3	20.0
Savings ratio, private sector	21.6	24.4	26.2	26.1	24.6	25.0	24.4
Private financial savings	3.5	6.8	8.1	7.5	5.6	5.7	4.4
General government budget balance	0.1	1.0	-0.7	-0.7	-0.7	-0.6	0.0
Current account	3.9	7.8	7.9	7.4	5.1	5.1	4.5
Net assets, end of period	2.6	54.5	61.8	69.2	72.1	74.9	86.9

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	2025
Output gap and real growth rates (per cent)						
GVA	2.3	1.8	1.8	1.9	1.8	1.4
GDP	2.2	1.9	1.7	1.6	1.6	1.3
Output gap (per cent of GDP)	-0.2	0.4	0.8	0.5	0.3	0.0
Demand, real growth, per cent						
Private consumption	1.5	2.3	2.4	2.2	2.3	2.6
Public consumption	1.2	0.7	0.3	0.5	0.5	0.5
Gross fixed capital formation	3.7	4.1	4.8	3.7	4.1	1.6
Export	4.4	2.8	2.6	3.2	3.2	2.6
Import	4.1	3.7	4.0	4.0	4.3	3.6
Prices, per cent						
Consumer prices	1.3	1.5	1.7	1.4	1.7	1.8
Current account, per cent of GDP						
Current account	7.8	7.9	7.4	5.1	5.1	4.5
Private financial savings	6.8	8.6	8.1	5.7	5.7	4.5
Labour market and productivity						
Growth in the labour force (per cent)	1.7	1.0	0.6	0.6	0.5	0.2
Growth in employment (per cent)	1.6	1.1	0.8	0.7	0.4	0.2
Registered gross unemployment (1,000 persons)	117	112	107	107	108	107
Structural gross unemployment (1,000 persons)	114	113	113	110	110	107
Hourly productivity, entire economy	1.0	0.7	1.1	1.2	1.2	1.2
Hourly productivity, private urban sector	1.1	0.8	1.3	1.2	1.3	1.2
Growth in GVA per employed	0.6	0.7	1.0	1.3	1.3	1.2

Note: The forecast 2018-2019 is based on the business cycle foundation in *Economic Survey*, December 2017. The forecast from 2020-2025 derives from technical projections.

Source: Statistics Denmark and own calculations.

Chapter 3

Budget Balance and Public Debt towards 2025

In the coming years, fiscal policy is planned such that the structural deficits are gradually reduced and the economic policy is in line with the medium term goal of structural balance in 2025. The fiscal and structural policy thereby includes a gradual tightening, hereof by decreasing expenditures in per cent of GDP, which contribute to a dampening of capacity pressures in the Danish economy. In most of the years from 2017-2023, the structural budget balance is strengthened a little in the current assessment, which amongst other things reflects an estimated increase in the structural revenue from equity income taxation. The structural budget balance is unchanged in 2024 and 2025 compared to the 2025-plan.

The actual budget balance is estimated to comply with the 3 per cent limit given by EU's Stability and Growth Pact in the projection period. The public EMU debt is estimated at about 40 per cent of GDP in 2025 i.e. keeping a broad safety margin to the debt limit of 60 per cent in the Stability and Growth Pact.

The Government has a goal of a basic real growth in public consumption of 0.3 percent. Expenses made possible by reforms as well as increases investment in security incl. defence expenditures are additional to the basic real growth goal. In light of the agreed increase in public consumption defence expenditures in towards 2023, cf. Agreement for Danish Defence 2018-2023, real public consumption growth is 0.4 per cent p.a. in 2019-2025 in the projections.

Within the goal of structural balance in 2025, the fiscal space is estimated to approx. DKK 33 bn. in 2025 compared to the 2017 level. This is approx. in line with the estimated fiscal space in the latest projections from August. Taking into account that the fiscal space in 2018 is allocated with the approved budget bill for 2018 etc., fiscal space towards 2025 (compared to the 2018 expenditure-level) amounts to approx. DKK 29½ bn. Hereof approx. DKK 12½ bn. is allocated to public consumption growth in the projection whereas the remaining fiscal space is placed as a reserve for other priorities outside public consumption (approx. ¾ per cent of GDP).

The tax burden and expenditure ratio reached high levels in the wake of the global financial crisis, where public expenditures increased rapidly. Corrected for temporary contributions, e.g. business cycles, the expenditure ratio has been declining since 2012 and the tax burden, adjusted for a number of temporary conditions, has been declining since 2015.

3.1 The budget balance

The preliminary figures from Statistics Denmark show that the actual budget balance surplus amounted to DKK 21½ bn. in 2017 corresponding to approx. 1 per cent of GDP. The surplus is approx. 1 per cent of GDP larger than estimated in the last projection of December 2017, primarily due to larger revenues from the pension yield tax. The preliminary general government budget figures for 2017 which are incorporated in the present projection[1] are described in more detail in *box 3.1*.

Based on the current assessment of the economic situation and the assumptions regarding fiscal policy, the general government budget deficit is estimated to 0.7 per cent of GDP in both 2018 and 2019, *cf. table 3.1*.

Table 3.1

Overview of the actual budget balance

	2017	2018	2019	2020	2021	2025
Budget balance, per cent of GDP	1.0	-0.7	-0.7	-0.7	-0.6	0.0

Source: Statistics Denmark and own calculations.

Despite expected growth in both GDP and employment the budget surplus in 2017 is expected to return to a deficit in 2018-2019. This is primarily due to the volatile revenues from the pension yield tax and corporate taxes which are expected to decrease by approx. 1.7 per cent of GDP from 2017 to 2019. Further the North Sea revenues are also expected to drop, while the cyclical upturn pulls in the opposite direction.

The estimated deficit on the government budget balance of 0.7 per cent of GDP in 2018-2020 is gradually reduced towards the objective of a balance in 2025.

[1] In the calculation of the structural government budget balance, corrections have been made in the light of information about public revenues, which is so far not reflected in Statistics Denmark's calculation of the government budget balance. The adjustment corresponds to a strengthening of the structural government budget balance of approx. 0.05 per cent of GDP in 2017.

Box 3.1

Preliminary statement on the actual budget balance in 2017

Statistics Denmark's preliminary figures for the public finances for 2017 show a surplus on the actual budget balance of DKK bn. 21½ corresponding to 1.0 per cent of GDP. The surplus on the actual budget balance is thus approx. 22¼ larger than estimated in the *Economic Survey*, December 2017.

The larger surplus on the actual budget balance in 2017 can be attributed to larger revenues than expected, namely due to higher revenues from the pension yield tax and equity income taxation, which are approx. DKK 14¼ and 3¼ bn. larger than estimated.

Table a
The actual budget balance in 2017

DKK. bn.	2017
Preliminary accounting figures	**21.5**
Estimate in *Economic Survey*, December 2017	**-0.8**
Difference	**+22.3**
Pension yield tax	*+14.3*
Equity income tax	*+3.4*
Corporate tax (incl. carbon tax)	*+1.2*
VAT	*-2.5*
Public consumption	*+0.4*
Public investment	*+1.1*
Transfer to the EU	*+1.7*
Other factors	*+2.7*

The revenues from the pension yield tax and the equity income tax are 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.

Budget balances by sector

The public sector consists of central government, local governments (regions and municipalities), and social security funds. In Denmark it is basically only the central government, which need not to balance the budget. The central government budget surplus is expected to be 1.0 per cent of GDP in 2017, while a balanced budget is expected in the local governments, *cf. table 3.2*. In 2018-2020 the central government budget is expected to show a deficit of 0.7 per cent of GDP, which gradually is reduced towards the political goal of a balanced budget in 2025.

The budget balance of the municipalities and regions are 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 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 balances by subsectors

Per cent of GDP	2017	2018	2019	2020	2021	2025
Central government	1.0	-0.7	-0.7	-0.7	-0.6	0.0
Local government (municipalities and regions)	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

Budget balance estimates compared to December assessment

Compared to the latest *Economic Survey* from December 2017 estimate for the actual budget balance has improved by DKK ¾ bn. in 2018, while the estimate for 2019 has worsened by DKK 1½ bn., *cf. table 3.3*. The uncertainty of estimates of the actual budget balance is considerable.

Effects of the preliminary statement of 2017, new projected oil prices and interest rates, political agreements -including the tax reform of February 2018- has among other things been included since the December survey. A new projection of the Danish economy is due in the Economic survey, May 2018.

The actual budget balance is improved in both years due to higher estimated revenues from equity income tax and corporate taxes, while lower estimated revenues from value added tax (VAT) and excise duties contribute to a worsening of the actual budget balance in both years.

The revenue from equity income tax is adjusted upwards by DKK 1½-2 bn. in 2018-2019. The adjustment reflects that higher revenues from dividend tax and gains tax in the last few years is expected to continue in 2018 and 2019. At the same time it is assumed that the presupposed refund of dividend tax, which was not paid in 2017, will be paid in 2018 and 2019, which other things equal reduces the estimated revenues from equity income tax in 2018-2019.

Revenues from the corporate tax are adjusted upwards by approx. DKK 1-1¼ bn. in 2018-2019, also as a result of higher revenues in the preliminary figures for 2017.

Conversely, the revenues from VAT and excise duties are together adjusted downwards by approx. DKK 1½ bn. in 2018 and DKK 3½ bn. in 2019. This adjustment can also be contributed to the statement for 2017, which shows lower revenues for VAT and excise duties than presupposed in the December projection. In addition there is an effect of a downward adjustment of the VAT base in 2019 due to a lower total investment growth.

Table 3.3

Changes in the estimated actual budget balance in 2018-2019

DKK bn.	**2018**	**2019**
Economic Survey, December 2017	**-17.2**	**-14.8**
+ changed estimate for equity income tax revenue	1.5	2.0
+ changed estimate for corporate tax revenue	1.1	1.2
+ changed estimate for pension yield tax revenue	-0.8	-0.7
+ changed estimate for revenues from VAT and excise duties	-1.7	-3.5
+ changed estimate for other factors	0.6	-0.6
Denmark's Convergence Programme 2018	**-16.4**	**-16.3**
Per cent of GDP		
Economic Survey, December 2017	-0.8	-0.6
Denmark's Convergence Programme 2018	-0.7	-0.7

Source: 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 contrary 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 latest assessment of the structural budget balance for the years towards 2019 was in *Economic Survey,* December 2017. The public finances for the years 2020 and onwards was last assessed in the medium term projection from August 2017.

Based on the updated projections in the Convergence Programme, which among other things is based on the March version of the national account and other new information, the structural budget balance is estimated to be improved with an average of 0.1 per cent of GDP annually from 2017 to 2023 since the latest assessments, *cf. table 3.4*. With the updated assessment in August 2018, where the Government presents the budget bill proposal for 2019 and expenditure ceilings for 2022, the development in the structural budget balance will be considered on an updated foundation.

The budget improvement in 2017-2019 is due to higher realised and estimated revenues from a number of special budget items, mainly from the equity income taxation, which affects the structural revenue through a seven year moving average. In 2020-2023 the improvement from the special budget items declines. On the other hand, a higher estimated structural employment and lower income transfers contribute to improve the budget balance over the years. Lower interest rate levels than earlier assumed also contribute to an improved balance towards 2025.

In 2024-2025 the improvement from the mentioned factors is counteracted by a downwards adjustment of the North Sea revenues, which are reduced by approx. 0.15 per cent of GDP in both years. The structural budget balance is thereby unchanged in 2024 and 2025.

Table 3.4

Estimated structural budget balance

Per cent of GDP	2017	2018	2019	2020	2021	2022	2023	2024	2025
Latest assessment	-0.2	-0.3	-0.2	-0.1	0.0	0.2	0.1	0.0	0.0
Convergence Programme 2018	-0.1	-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 2017 for 2017-2019 and Updated 2025-projections, August 2017 in 2020-2025 (only available in Danish).
Source: Updated 2025-projections, August 2017, Economic Survey, December 2017 and own calculations.

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 of 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.

Table 3.5

From actual to structural budget balance

	2017	2018	2019	2020	2021	2025[6)]
Per cent of GDP						
1. Actual balance	**1.0**	**-0.7**	**-0.7**	**-0.7**	**-0.6**	**0.0**
Contribution to the actual budget balance:						
2. Cyclical adjustment	-0.1	0.3	0.5	0.3	0.2	-
3. Corporate taxes[1)]	0.6	0.4	0.2	0.1	0.0	-
4. Vehicle registration duty	0.1	0.2	0.2	0.0	0.0	-
5. Pension yield tax	0.3	-0.9	-1.0	-0.9	-0.8	-
6. North Sea revenues[2)]	-0.3	-0.1	-0.2	0.0	-0.1	-
7. Net interest payments[1)]	0.2	0.1	0.1	0.1	0.0	-
8. Special budget items[3)]	0.4	-0.3	-0.5	-0.3	0.1	-
9. Other factors[4)]	-0.2	-0.1	0.0	0.1	0.0	-
10. Structural balance (1-2-3-4-5-6-7-8-9)[5)]	**-0.1**	**-0.2**	**-0.1**	**-0.1**	**0.1**	**0.0**
Memo item: Weighted cyclical gap	-0.1	0.4	0.6	0.4	0.2	-

1) Excl. revenue relating to North Sea activities.
2) The structural level for years up to 2021 is based on the structural revenue as of Updated 2020-projection (September 2015) for the years 2016-2019, 2020-projection (August 2016) for 2020 and 2025-projection (August 2017) for 2021, adjusted for the effect on fiscal sustainability due to revised future North Sea revenues. The permanent effect of updated revenues corresponds -0.09 per cent of GDP in 2016, -0.12 per cent of GDP for 2017-2019, -0.05 per cent of GDP in 2020 and -0.03 per cent of GDP in 2021. The revenues are further adjusted for the direct consequences on the North Sea revenues towards 2021 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). 2019 and 2020 is corrected for payback of property taxes as a consequence of the transition to the new real estate valuation system (following the Agreement on housing taxation (May 2017).
4) Incl. correction for differences between the commitment level and pay-outs regarding foreign aid and conversion from per cent of actual GDP to per cent of structural GDP. Due to the tax rebate regarding the restructuring of existing capital pensions it is estimated that ordinary capital pension tax revenues of DKK 5 bn. in 2013 and more than DKK 2 bn. in 2014, respectively, have been carried forward from the period 2015-19. Also, a correction is made for 2017 due to new information on public revenues, which is not reflected in Statistics Denmark's reported actual budget balance. Further, in 2018-2021 a correction is made for the fighter jet investment, which is planned in the period 2021-2026, but affect the structural budget balance through a 7-years moving average.
5) The structural budget balance is recorded as a per cent of structural GDP.
6) From 2022 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.

As an example, the structural deficit of 0.2 per cent of GDP in 2018 is based on the estimated actual deficit of 0.7 per cent of GDP, *cf. table 3.5* (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. 0.3 per cent of GDP (row 2). In addition, the actual balance is corrected for a number of fluctuations in specific budget items (rows 3-8), where the revenue from the North Sea, pension yield tax, corporate taxes and vehicle registration duty etc. in total is estimated to be approx. 0.8 per cent of GDP below the structural level in 2018. This correction is mainly driven by low expected revenues from the pension yield and the special budget items, where the last mentioned is affected by one-time tax-free payments of early retirement contributions and property taxes following the agreements on more years on the labour market and on housing taxation. The one-off-payments do not affect the structural budget balance.

Finally a correction is made for other factors (row 9), namely reflecting temporary factors, i.e. non-recurring events (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. In 2018 this includes e.g. the frontloading of capital pension taxation from, among other years, 2018 to 2013 and 2014, *cf. appendix table 3.2*.

The Budget Law structural deficit limit of 0.5 per cent of GDP is set in order to ensure that the actual budget balance in a normal recession will comply with the deficit limit of the Stability and Growth Pact of 3 per cent of GDP with high probability. If the actual deficit exceeds the EU limit, Denmark will receive a new EDP-recommendation from EU in order to reduce the budget deficit within a given deadline and with a fixed consolidation requirement. This applies unless the EU considers the excessive deficit to be a temporary and limited effect.

The Budget Law structural deficit limit corresponds to Denmark's nationally set medium term objective (MTO) for public finances. The nationally set target is more ambitious than the European Commission's minimum requirement, which for Denmark implies a MTO for the structural balance of at least -1.0 per cent of GDP (upwards revised from the original target at -½ per cent of GDP to -¾ per cent of GDP and now -1 per cent). Thus, the limit of the Budget Law provides greater assurance that no fiscal policy adjustments are needed because of considerations regarding the actual balance, which is very volatile.

3.3 Fiscal space, public consumption and investment

In the latest medium term projections from August 2017, the fiscal space towards 2025 was DKK 32 bn. compared to the 2017 level. Since then, the Government has reached a number of political agreements, and new information on public finances etc. has become available.

In Convergence Programme 2018 the agreements and new information have been included. On that basis, the fiscal space has been calculated to approx. DKK 9½ bn. towards 2020 and approx. DKK 33 bn. towards 2025 compared to the 2017 level. This is a downwards adjustment of DKK 2¾ bn. in 2020 and an upwards adjustment of approx. DKK 1 bn. in 2025 compared to the calculated fiscal space in August 2017, *cf. table 3.6.*[2]

The fiscal space in 2018 is fully allocated with the approved budget bill for 2018 etc. From the Convergence Programme and onwards, the reported fiscal space will therefore take its offset in the 2018 expenditure level, corresponding to the available fiscal space from 2019 and onwards. Compared to the 2018 expenditure level, fiscal space amounts to approx. DKK 29½ bn. towards 2025 reflecting that one year less is included in the aggregate.[3]

Similarly there is one year less in the estimated growth in the so-called demographic pressure on public expenditures, which in the Convergence Programme amounts to DKK 22 bn. compared to the 2018 level.

Out of the total fiscal space approx. DKK 12½ bn. is placed as public consumption expenditures, *cf. detailed below*, whereas the residual fiscal space of approx. DKK 17 bn. is placed as a reserve to other priorities outside public consumption.

Table 3.6

Updated fiscal space

	2018	2019	2020	2021	2022	2023	2024	2025
Compared to the 2017-expenditure level (DKK bn. 2018 prices)								
Updated 2025-projection, August 2017	4¾	10½	12¼	13	18	22½	28	32
Convergence Programme 2018	3½	8¼	9½	11	16	22½	28¾	33
Change in fiscal space since Updated 2025-projection, August 2017	**-1¼**	**-2¼**	**-2¾**	**-2¼**	**-2**	**0**	**½**	**1**
Compared to the 2018-expenditure level (DKK bn. 2018 prices)								
Convergence Programme 2018	-	5	6	7½	12¾	19	25¼	29½
hereof public consumption growth	-	*1½*	*3½*	*5¼*	*7*	*9¾*	*11¼*	*12½*
hereof reserve for other priorities	-	*3½*	*2¾*	*2¼*	*5½*	*9¼*	*14*	*17*

Note: The fiscal space is calculated with uncertainty namely after the years with expenditure ceilings 2018-2021. The uncertainty is increasing over time. The exact reported numbers in the table reflects the concrete estimates in the projection.

[2] The fiscal space of manoeuvrability is calculated as the technically possible real growth in public consumption expenditures excl. deductions within the goal of structural balance in 2025 compared to a scenario without real growth in public consumption expenditures (zero growth scenario).
[3] The fiscal space in comparison the 2018 expenditure-level amounted to approx. DKK 27½ bn. in the medium term projection from August 2017.

Box 3.2

Changes in fiscal space since August 2017

Since the updated medium term projection in August 2017 a number of political agreements, which have contained financing from the fiscal space, have been reached. Among others these include agreement on business and entrepreneurial initiatives, agreement for Danish Defence and agreement on lower labour taxes and higher deductions on pension contributions*, cf. table a.*

Besides political agreements, the fiscal space compared to 2017 has among other things been adjusted due to preliminary statements on public consumption in 2017, which in 2018 prices amounts to approx. DKK 1¼ bn. lower than budgeted in August. Also, the current projection includes concrete estimates of the so-called PSO expenditures (expenditures for green energy) after 2022, which reflects that the future framework for energy policy is to be determined with the upcoming energy agreement. Earlier projections of the PSO expenditures have been a technical forecast based on a constant share of GDP. Because of the new concrete estimates, based on the Danish Energy Agency's baseline projection 2018, have a decreasing profile in 2023-2025, the concrete estimates increase the fiscal space in these years. Like other estimates, the PSO-expenditure estimates are subject to uncertainty and are among other things sensitive to updated electricity prices assumptions.

Table a
Changes in fiscal space since August 2017

	2020	2025
Updated 2025 projection, August 2017 measured as highest possible public consumption growth compared to 2017 level, DKK bn. (2018 prices)	**12¼**	**32**
Direct contribution from fiscal space in agreement on business and entrepreneurial initiatives	-¼	-½
Revenue from making DSB more efficient is used as financing in agreement on business and entrepreneurial initiatives[1)]	-½	-1¼
Agreement on expansion of the highway on western Funen	-½	0
Agreement on a new model for financing of social housing[2)]	¼	¼
Agreement on defence 2018-2023	-½	0
Direct contribution from fiscal space in agreement on lower labour taxes and higher deductions on pension contributions	-2¼	-¾
Tax cuts on the approved budget bill for 2018	-½	-½
Concrete estimates for PSO-expenditures after 2022	0	2½
Preliminary public statements for 2017	1¼	1¼
Others (net)[3)]	0	-¼
Denmark's Convergence Programme 2018 compared to 2017 expenditure level	**9½**	**33**
Denmark's Convergence Programme 2018 compared to 2018 expenditure level	**6**	**29½**

1) The reported effects reflects the originally revenue from making DSB more efficient. The revenue profiles have been adjusted since August.
2) The agreement is also included in the medium term projection from August 2017. The reported numbers are differences in revenues between the proposed model and the final model for financing of social housing.
3) Includes, among other things, the effect of the agreement on the Danish Vacation Law, initiatives categorised as public consumpotion in agreement on business initiatives and agreement on lower labour taxes and higher deductions on pension contributions and other new information in the updated assessment.

The fiscal space is calculated as the highest possible public consumption real growth given other priorities and decided tax policy etc. The fiscal space is thus the available room for manoeuvrability for budget bills and agreements with municipalities and regions and for handling unavoidable expenditures, in absence of new financing and underlying declining expenditure etc.

Public consumption

Based on preliminary public account figures real growth in final public consumption expenditure (including consumption of fixed capital) was 0.7 per cent in 2017[4], which is 0.2 percentage points higher than estimated in *Economic Survey,* December 2017. The higher real growth in 2017 is mainly due to a lower increase in prices than expected, whereas the nominal public consumption expenditure is approximately DKK ½ bn. lower than estimated in December.

In the years 2019-2025 the basis of the projection is the public consumption expenditure excluding consumption of fixed capital. Based on preliminary public account figures real growth in public consumption excluding consumption of fixed capital was 0.5 per cent in 2017, *cf. figure 3.1*.

The government has a target of a baseline real growth in public consumption expenditure of 0.3 per cent a year during the projection period. Increased investments in public safety and expenditure made possible from reforms are additional to the government's target.

Consequently, in 2019-2025 real growth in public consumption expenditure is presumed to equal 0.3 per cent per year in addition to the share of the increase in defence expenditure categorized as public consumption. Thus, in the projection real growth in public consumption expenditure is 0.4 per cent per year on average in 2019-2025

[4] Measured by the input approach. Real growth in public consumption expenditure measured by the output approach was 1.2 percent in 2017.

Figure 3.1

Real growth in public consumption expenditure

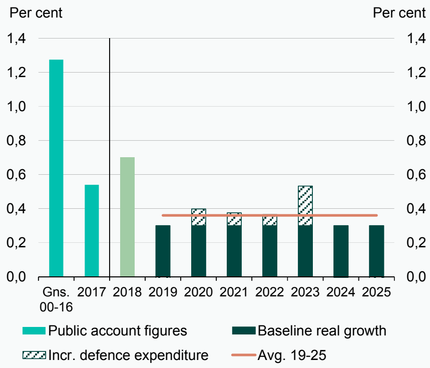
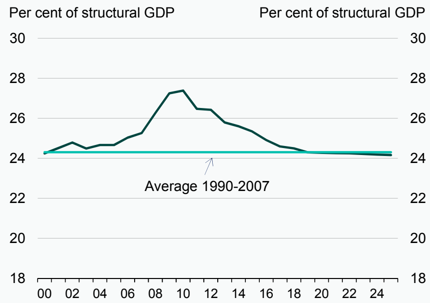


Figure 3.2

Level of public consumption expenditure



Note: Real growth in public consumption expenditure is measured by the input approach. Public consumption expenditure in figure 3.1 excludes consumption of fixed capital, whereas public consumption expenditure in figure 3.2 includes consumption of fixed capital.
Source: Statistics Denmark and own calculations.

The period 2019-2025 is characterized by a limited real growth in public consumption expenditure compared to the period 2000-2016, where real growth in public consumption expenditure was approximately 1¼ per cent per year on average. The level of public consumption expenditure in the projected years of 2020-2025, measured as a share of GDP, is roughly equal to the average level during the period 1990-2007 before the financial crisis, *cf. figure 3.2*.

From 2018 until 2025 public consumption expenditure (excl. consumption of fixed capital) is increased by DKK 12½ bn. in the projection. The remaining fiscal space is thus estimated at DKK 17 bn.[5]

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 3.3*.

With the government's lift of the level of public investment in buildings and facilities etc. in 2021-2025 the level of public investment is estimated at 3.5 per cent of GDP in 2021-2025. This is a high share compared to the years before the financial crisis. The medium term projection implies that the level of total public investment will increase from DKK 75.4 bn. in 2018 to DKK 84.9 bn. in 2025 (2018 prices).

[5] The remaining fiscal space is technically placed under other public expenditures as a transfer to the private sector. This means that the structural budget balance is not affected by the technical placement of the reserve.

Compared to the assessment in the updated 2025 projection, August 2017 the level of public investment in the medium-term projection has been adjusted following political agreements etc. The adjustments particularly reflect a financed lift of the level of public investment following the agreement on the restructuring of car taxation for expanding the highway on western Funen, a reduced lift of the level of public investment following the agreement on lower labour taxes and higher deductions on pension contributions as well as a financed lift of the level of public investment in 2020 following the agreement on defence for 2018-2023.

Figure 3.3

Public investment including research and development

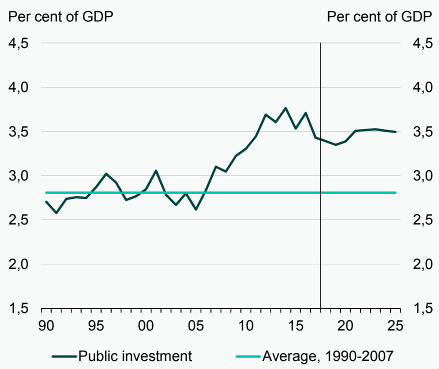
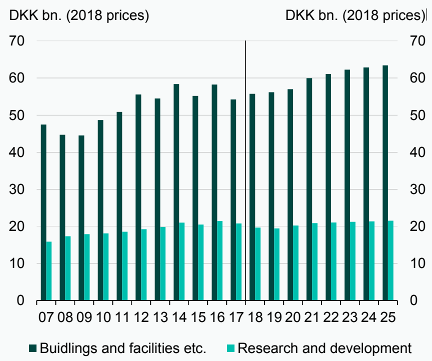


Figure 3.4

Public investment by sector



Source: Statistics Denmark and own calculations.

The currently planned public investments in buildings and facilities etc. in 2019-2020 are currently estimated to exceed the assumed levels in the medium-term projection. In the absence of further financing, there will be a need for adjusting the planned public investments to the level assumed in the projection.

3.4 Public expenditures and revenues

The tax- 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 3.5 and 3.6*.

Figure 3.5

Development in tax burden

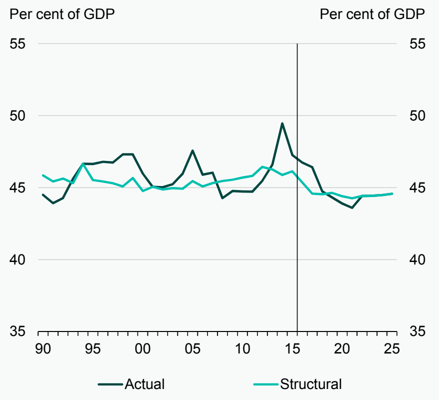
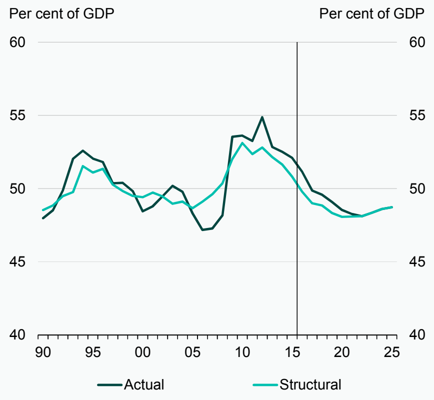


Figure 3.6

Development in 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 tax burden and expenditure ratio, taking business cycles, one offs and temporary fluctuations in pensions 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 to fall from 51 per cent of GDP in 2017 to 50 per cent of GDP in 2025, *cf. table 3.7*.

The decline expenditure ratio reflects amongst other things that implemented reforms and political initiatives increase GDP and reduce income transfer expenditures. Also contributing is a moderate growth in public consumption, which is technically based on the government's goal of a basic growth rate of 0.3 per cent per year plus 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 other political priorities. The reserve is increasing as a share of GDP towards 2025.

Table 3.7

Composition of public expenditure

	2017	2018	2019	2020	2021	2025[3)]
Per cent of GDP						
Public expenditure (expenditure ratio)[1)]	50.9	50.6	50.0	49.5	49.2	49.8
Primary expenditures	49.9	49.6	49.1	48.6	48.2	48.6
- Public consumption	25.0	24.8	24.5	24.5	24.4	24.2
- Public investment[2)]	3.4	3.4	3.3	3.4	3.5	3.5
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	2.5	2.5	2.5	2.6	2.6
- Income transfers	16.8	16.5	16.2	16.0	15.9	15.9
- Subsidies	1.8	1.7	1.6	1.6	1.5	1.3
- Other primary expenditures	2.9	3.2	3.4	3.2	2.9	3.7
Interest expenditures	1.1	1.0	0.9	0.9	1.0	1.2

1) Total public expenditures (and revenues) differ from Statistics Denmark. Here the expenditure ratio is calculated on the basis of total expenditure figures that include all sub-elements of public consumption, including e.g. imputed expenditures in terms of depreciation and revenues from sales of goods and services. The budget balance is unaffected by these technical differences.
2) Public investment is calculated excl. net purchases of buildings etc. Since Statistics Denmark's ESA2010-revision of the national accounts in autumn of 2014, public investment also includes research and development spending.
3) From 2022 and onwards, projected levels are based on technical principles.
Source: Statistics Denmark and own calculations.

Public consumption expenditures accounted for 25 per cent of GDP in 2017 and are assumed to decrease gradually to approx. 24 per cent of GDP in 2025. The reduction should be seen in light of the assumed real growth and the effect of reforms etc., which increase GDP.

The development of public consumption should also be seen in light of the inclusion of a reserve for the government's other 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 primary expenditures*.

Public investment as a share of GDP is preliminarily estimated at 3.4 per cent in 2017. With the government's lift of the level of public investment in buildings and facilities etc. public investment is estimated to stay at a high level towards 2025, where public investment is estimated to account for approx. 3.5 per cent of GDP.

Public spending on income transfers amounted to approx. 16¾ per cent of GDP in 2017 and is estimated to be reduced to a level of approx. 16 per cent of GDP in 2025, *cf. figure 3.7*. This development reflects the effect of the retirement reform which increased the voluntary early retirement age as well as the statuary age of retirement. Also, other and other reforms contribute, including the tax agreement from June 2012 which included a lower regulation of public income transfers.

Figure 3.7

Total spending on income transfers

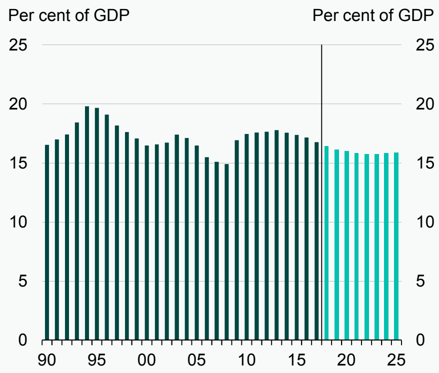
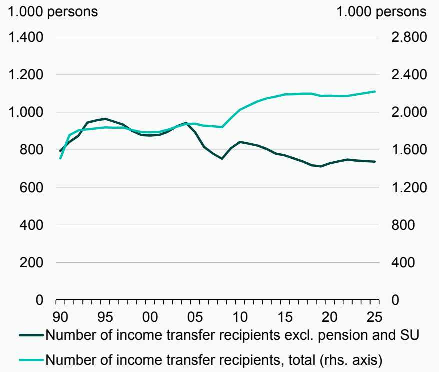


Figure 3.8

Income transfer recipients incl. and excl. old age retirees and students (SU)



Source: Statistics Denmark and own calculations.

Subsidies are expected to be reduced from 1¾ per cent of GDP in 2017 to approx. 1¼ per cent of GDP in 2025. The reduction of subsidy spending partly reflects the phasing out of the old flexi-job scheme as well as decreasing expenditure for PSO towards 2025 in the Danish Energy Agency's baseline projection.[6]

Public interest payments are estimated to account for 1 per cent of GDP in 2017. Towards 2025 interest expenses will be increased to approx. 1.2 per cent of GDP following the assumed gradual normalization of interest rates.

The composition of public expenditure by function (the functional distribution) shows that social protection spending is by far the largest expenditure item, *cf. table 3.8*. The expenditure for social protection has shown a downward trend during the period 2013-2017 from approx. 24½ per cent of GDP in 2013 to approx. 22¾ per cent of GDP in 2017, 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 benefits, 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 respectively in 2017.

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

Table 3.8

Public expenditures by function, 2013-2017

	2013	2014	2015	2016	2017
Per cent of GDP					
General public services	7.5	7.3	7.4	6.8	6.3
Military defence	1.3	1.1	1.1	1.1	1.2
Public order and safety	1.0	1.0	1.0	1.0	1.0
Economic affairs	3.5	3.6	3.6	3.3	3.3
Environment protection	0.5	0.5	0.4	0.4	0.4
Housing and community amenities	0.3	0.2	0.2	0.3	0.2
Health care	8.5	8.6	8.6	8.6	8.5
Recreation, culture and religion	1.8	1.7	1.8	1.8	1.7
Education	6.9	7.1	7.0	6.9	6.6
Social protection	24.5	24.0	23.6	23.4	22.7
Public expenditures in total[1)]	**55.8**	**55.2**	**54.8**	**53.6**	**51.9**

Note: 2015-2017 reflect preliminary accounting figures.
1) Calculation of the total public expenditures in Statistics Denmark differ from the calculations in table 3.7 due to differences in the methodology (in table 3.7 the imputed expenditures are recognized in terms of depreciation and revenues from sales of goods and services on the expenditure side, which is not the case in Statistics Denmark table 3.7).
Source: Statistics Denmark.

Public revenues

Public revenues amounted to 51.9 per cent of GDP in 2017 and are estimated to fall to approx.49.8 per cent of GDP in 2025, *cf. table 3.9*.

The revenue from personal income tax amounted to approx. DKK 453 bn. in 2017, corresponding to 21.1 per cent of GDP. By 2025 it is expected that the revenue is reduced to approx. 20.2 per cent of GDP. The reduction is due to the implemented tax initiatives and households higher deductions for negative net capital income that arise from the assumed gradually rise in interest rates.

The revenue from the pension yield tax amounted to approximately DKK 31½ bn. in 2017, corresponding to 1.5 per cent of GDP. The relatively high pension yield tax revenues in recent years are partly caused by the fact that interest rates have fallen to the current historically low levels. The pension companies have a relatively high share of their assets placed in bonds, which value ceteris paribus rise, when the interest rate fall. As the interest rates gradually approach their natural level over the coming years, a period with relatively low revenues from the pension yield tax can be expected. Thus, interest rate fluctuations 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. Based on the expected interest rate developments, the return on bonds and derivate assets of pension companies are estimated to be relatively low in the forthcoming years. From 2022 revenues from the pension yield tax is assumed to be at the structural level of approximately 1.2 per cent of GDP.

VAT revenues amounted to approx. DKK 205 bn. in 2017, corresponding to 9.5 per cent of GDP. Due to an increasing consumption ratio in households and an increase in housing and business investments etc., VAT revenues are estimated to increase to 10 per cent of GDP towards 2025.

Other indirect taxes primarily include excise duties, among others, in the form of energy and environmental taxes, taxes on tobacco and spirits, gambling taxes and PSO-revenues[7]. In addition, indirect tax revenues include the vehicle registration tax, municipal property taxes (i.e. land tax etc.), motor vehicle weight duty firm companies, duty on wage and salary costs and stamp duties. In total, other indirect tax revenues amounted to almost DKK 143 bn. In 2017, corresponding to 6.7 per cent of GDP, and are expected to decrease to approx. 6.0 per cent of GDP in 2025.

North Sea revenues amounted to approx. DKK 4¾ bn. corresponding to 0.2 per cent of GDP. Subject to a considerable amount of uncertainty North Sea revenues are expected amount to 0.2 per cent of GDP in 2018 and 0.1 per cent of GDP in 2019. The revenues from the North Sea activities are to a large degree affected by changes in production and oil prices (in DKK). Based on the latest production forecast by the Danish Energy Agency and updated oil price estimates revenues are expected to amount to approx. 0.2 per cent of GDP in 2025.

Public interest income amounted to approx. DKK 19¼ bn. in 2017 corresponding to 0.9 per cent of GDP. After an expected decrease to 0.7 per cent of GDP in 2018-2019, public interest income is expected to gradually increase to approx. 0.9 of GDP in 2025 in light of the current low interest rate levels.

[7] 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 3.9

Public revenue

	2017	2018	2019	2020	2021	2025[8)]
Per cent of GDP						
Personal income tax.[1)]	21.1	20.8	20.7	20.4	20.3	20.2
Labour market contributions	4.4	4.5	4.5	4.5	4.5	4.5
Pension yield tax	1.5	0.2	0.2	0.3	0.3	1.2
Corporate income taxes	3.0	2.8	2.6	2.5	2.4	2.4
- Corporate income taxes on hydrocarbon manufacturing	0.1	0.1	0.1	0.1	0.1	0.1
- Other corporate income taxes	2.9	2.7	2.5	2.5	2.3	2.3
VAT	9.5	9.7	9.8	9.8	9.8	10.0
Other indirect taxes	6.7	6.6	6.4	6.3	6.1	6.0
Other taxes[2)]	0.3	0.3	0.2	0.2	0.2	0.2
Taxes and duties (tax burden)	**46.5**	**44.9**	**44.4**	**43.9**	**43.6**	**44.6**
Interest income[3)]	0.9	0.7	0.7	0.8	0.7	0.9
Other revenues[4)]	4.4	4.1	4.0	4.0	4.1	4.2
Duties etc. to EU[5)]	0.1	0.1	0.1	0.2	0.2	0.2
Total public revenue[6)]	**51.9**	**49.8**	**49.3**	**48.8**	**48.6**	**49.8**
Memo item: North Sea revenues[7)]	0.2	0.2	0.1	0.1	0.1	0.2

1) Personal taxes etc. include income tax, property value tax, motor vehicle weight duty from households, gift and heritage tax and other personal taxes.
2) Other taxes include a media license (primarily for Danish Radio) and mandatory pension contributions for civil servants in publicly-owned companies, etc.
3) Incl. dividends and profits from Danmarks Nationalbank.
4) 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 being categorized as rent).
5) According to national account 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. 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.
7) From 2020 and onwards, projected levels are based on technical principles.
Source: Statistics Denmark and own calculations

3.5 Public debt

The general government gross debt (EMU definition) as a share of GDP has been declining since the European debt crisis in the summer of 2011 and amounted to 36.4 per cent by the end of 2017, *cf. table 3.10*. The gross debt is expected to further decline towards 2020 as public budget deficits and repayments on government bonds will be funded by drawing on the government account at the central bank rather than new issues of government bonds. The balance of the government account is not included in EMU definition of gross debt, and budget deficit covered by government's account will thus not affect the gross debt (EMU definition), *cf. box 3.3*.

The debt ratio is expected to increase to approximately 40 per cent of GDP by 2025. The increase is primarily attributed to the reforms *Ny model for finansiering af almene boliger, 2017 (New financing model for social housing, 2017)* and *Tryghed om boligbeskatningen, 2016 (Security of housing taxation, 2016)*, both of which imply a parallel build up of government assets and liabilities. The reduction of gross debt over time has made these reforms feasible, making it possible to reduce the financing costs of social housing and allow homeowners to postpone property tax increases until the housing sale. Even though the reforms contribute to balance inflation, the debt level still maintains a wide safety margin to the 60 per cent of GDP limit as set by the Stability and Growth Pact.

Table 3.10

Overview of the public debt, end of year

	2017	2018	2019	2020	2021	2025
Per cent of GDP						
Gross debt (EMU definition)	36.4	35.6	34.8	34.2	36.2	39.5
Net public debt	1.3	2.0	2.6	3.2	3.7	1.8
Memo item: Actual budget balance	1.0	-0.7	-0.7	-0.7	-0.6	0.0

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

The net public debt is the central debt concept when assessing long-term fiscal sustainability. The net public debt was at 1.3 per cent of GDP in 2017, which is a low level considering the long lasting economic backlash following the financial crisis in 2008. The net public debt is expected to stay low at 1.8 per cent of GDP by 2025 due to projected budget surpluses outweighing the years of budget deficits. The projections for the net public debt are uncertain as value adjustments to the public assets and liabilities besides the government balance factor in as well. The adjustments to the public liabilities (and parts of the assets) will however have a tendency to smooth over the years. The public assets are expected to be positively adjusted over the years.

Box 3.3

Key public debt concepts

There are 3 primary debt concepts in use: The public net debt, general government gross debt (EMU-definition) and the 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). This differs from the EMU-definition of gross debt that is only net of EU government bonds. Unlike the other definitions, the net public debt is also measured at market value. The net public debt is important for assessing long-term fiscal sustainability.
- *General government gross debt (EMU-definition)* covers the combined consolidated financial liabilities of the state, municipalities, counties/regions as well as social security funds. The measure is important in regards to the EU's Stability and Growth Pact, which include a debt-to-GDP ratio of maximum 60 per cent. The EMU debt is purely a 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 EMU definition of gross debt, as budget deficits covered by drawing on (i.e. reducing) the central government account at the Danish Central Bank D instead of bond issues will not have effect.
- *Central government debt* only covers the government's debt and hence disregards debt in the other public sub-sectors. The management of the central government debt is handled by the Danish Central Bank. The measure is a gross concept but is calculated net of the government national account and the government securities holdings such as social housing bonds and funds' assets.

Appendix 3.1 Structural budget balance 2017-2021

Appendix table 3.1

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

	2017	2018	2019	2020	2021
Per cent of GDP					
1. Actual budget balance	**1.0**	**-0.7**	**-0.7**	**-0.7**	**-0.6**
Cyclical adjustment					
i) Output gap	-0.2	0.4	0.8	0.5	0.3
ii) Employment gap	0.0	0.4	0.5	0.3	0.2
a) Weighted cyclical gap = i)*0.4+ii)*0.6	-0.1	0.4	0.6	0.4	0.2
b) Budget factor	0.75	0.76	0.75	0.75	0.75
c) (1-(output gap/100))	1.00	1.00	0.99	0.99	1.00
2. Cyclical contribution = a)*b)*c)	**-0.1**	**0.3**	**0.5**	**0.3**	**0.2**
Pension yield tax					
Actual revenue	1.5	0.2	0.2	0.3	0.3
Structural revenue	1.1	1.1	1.1	1.2	1.2
3. Correction for pension yield tax	**0.3**	**-0.9**	**-1.0**	**-0.9**	**-0.8**
North Sea revenue					
Actual revenue	0.2	0.2	0.1	0.1	0.1
Structural revenue	0.5	0.3	0.3	0.1	0.2
4. Correction for North Sea revenue	**-0.3**	**-0.1**	**-0.2**	**0.0**	**-0.1**
Vehicle registration duty					
Actual revenue	0.9	1.0	1.0	0.9	0.8
Structural revenue	0.8	0.8	0.8	0.8	0.8
5. Correction for vehicle registration duty	**0.1**	**0.2**	**0.2**	**0.0**	**0.0**
Corporate taxes					
Actual revenue	2.9	2.7	2.5	2.5	2.3
Structural revenue	2.3	2.3	2.3	2.4	2.3
6. Correction for corporate taxes	**0.6**	**0.4**	**0.2**	**0.1**	**0.0**

Appendix table 3.1 (continued)

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

	2017	2018	2019	2020	2021
Per cent of GDP					
Net interest payments					
Actual revenue	-0.2	-0.3	-0.2	-0.2	-0.2
Structural revenue	-0.3	-0.3	-0.2	-0.2	-0.2
7. Correction for net interest payments	**0.2**	**0.1**	**0.1**	**0.1**	**0.0**
Special budget items					
Actual revenue before corrections for one-offs etc.	0.9	0.2	0.1	0.2	0.6
Actual revenue corrected for one-offs etc. for calculating of structural revenue, cf. appendix table 3.2	*0.9*	*0.5*	*0.5*	*0.4*	*0.6*
Structural revenue	0.5	0.6	0.6	0.5	0.5
8. Correction for special budget items	**0.4**	**-0.3**	**-0.5**	**-0.3**	**0.1**
9. Other corrections (cf. appendix table 3.2)	**-0.2**	**-0.1**	**0.0**	**0.1**	**0.0**
10. 1-2-3-4-5-6-7-8-9 Structural budget balance	**-0.1**	**-0.2**	**-0.1**	**-0.1**	**0.1**

Appendix 3.2 One-offs in 2017-2021

Appendix table 3.2

Corrections to the structural budget balance

	2017	2018	2019	2020	2021
Per cent of GDP					
One-offs corrected for in special budget items					
Extraordinary depreciation and amortization of tax and duty arrears	0.02	-	-	-	-
Extraordinary payments of early retirement contributions	-	-0.2	-	-	-
Extraordinary payback of property taxes	-	-	-0.4	-0.2	-
One-offs corrected for in special budget items in total	**0.0**	**-0.2**	**-0.4**	**-0.2**	**0.0**
Other one-offs					
Foreign aid – difference between committed level and pay-outs	0.0	0.0	0.0	0.0	0.0
Advancement of ordinary revenue from the capital pension tax [1)]	-0.1	-0.1	0.0	-	-
Correction for information on revenues that is not included in Statistics Denmark's statement	-0.1	-	-	-	-
Correction for investment in fighter jets[2)]	-	0.02	0.04	0.07	-0.03
Conversion to per cent of structural GDP	0.0	0.0	0.0	0.0	0.0
Other one-offs in total	**-0.2**	**-0.1**	**0.0**	**0.1**	**0.0**

1) Assumed advanced equally in 2015-2019.
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 CP 2017

The outlook for the Danish economy in the coming years is for stable growth with no immediate signs of a build-up of imbalances. Overall risks appear balanced, and there is a good possibility for the economic upturn to last several years.

There are, however, several circumstances that can affect the outlook.

The Danish economy is now in a situation where the output gap is in positive territory. The households and firms have large savings surpluses which can be converted into increased consumption and investments. In particular, it is assessed that a need for expanded production capacity can trigger a stronger rise in demand in the short term.

The global development has strong implications for the Danish economy, and the international growth picture is associated with significant uncertainty. Forecasts from international institutions like the European Commission, the OECD and the IMF point to continued solid economic growth, but this development can be slowed down, for example as a result of increased restrictions on trade. Protectionist tendencies globally – or even an actual trade war – can strike the Danish economy and thereby quench the on-going boom.

The assumptions in the Convergence Programme about the international economy and the financial conditions are relatively close to the external assumptions in the European Commission's latest forecast. This implies that there are only small changes in growth and public finances in Denmark when using the European Commission's assumptions as a basis for the business cycle foundation.

4.1 Sensitivity analysis

In the following different 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 Convergences Programmes of the EU countries. The sensitivity is illustrated by comparing the projection for 2018 and 2019 in the Convergence Programme to scenarios in which the external assumptions regarding the international economy and the financial conditions from the European Commission are used instead, and by comparing to a more positive as well as a more negative scenar-io.

Finally, the projection of selected key figures until 2021 in the current Convergence Pro-gramme (CP18) are compared to the projections of last year's Convergence Programme (CP17).

Scenario with the European Commission's external assumptions

The preconditions in CP18 regarding the international economy and the financial condi-tions are very closely aligned with the external assumptions of the European Commis-sion in their winter forecast from February with regards to oil prices and foreign growth, *cf. table 4.1.*

In *Convergence Programme 2018,* marginally higher interest rates are assumed in 2019 compared to the European Commission's winter forecast. This is due to higher market expectations regarding the interest rates in the USA since February, as well as expected greater economic activity.

Table 4.1

External assumptions (CP18 and the European Commission's winter forecast)

	2017	2018		2019	
		CP18	EU	CP18	EU
Growth in export markets, per cent[1)]	6.5	4.0	4.4	4.0	4.1
Crude oil price, USD per barrel	54.3	65.6	68.3	65.7	64.2
Short-term interest rate, percentage points [2)]	-0.6	-0.3	-0.3	0.0	0.0
Long-term interest rate, per-centage points[2)]	0.3	0.8	0.7	1.1	0.9

1) Growth in export markets concerns industrial goods and is shown as real growth in per cent.
2) Numbers refer to European interest rates. The level of the corresponding Danish rates has been modified in order to ensure that the spread to the euro area remains unchanged relative to the assumptions in CP18.
Note: The external assumptions are based on the European Commission's winter forecast from February 2018, except the export market growth, which is based on the European Commission's autumn forecast from November 2017, as there is no new estimate in the winter forecast from February.
Source: Own calculations and the European Commission.

There are only relatively modest differences. Thus, an alternative scenario based on the European Commission's external assumptions only implies very marginal changes in the central estimates for growth, employment, unemployment, budget balance, and public debt.

Alternative scenarios

The foundation for continued growth in the Danish economy is solid. The households have the possibility to further increase consumption, and the exports of firms are increased by the good development on Danish export markets.

The positive development in demand and increasing capacity utilization can create incentives for Danish firms to use their savings surplus to carry out further investments than assumed in *Convergence Programme 2018*. This will increase demand in the short term and will also have resulting effects on production capacity and productivity.

- *Positive scenario: With the prospect of greater demand than used as a basis in Convergence Programme 2018, Danish firms use their savings surplus to increase their business investments with a further 2 percentage points in both 2018 and 2019, such that the capital-output ratio converges faster towards the level from before the crisis.*

  In this alternative scenario GDP growth increases with about 0.2 percentage points in both 2018 and 2019. The higher rate of investment also has a derived positive effect on productivity growth, while employment rises with about 9,000 persons over both years. The actual budget balance improves with about 0.1 and 0.2 per cent of GDP in 2018 and 2019 respectively.

This scenario can bring the Danish economy towards a greater pressure on capacity. Reforms contribute to an increased labour force in the coming years, but should a shortage of labour supply occur, it would dampen the possible rate of growth. In this case, rising demand could lead to rising prices and wages.

The key figures for the development abroad have generally been positive. The assumptions in CP18 regarding the export market growth are maintained compared to the latest forecast in *Economic Survey*, December 2017, where it is assumed that trade relations between United Kingdom and EU27 remain unchanged. There is still great uncertainty attached to growth abroad, and there are significant downward risk elements, among others related to Brexit and tendencies towards increased protectionism in other countries.

Protectionist measures can take many forms and may cause anything from small economic consequences to being destructive for the world economy in the case of widespread trade wars. The IMF has previously estimated that a 10 percentage point rise in import tariffs on goods between the world's largest economies can reduce world trade by 1 per cent and global GDP by 0.5 per cent over three years. The sensitivity in the Danish economy to such a rise in global trade costs on goods is illustrated in the following scenario:

- *Negative scenario: As a consequence of rising global trade costs on goods, the Danish export market growth is assumed to decline by 1 percentage point, compared to what is used as a basis in Convergence Program 2018. The firms respond to the falling demand and rising uncertainty by reducing investment growth by 1 percentage point.*

  The negative effects of increased trade restrictions in this alternative scenario affect GDP growth negatively by 0.2 percentage points in both years. The pickup in employment is reduced by just below 10,000 persons, while the budget balance is worsened by 0.1 and 0.2 per cent of GDP in 2018 and 2019 respectively. The trade balance in per cent of GDP is marginally improved.

A notably more negative scenario may follow if trade costs rise significantly more. In this case, the Danish economy will be affected much more than in the negative scenario analysed above.

The Danish economy is in a good position to handle a less favourable growth development. The budget balance's deficit is quite far from the limit of 3 per cent of GDP, and in the alternative scenarios Denmark will continue to abide by the demands of the Budget Law and the Stability and Growth Pact, *cf. table 4.2*.

Table 4.2

Alternative Scenarios

	2018	2019
Convergence Programme 2018		
GDP growth	1.9	1.7
Employment, 1,000 persons	2,855	2,877
Unemployment, per cent of the labour force	3.8	3.6
Budget balance, per cent of GDP	-0.7	-0.7
Public gross debt (EMU definition), per cent of GDP	35.6	34.8
Positive scenario		
GDP growth	2.1	1.9
Employment, 1,000 persons	2,858	2,883
Unemployment, per cent of the labour force	3.7	3.4
Budget balance, per cent of GDP	-0.7	-0.6
Public gross debt (EMU definition) , per cent of GDP	35.4	34.4
Negative scenario		
GDP growth	1.7	1.5
Employment, 1,000 persons	2,852	2,870
Unemployment, per cent of the labour force	3.8	3.7
Budget balance, per cent of GDP	-0.8	-0.9
Public gross debt (EMU definition), per cent of GDP	35.7	35.2

Note: The table shows registered gross unemployment.
Source: Statistics Denmark and own calculations.

4.2 Comparison with Convergence Program 2017

Growth in GDP in 2017 was larger than what was assumed in *Convergence Programme 2017*. In *Convergence Programme 2017* it was expected that there would continue to be a small negative output gap in 2017. The output gap was, however, mostly closed in 2017. Expected GDP growth in 2018 and 2019 and towards 2025 is largely unchanged in *Convergence Programme 2018* in comparison to *Convergence Programme 2017*.

The budget balance in 2017 was better than estimated in *Convergence Programme 2017*. There was a surplus of 1.0 per cent of GDP, while there was estimated a deficit of 1.9 per cent of GDP in *Convergence Programme 2017*. The improvement should be seen in the light of higher revenues from the volatile pension yield tax because of interest rate developments, higher revenues from the company tax and higher revenues from the stock income tax. The expectation for 2018 is mostly unchanged, while for 2019 the public deficit is adjusted slightly downward.

The public gross debt (EMU definition) is expected to remain below 40 per cent of GDP in *Convergence Programme 2018*, i.e. within a good margin to the 60 per cent limit in the Stability and Growth Pact. This is unchanged compared to what was assumed in *Convergence Programme 2017*.

Table 4.2

Changes compared to Convergence Programme 2017

	2017	2018	2019	2020	2021	2025
			Yearly change, per cent			
Real GDP growth						
CP17	1.5	1.7	1.7	2.0	1.4	1.2
CP18	2.2	1.9	1.7	1.6	1.6	1.3
Change	0.7	0.1	0.0	-0.4	0.2	0.2
			Per cent of GDP			
Output gap, per cent of GVA						
CP17	-0.6	0.0	0.0	0.0	0.0	0.0
CP18	-0.2	0.4	0.8	0.5	0.3	0.0
Change	0.4	0.5	0.8	0.5	0.3	0.0
Budget balance						
CP17	-1.9	-0.9	-1.2	0.0	0.1	-0.1
CP18	1.0	-0.7	-0.7	-0.7	-0.6	0.0
Change	2.9	0.2	0.5	-0.7	-0.7	0.1
Public gross debt (EMU definition)						
CP17	37.0	36.3	35.8	33.9	34.1	33.9
CP18	36.4	35.6	34.8	34.2	36.2	39.5
Change	-0.6	-0.7	-1.0	0.3	2.1	5.6

Source: Statistics Denmark and own calculations.

Chapter 5

The Period Beyond 2025 and Long-Term Fiscal Sustainability

For the period after 2025, the projection is based on technical assumptions with a view to assess whether the economic policy can be maintained beyond the planning horizon (i.e. 2025) without leading to a persistent and unsustainable increase in the public debt-to-GDP ratio. In the current projection, the aim of structural balance is met in 2025 and the fiscal sustainability indicator is positive, given the assumptions regarding in particular the development of life expectancy and the adjustment of statutory pension age, with an estimated value of 1.2 per cent of GDP.

Although the fiscal sustainability indicator is positive, the projection entails a period from approx. 2030 to 2050 with excessive structural deficits in a scenario where economic policies are not adjusted. The worsening of public finances after 2025 reflects, inter alia, that relatively large generations retire and that generations, who retire in the period towards the middle of the century, can expect a longer average retirement period than both previous and later generations. This reflects a significant and rapid increase in life expectancy for the older population than assumed when the indexation mechanism was decided in the Welfare Agreement (2006).

The medium-term planning period extends to 2025 only. Thus, the technically projected budget deficits for the subsequent prolonged period do not represent planned policy; rather, it points to a need for adjusting either future expenditure or revenue developments relative to the current technical projection assumptions. Economic policy will be set in future medium-term plans with a view to meet such challenges within the framework of the Danish Budget Law and EU budget rules.

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 assumptions concerning demographic developments and the gradual depletion of the Danish oil and gas resources in the North Sea, *cf. box 5.1*. Furthermore, the gradual increase in the retirement age is taken into account in accordance with the life expectancy indexation rules given by the Welfare Agreement (2006) and the Retirement Reform Agreement (2011). In 2015, the Folketing confirmed the increase in the early-pensioner's and pensioners retirement age to 65 in 2027 and 68 in 2030 respectively, which is in accordance with the lifetime-indexation laid down in legislation.

Box 5.1

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, with the addition of agreed initiatives with a longer time horizon:

- 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. Public sector wages grow in line with private wages, and public net purchases of goods and services from the private sector make up a constant share of public consumption expenditures.

- Social benefits (income transfers) are assumed to rise in line with private sector wages so that replacement rates overall remain constant (e.g., in case of unemployment or retirement).

- 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 adopted reforms in particular in relation to retirement

- Gross public investment is projected in order to ensure that the growth in public capital stock (gross and efficiency corrected) equals 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.

- 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 *Security regarding property taxation* (May 2017).

- 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.

- A gradual improvement in energy efficiency is assumed for both consumption and production, which reflects ongoing improvements in energy efficiency and the energy agreement from 2012.

- A gradual normalization of interest rates is assumed. Thus the 10-year interest rate on government bonds is assumed to increase to 2.9 per cent in 2025 and further to 4.5 per cent in 2040 and remain unchanged thereafter.

Fiscal sustainability implies that the planned policies towards 2025 can be maintained in the long-term, given the technical projection assumptions, without implying a persistent and unsustainable increase in public debt as share of GDP. This applies at an unchanged tax burden and technical assumptions concerning public spending such that expenditures per person (at a given age) grow in line with wage developments.[1]

In the technical long-term projection, the structural deficits comply with the Budget Law towards 2030. For the subsequent period until 2050, given unchanged economic policy, the structural deficits are projected to exceed the Budget Law's limit at ½ per cent of GDP. This is the so-called hammock challenge, *cf. figure 5.1*. In forthcoming medium term plans extending beyond 2025, economic policy will be planned so that it continuously complies with the Budget Law.

Figure 5.1

Structural budget balance

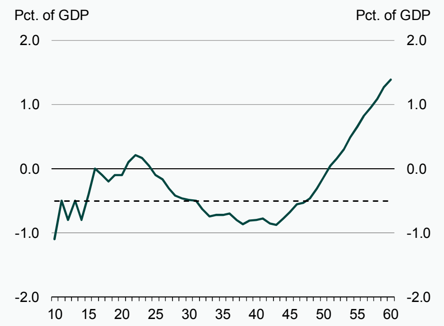
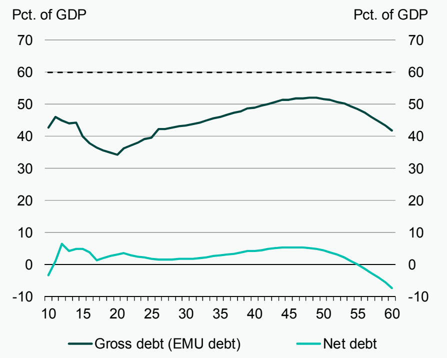


Figure 5.2

Public gross debt (EMU definition) and net debt



Source: Statistics Denmark and own calculations.

In addition to the fiscal sustainability requirement, the Budget Law limit for the annual structural budget deficit reflects the need to ensure ongoing credibility of fiscal policy. Fiscal credibility is underpinned by continued moderate public debt and compliance with EU's budgetary rules.

The projection that fiscal policy is sustainable in the long run given the described assumptions is an important but not necessarily sufficient condition for a credible fiscal policy. This is partly due to the fact that the uncertainty surrounding budget balance projections generally increase as the time horizon is extended. The projected improvement of the budget balance from the middle of the century is relying, in particular, on

[1] Public consumption is corrected for partial healthy ageing.

younger generations having a shorter retirement period than generations currently retiring.

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 is projected to stay below 10 per cent of GDP over the period. The increasing public gross debt is partly caused by 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 balance. Throughout the projection period a margin against the Stability and Growth Pact's public debt limit of 60 per cent of GDP is maintained.

The hammock challenge reflects a marked increase in life expectancy

The hammock challenge primarily reflects a decreasing share of the population in employment from 2025 towards 2040, *cf. figure 5.3*. The share of the population in employment has, inter alia, an impact on both the tax revenue raised and the public expenditure and transfers, among other to public retirement schemes.

The projected decline in the employment ratio is primarily due to two factors. First, the generations entering retirement between 2025 and 2040 are larger than the generations entering the labour market. Second, the generations entering retirement in the coming decades will have longer expected periods of retirement compared to both past and future generations, *cf. figure 5.4*.

Figure 5.3

Full-time employment as share of the total population

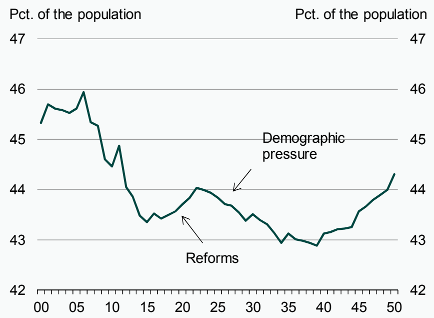
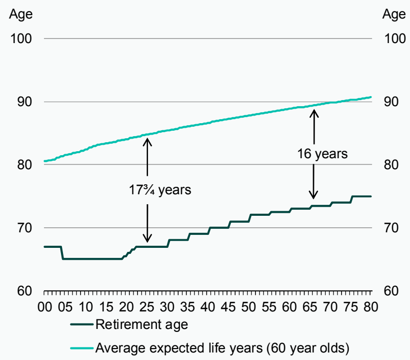


Figure 5.4

Development in expected average life time and retirement age



Source: Statistics Denmark and own calculations.

The difference in the expected number of years in retirement across generations reflects a higher increase in lifetime-expectancy than expected when the welfare agreement was made in 2006. Also, the indexation of the retirement age from 2030 is limited such that the retirement age can maximally be increased with one year every fifth year. The indexation of the retirement age is crucial for the long run restoration of the employment ratio and the following restoration the public finances.

The hammock challenge also reflects that revenue stemming from the North Sea activities is declining. The resources in the North Sea are expected to be exhausted around 2045. Conversely, over time the increasing tax revenue from pay-outs of retirement schemes improve the government balance.

5.2 Changes to the structural budget balance by 2025 and sustainability

The key medium-term objective for fiscal policy in the 2025-plan is at least structural budget balance in 2025 and fiscal sustainability.

In *Convergence Programme 2017*, which relied on the 2020-plan, the structural budget was estimated at -0.1 per cent of GDP in 2025 while the sustainability indicator (HBI) amounted to 0.9 per cent of GDP.

In *DK2025 – Growth and prosperity* (May 2017) the government set a target of structural balance by 2025. With implemented adjustments to economic policy, new information and adjustments to fiscal space the structural balance was estimated at 0.0 per cent of GDP by 2025 while HBI has increased to 1.1 per cent of GDP. The updated medium-term projection of August 2017 entailed a slight further improvement of HBI.

The objective of structural balance in 2025 is met in the updated CP18-projection and the sustainability indicator is estimated at 1.2 per cent of GDP, *cf. table 5.1*. Thus overall, only minor changes have occurred since the projection of August 2017.

Table 5.1

Changes to the structural public balance and fiscal sustainability indicator (HBI) from CP17 to CP18

	Structural balance 2025	HBI
Per cent of GDP		
Convergence Programme 2017	**-0.1**	**0.9**
Growth and Prosperity 2025	**0.0**	**1.1**
Updated 2025 projection (August 2017)	**0.0**	**1¼**
Updated business cycle component.	0.05	0.05
North Sea revenue (long-term level unchanged)	-0.15	0.0
Interest rate profile (long-term level unchanged))	0.1	0.0
Demographic costs (New information on age dependent costs)	0.0	-0.05
Other new information (net)	0.0	-0.05
Convergence Programme 2018	**0.0**	**1,2**

Note.: As a result of rounding the total can differ from the sum of individual components.
Source: *Convergence Programme 2017*, *Growth and Prosperity 2025, Updated 2025 Projection* (August 2017) and own calculations.

Furthermore, the structural balance in 2025 is affected by a number of other updates and assumptions:

- The updated convergence programme is based on the business cycle component of *Economic survey (December 2017),* adjusted by new employment and workforce statistics. Furthermore, data on workhours have been updated to the newest 2015 data. The structural employment has improved compared to the projection of August 2017; however average working hours have been adjusted downwards. The net effect on the public balance in 2025 is 0.05 per cent of GDP and the HBI is unaffected**,** *c.f. table 5.1.*

- The North Sea revenue is lowered by 0.15 per cent of GDP in 2025 compared to the August projection. This reflects an updated projection of oil prices reflecting the 2017 projection by the International Energy Agency as well as updated futures-prices. The HBI is largely unaffected by these updates.

- In recent years' Convergence Programs, it has been assumed that interest rates would gradually normalize, but until now, the actual adjustment of interest rates has been slower than expected. Against this background, the projection for Convergence Programme 2018 reflects a slower normalization of interest rates. Lower interest rates improve the public balance by 0.1 per cent of GDP by 2025 as interest payments on public debt has decreased and interest subsidies for household decline. The assumed interest rate level in the very long term has not been changed and is set, e.g. for 10-year government bonds, at 4.5 per cent.

- The calculation of the demographic cost pressure on public services has been updated; in particular an adjustment to the amount of nursing home residents has affected the result. This update does not impact the structural balance on a medium term basis but does however weaken the HBI slightly.

- The net impact of other new information is neutral for the structural balance and slightly weakens HBI. The impact on HBI reflects amongst other things that *the agreement on lower labour market income taxes and larger tax deduction for pension savings* from February 2018 is partially financed by a reduction of the planned increase in public investments towards 2025. The contribution to HBI from the gradual phasing-out of the lift of public investments after 2025 (apart from replacement investment to sustain a higher public capital-output ratio) is thus slightly reduced.

In addition to the standard HBI, an alternative version of the sustainability indicator is also calculated. The alternative HBI relies on so-called generation-neutral rules and principles after 2025 instead of enacted policy. Consequently, this indicator does not include any tightening measures after 2025 which in themselves lead to increasing net contributions to public finances from future generations, primarily through a shorter retirement period than for current generations of elderly.

The so-called generation-neutral HBI is estimated at 0.0 per cent of GDP, *cf. box 5.2*. In other words, the planned fiscal policy with structural balance in 2025 is sustainable, also when a number of enacted initiatives increasing the net contributions to public finances from future generations are not included.

Box 5.2

Complementary sustainability indicator based on generational neutrality

The principles of calculations which underlies the traditional sustainability indicator is used to evaluate whether existing fiscal policy is sustainable beyond the medium-term planning horizon when already enacted initiatives which extends further forward is taken into account. Hence, the sustainability indicator can be interpreted as measuring the solvency of the public finances in the long run when accounted for enacted policies and when public revenues and expenses elsewhere evolve according to the principles of calculations. However, the traditional indicator does not measure whether or not it is possible to ensure equal conditions across generations after the medium-term planning horizon – i.e. whether public finances are neutral with respect to generations.

Because of existing rules and the increase in life expectancy, generational differences in the number of years in retirement will occur. In addition, a number of initiatives affecting the generations differently are enacted. Because of the differences, an alternative indicator in which the forecast of the public revenues and expenses is based on neutral generational principles beyond the planning horizon is calculated. The alternative indicator differs from the traditional sustainability indicator in the following way:

- The age for old age pension and early retirement: In the alternative sustainability indicator the number of years in retirement is held constant at the end of the planning horizon equating the period in retirement for all future generations.
- Thresholds for green cheque, child benefit, housing benefits and deduction for interest expenses (the progression limit) are adjusted according to wages in the alternative sustainability indicator regardless of current policies.
- It is assumed that the revenue from property taxes makes up a constant share of GDP from 2025 and beyond, i.e. without loss of temporary reductions etc. in the alternative sustainability indicator.

Based on the neutral generational principles the sustainability indicator is approximately 0.0 per cent of GDP.

Table a

Traditional and alternative sustainability indicator (HBI)

	HBI
Traditional HBI, per cent of GDP	**1,2**
Constant pension period from 2025 and beyond	-0.8
Wage adjustment of child benefits and housing benefits	-0.2
Wage adjustment of green cheque and progression limit of the deduction for interest expenses	-0.1
Revenue from property taxes and constant share of GDP from	-0.1
Generational neutral HBI, per cent of BNP	**0.0**

Note: See the Ministry of Finance: Sustainability and generational neutrality (April 2017) for further details regarding method.

5.3 Sensitivity analysis for the budget balance and sustainability

The key targets of Danish fiscal policy are specified in terms of structural variables – in particular, the estimated structural budget balance and fiscal sustainability – which are robust with respect to cyclical fluctuations and short-run volatility in financial markets etc. Fiscal policy planning is based on these concepts with a view to ensure that economic policy is in accordance with medium- and long-term structural factors.

The projection in *Convergence Programme 2018* rests on a number of assumptions, including on the structural trajectory of the economy. The uncertainty surrounding longer-term projections is inherently higher the longer the projection period.

For example, there is a considerable uncertainty regarding the long-term trends in productivity, GDP, interest rates and life expectancy. However, public finances in Denmark are in general quite robust to different assumptions on those factors. As an example, productivity growth is crucial for long-run incomes and prosperity, but a positive change in productivity growth entails both larger tax revenue through higher wages in both the public and private sector as well as higher public income transfers through the automatic indexation mechanism in Denmark. Thus, overall, this results in an approximately parallel increase in public revenues and expenditures, resulting in only a minor change in the HBI, *cf. Convergence Programme 2010*.

Similarly, the indexation of retirement age thresholds implies that the retirement age is adjusted over time if life expectancy increases faster or slower than expected. Thus, the indexation has significantly increased the robustness of the public finances in the long-run, which also applies with regard to the long-run interest rate , *cf. Technical background report for the 2015-plan, 2007* (Teknisk Baggrundsrapport til 2015-planen).

The public finances are, however, quite sensitive to changes in the labour market partition rate and the average number of hours worked. An increasing employment rate, e.g., results in a strengthening of public finances while fewer working hours have the opposite impact. Other aspects can also have an impact. Increased private consumption will, e.g., increase public revenues from VAT and levies, while revenues from taxation of capital income are reduced if and when households reduce their savings.

Table *5.2* presents a number of sensitivity analyses of factors which could impact the structural public balance in 2025 as well as the long term sustainability of public finances (HBI).

Table 5.2

Sensitivity scenarios.

	Level (2025)	Change	Public balance, 2025	HBI (per cent of GDP)
Oil price	80 USD per barrel	± 7 dollars	± DKK 1½ bn.	0
Private propensity to consume	Approx. 100 per cent of disposable income	± 1 percentage - point in 2025	± DKK 1 bn.	-/+ 0.05
Employment	Approx. 3 million persons	± 15,000 persons	± DKK 6 bn.	± 0.25
Average workhours	1,460 hours per year	±7.3 timer (=±½ pct.)	± DKK 4 bn.	± 0.15

Note: In the positive employment scenario it is assumed that that the increase of 15,000 people comes from unemployment and an increase in the structural employment, both contributing 7,500 people. For the negative scenario the inverse is applied. Changes in the private propensity to consume have opposing effect on the structural budget balance in 2025 and the HBI. The effect on the public budget by 2025 is measured by the primary budget balance, that is, without the impact of interest.

Source: Own calculations.

- *Oil prices and North Sea revenues*. Public revenues from oil and gas extraction in the North Sea have been declining markedly since 2011. Revenues include hydrocarbon tax, corporation tax and revenue from state participation in oil and gas production. Revenues were 1½ per cent of GDP in 2011 and have declined to approx. ¼ per cent of GDP in 2018. The decline is mainly caused by a fall in the oil price, from approx. 120 USD per barrel to 65 dollars per barrel by December 2017. In the Convergence Programme it is assumed that the oil price will reach 80 USD per barrel by 2025, based on the projection by the International Energy Agency as well as market expectations based on futures prices. Under these assumptions the government revenues are 0.2 per cent of GDP by 2025 or almost DKK 5 bn. (2018-level). Government revenues will increase if the actual oil price turns out higher than the projected oil price and vice versa, but the sensitivity has been declining as the level of production of oil and gas has declined. To illustrate the sensitivity; a fall of 7 USD per barrel in 2025 would result in a DKK 1½ bn. (2018-level) decline in revenues. [2] The long-run sustainability is not affected by changes in the oil price, due to the assumption that the oil and gas resources will be depleted over the next two to three decades.

[2] The change in in the oil price of 7 US dollars per barrel corresponds to the difference between the projected oil price in Convergence Programme and the Sustainable Development scenario made by IEA in 2025 where the countries are assumed to limit CO_2 emissions such that global warming is limited to 2 degrees above the preindustrial level in accordance with the Paris agreement.

- *Private consumption.* Denmark has entered an economic upturn with increasing consumption and investment as well as rising employment and falling unemployment. It is assumed that the propensity to consume will increase from 93 per cent of disposable income in 2017 to approximately 100 percent by 2025 (excluding pension savings). However, this 2025 level is still relatively low compared to previous economic upturns. A further increase in this ratio by 1 percentage point by 2025 will strengthen the public balance by DKK 1 bn. (2018-level), primarily through higher revenues from VAT and levies. In the long run this will turn to a weakening of the public finances since higher consumption leads to higher household debt. This will reduce the revenue from taxation on capital income (e.g. increased interest rate deduction for households), estimated to weaken financial sustainability by 0.05 per cent of GDP.

- *Structural employment.* From 2017 to 2025 the structural employment is projected to increase by 127.000 persons. The projection is partly based on implemented reforms, but other factors can also affect the structural employment, e.g. changes in the labour market participation rate for young people (relative to education) or improved integration among immigrants. It is estimated that if the structural employment increases by 15.000 people by 2025, equivalent to ½ per cent of the labour force, this will strengthen the public budget balance in 2025 by approx. DKK 6 bn. and vice versa.[3] This reflects higher revenues as well as lower expenses to transfer payments. The fiscal sustainability will in this case be improved by ¼ per cent of GDP. Thus, the employment rate has a large impact on public finances.

- *The average number of working hours* is expected to increase slightly by 3 hours from 2017 to 2025 to 1,460 hours per year by 2025. The increase primarily reflects an increase in the number of hours worked by people at the age of 65 to 66, many of whom are currently employed with a relatively low number of workhours while receiving public pension. Most people within these age cohorts are expected to be in ordinary employment by 2025 when retirement age is 67 years. Otherwise, the projections assume a constant amount of workhours for different individuals in each age group, which has some inherent uncertainty. The assumption of a roughly unchanged number of hours worked should be viewed in the light of a historic declining trend in the average number of hours worked, which in part may be a consequence of increasing income levels causing an increase in the demand for leisure, as well as the fact nowadays that typically both adults within a family participate in the labour market. It is estimated that a reduction of the average number of workhours by ½ per cent in 2025

[3] The depicted change in structural employment is not representative with regard to the degree of foreign employment because the primary impact on the public finances sustainability stems from the share of the population in employment rather than the level of employment.

(7½ hours per year) would result in a weakening of the public balance by approx. DKK 4 bn. and a reduction in the fiscal sustainability indicator of around 0.15 per cent of GDP. Thus, it is an important prerequisite for the projection that the average number of hours worked does not decline relative to assumptions, as this would substantially affect the public budget balance and fiscal sustainability.

Chapter 6

Public Finances and 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.

6.1 Institutional framework

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.

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 – the 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 the annual structural deficits does not exceed ½ per cent of GDP, and that gradual progress is made towards the aim of a structural budget deficit of 0.1 per cent of GDP in 2020, and the target of, at least, structural balance in 2025, further explained in the government's medium-term plan (Growth and prosperity 2025). 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, which is 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 underpin that public expenditure evolves in compliance 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 proceeds 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). Furthermore, a political agreement concerning a new model for property taxes has been reached in spring 2017 (May 2017). In addition to this, 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 within all four years, *cf. table 6.1*.

Based on the regional accounts for 2017, the sub-ceilings for both health expenses and regional development were complied with. Likewise, municipal accounts show that the municipal expenditure ceiling was complied with over the period of 2014-2016. Due to postponements in publishing accounting data for the municipalities in 2017, following are not reported.

Table 6.1

Expenditures and expenditure ceilings, 2014-2017 – ceilings stated in brackets

DKK bn. (current prices)	2014	2015	2016	2017
Central government sub-ceiling for operating expenditure	178.8 (185.3)	179.3 (188.4)	176.0 (181.5)	178.8 (185.5)
Central government sub-ceiling for income transfers	247.8 (252.3)	250.9 (257.7)	253.1 (257.7)	256.5 (262.5)
Municipal expenditure ceiling	227.8 (230.2)	231.5 (233.2)	234.5 (237.5)	-
Regional sub-ceiling for health expenses	102.3 (102.6)	104.6 (104.7)	107.4 (107.7)	109.5 (109.8)
Regional sub-ceiling for development	2.9 (2.9)	3.0 (3.0)	3.0 (3.0)	3.0 (3.0)

Note: Government accounts (2014-2017), regional accounts (2014-2017) and municipal accounts (2014-2016).

Annex tables according to the EU's "Code of Conduct"

Table 1a

Macroeconomic prospects

	2017	2017	2018	2019	2020	2021	2025
	Bn. DKK	**Rate of change, per cent**					
Real GDP	1,998.3[1)]	2.2	1.9	1.7	1.6	1.6	1.3
Nominal GDP	2,145.1	3.8	3.7	3.6	3.2	3.4	3.0
Components of real GDP							
Private consumption	925.4	1.5	2.3	2.4	2.2	2.2	2.7
Government consumption	518.1	1.2	0.7	0.3	0.5	0.5	0.5
Gross fixed capital formation	409.9	3.7	4.1	4.8	3.7	4.1	1.6
Changes in inventories[2)]		0.1	0.0	0.0	-0.1	-0.1	0.0
Export of goods and services	1,142.0	4.4	2.8	2.6	3.2	3.2	2.6
Import of goods and services	1,010.4	4.1	3.7	4.0	4.0	4.3	3.6
Contributions to real GDP growth		**Percentage points**					
Final domestic demand		1.8	2.1	2.2	2.0	2.1	1.8
Changes in inventories[2)]		0.1	0.0	0.0	-0.1	-0.1	0.0
External balance of goods and services		0.4	-0.2	-0.5	-0.2	-0.4	-0.5

1) Based on chained 2010-prices. Growth rates are also based on chained indices.
2) Contribution of change in stock to GDP growth.
Source: Statistics Denmark and own calculations.

Table 1b

Price developments

	2017	2017	2018	2019	2020	2021	2025
	Level	Rate of change, per cent					
GDP-deflator	107.3	1.6	1.8	1.8	1.6	1.8	1.7
Private consumption deflator	108.8	1.3	1.5	1.7	1.4	1.7	1.8
Consumer price index	108.7	1.1	1.5	1.7	1.5	1.8	1.9
HICP	107.5	1.0	1.4	1.6	1.2	1.6	1.7
Net price index	108.7	1.3	1.6	1.7	1.8	1.8	1.8
Public consumption deflator	103.4	0.9	2.2	2.1	2.4	2.5	2.4
Investment deflator	106.7	-0.0	1.4	1.3	2.1	2.0	1.7
Export price deflator	103.7	2.5	1.9	2.1	1.7	1.5	1.5
Import price deflator	102.2	1.4	1.8	1.8	2.2	1.8	1.9

Note: For all price indices 2010=100.
Source: Statistics Denmark and own calculations.

Table 1c

Labour market developments

	2017	2017	2018	2019	2020	2021	2025
	Mia. kr.	Rate of change, per cent					
Employment, 1,000 persons	2,920.9	1.6	1.1	0.8	0.7	0.4	0.2
Employment, hours worked (mill. hours)	4,113.2	1.2	1.1	0.8	0.7	0.6	0.2
		Per cent					
Unemployment rate, harmonized EU-definition[1)]		5.9	5.6	5.4	5.4	5.4	5.3
		Rate of change, per cent					
Labour productivity. persons (1,000 DKK)[2)]	684.1	0.6	0.7	0.9	1.0	1.1	1.1
Labour productivity, hours worked (DKK)[3)]	485.8	1.0	0.8	0.9	1.0	1.0	1.1
Compensation of employees (DKK bn.)[4)]	1,116.4	3.2	3.8	3.5	3.5	3.8	3.1
Compensation per employee[5)]	421.4	1.3	2.7	2.7	-	-	-

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). The structural gross unemployment is nearly 4 per cent in 2017 based on the national unemployment definition.
2) Calculated as real GDP per person employed, where GDP is based on chained 2005-prices.
3) Calculated as real GDP per hour worked, where GDP is based on chained 2005-prices.
4) Based on current price, i.e. growth rates are in nominal terms.
5) Calculated as compensation per employed wage earner.
Source: Statistics Denmark and own calculations.

Table 1d

Sectoral balances

	2017	2018	2019	2020	2021	2025
			Per cent of GDP			
Net lending/borrowing vis-à-vis the rest of the world	7.8	7.9	7.4	5.1	5.1	4.5
Of which:						
- Balance of goods and services	7.1	6.7	6.3	5.8	5.1	2.4
- Balance of primary incomes and transfers	0.9	1.1	1.1	-0.7	0.0	2.2
- Capital account	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Net lending of the private sector	6.8	8.6	8.1	5.7	5.7	4.5
Net lending of general government	1.0	-0.7	-0.7	-0.7	-0.6	-0.0
Statistical discrepancy	0.0	0.0	0.0	0.0	0.0	0.0

Source: Statistics Denmark and own calculations

Table 2a

General government budgetary prospects (EDP-basis)

	2017	2017	2018	2019	2020	2021	2025
	Bn. DKK	Per cent of GDP					
Net lending (EDO B.9) by sub-sector							
General government (EDP-form)	21.5	1.0	-0.7	-0.7	-0.7	-0.6	0.0
Central government	21.2	1.0	-0.7	-0.7	-0.7	-0.6	0.0
Local government	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Social security funds	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
General government (S13)							
Total revenue	1,114.0	51.9	49.8	49.3	48.8	48.6	49.8
Total expenditure	1,092.5	50.9	50.6	50.0	49.5	49.2	49.8
Net lending	21.5	1.0	-0.7	-0.7	-0.7	-0.6	0.0
Interest expenditures	22.9	1.1	1.0	0.9	0.9	1.0	1.2
Primary balance[1)]	44.4	2.1	0.2	0.2	0.2	0.4	1.2
One-off effects[2)]	23.9	1.1	-0.9	-1.1	-0.9	-0.9	0.0
Selected components of revenue							
Total taxes[3)]	994.8	46.4	44.7	44.2	43.8	43.5	44.4
Taxes on production and imports	344.6	16.1	16.1	16.0	15.9	15.7	15.9
Current taxes on income and wealth etc.	644.9	30.1	28.4	28.0	27.7	27.6	28.3
Capital taxes	4.4	0.2	0.2	0.2	0.2	0.2	0.2
Social contributions[4)]	1.1	0.0	0.1	0.0	0.0	0.0	0.0
Property income[5)]	22.0	1.0	0.8	0.8	0.8	0.8	1.0
Other (residual)[6)]	97.2	4.5	4.3	4.2	4.3	4.4	4.4
Total revenue	1,114.0	51.9	49.8	49.3	48.8	48.6	49.8
p.m.: Tax burden[7)]	998.0	46.5	44.9	44.4	43.9	43.6	44.6

Table 2a (continued)

General government budgetary prospects (EDP-basis)

	2017	2017	2018	2019	2020	2021	2025
	Bn. DKK	Per cent of GDP					
Selected components of expenditure							
Compensation of employees and intermediate consumption	522.8	24.4	24.2	23.9	23.8	23.7	23.4
- Compensation of employees	332.4	15.5	15.2	15.1	15.0	14.9	14.7
- Intermediate consumption	190.4	8.9	9.0	8.9	8.8	8.8	8.7
Total social transfers	384.1	17.9	17.6	17.3	17.2	17.0	17.1
- Social transfers in kind[6)]	30.7	1.4	1.4	1.4	1.4	1.4	1.4
- Other than in kind	353.4	16.5	16.2	15.9	15.7	15.6	15.7
Interest expenditures	22.9	1.1	1.0	0.9	0.9	1.0	1.2
Subsidies	39.1	1.8	1.7	1.6	1.6	1.5	1.3
Gross fixed capital formation	70.7	3.3	3.2	3.2	3.2	3.3	3.3
Capital transfers	5.7	0.3	0.6	0.6	0.2	0.2	0.4
Other (residual)[6)]	65.0	3.0	3.0	3.2	3.3	3.1	3.7
Total expenditure	1,092.5	50.9	50.6	50.0	49.5	49.2	49.8
p.m.: Public consumption	535.9	25.0	24.8	24.5	24.5	24.4	24.2

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

	2017	2017	2018	2019	2020	2021	2025
	Bn. DKK	Per cent of GDP					
Total revenue at unchanged policies	1,114.0	51.9	50.2	49.8	49.7	49.5	50.7
Total expenditure at unchanged policies	1,092.5	50.9	50.9	50.7	50.7	50.7	51.5

Source: Statistics Denmark and own calculations.

Table 2c

Amounts to be excluded from the expenditure benchmark

	2017	2017	2018	2019	2020	2021	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	18.2	0.8	0.8	0.8	0.7	0.7	0.7
Effect of discretionary revenue measures	-3.1	-0.1	-0.4	-0.1	-0.3	-0.1	0.0
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	2016	2021
		Percent of GDP	
General public service	1	6.8	-
Defence	2	1.1	-
Public order and safety	3	1.0	-
Economic affairs	4	3.3	-
Environmental protection	5	0.4	-
Housing and community amenities	6	0.3	-
Health	7	8.6	-
Recreation. culture and religion	8	1.8	-
Education	9	6.9	-
Social protection	10	23.4	-
Total expenditures[1)]	TE	53.6	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. 2016 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

	2017	2018	2019	2020	2021	2025
			Percent of GDP			
Gross debt	36.4	35.6	34.8	34.2	36.2	39.5
Change in gross debt ratio[1)]	-1.5	-0.8	-0.8	-0.6	2.0	0.3
Change in gross debt[2)]	-0.1	0.5	0.5	0.4	3.1	1.4
Contributions to change in gross debt						
Primary balance[3)]	2.1	0.2	0.2	0.2	0.4	1.2
Interest expenditure[4)]	1.1	1.0	0.9	0.9	1.0	1.2
Stock-flow adjustment[5)]	-3.2	-0.8	-0.6	-0.7	1.8	-1.0
p.m. implicit interest rate on debt[6)]	2.9	2.8	2.6	2.7	3.0	3.1
Other relevant variables						
Central government account in	134.7	99.0	82.5	82.5	82.5	82.5
Danmarks Nationalbank	1.3	2.0	2.6	3.2	3.7	1.8
Public net debt[7)]	1.3	2.0	2.6	3.2	3.7	1.8

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

	2017	2018	2019	2020	2021	2025
			Per cent			
Real GDP growth	2.2	1.9	1.7	1.6	1.6	1.3
			Per cent of GDP			
Net lending of general government	1.0	-0.7	-0.7	-0.7	-0.6	0.0
Interest expenditure[1)]	1.1	1.0	0.9	0.9	1.0	1.2
One-off effects[2)]	1.1	-0.9	-1.1	-0.9	-0.9	0.0
- Of which revenue	0.9	0.6	0.5	0.2	0.0	0.0
- Of which expenditure	0.2	-1.5	-1.6	-1.1	-0.9	0.0
			Percent			
Potential GDP growth[3)]	1.5	1.4	1.8	1.9	1.8	1.4
			Percentage points			
Of which, contribution from:						
- Labour	0.5	0.4	0.4	0.5	0.4	0.1
- Capital	0.4	0.4	0.5	0.7	0.8	0.7
- Total factor productivity	0.6	0.5	0.6	0.7	0.7	0.5
			Per cent of GDP			
Output gap	-0.2	0.4	0.8	0.5	0.3	0.0
Cyclical component[4)]	-0.1	0.3	0.5	0.3	0.2	0.0
Structural budget balance[5)]	-0.1	-0.2	-0.1	-0.1	0.1	0.0
Primary structural budget balance[5)]	0.3	0.1	0.1	0.1	0.3	0.3

1) As defined in table 2.
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.
3) Including a contribution from indirect taxes (in real terms).
4) The calculation of the cyclical component is based on the output and employment gap.
5) 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

	2017	2018	2019	2020	2021	2025
	Rate of change, per cent					
Real GDP growth						
- Previous update	1.5	1.7	1.7	2.0	1.4	1.2
- Current update	2.2	1.9	1.7	1.6	1.6	1.3
- Difference	0.7	0.1	0.0	-0.4	0.2	0.2
	Per cent of GDP					
Output gap (per cent of GVA)						
- Previous update	-0.6	0.0	0.0	0.0	0.0	0.0
- Current update	-0.2	0.4	0.8	0.5	0.3	0.0
- Difference	0.4	0.5	0.8	0.5	0.3	0.0
Actual budget balance						
- Previous update	-1.9	-0.9	-1.2	0.0	0.1	-0.1
- Current update	1.0	-0.7	-0.7	-0.7	-0.6	0.0
- Difference	2.9	0.2	0.5	-0.7	-0.7	0.1
Gross debt level						
- Previous update	37.0	36.3	35.8	33.9	34.1	33.9
- Current update	36.4	35.6	34.8	34.2	36.2	39.5
- Difference	-0.6	-0.7	-1.0	0.3	2.1	5.6

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**	**49.5**	**50.8**	**52.0**	**51.1**	**49.0**
Of which:							
Age-related expenditure	26.5	30.0	27.7	28.0	28.2	27.2	25.9
Social security pension	9.1	10.0	9.4	9.2	8.8	7.9	7.1
- Old-age and early pensions	7.1	7.8	7.6	7.4	6.9	5.9	4.9
- Other pensions	2.0	2.2	1.8	1.8	1.9	2.0	2.1
Occupational pensions	-	-	-	-	-	-	-
Health care[1)]	5.6	6.1	6.3	6.8	7.0	6.9	6.7
Long-term care[1)]	2.0	2.2	2.3	3.0	3.6	3.9	4.1
Education expenditure	4.8	5.2	5.1	5.1	5.3	5.2	4.9
Other age-related expenditures	17.5	20.0	18.4	18.7	19.4	19.3	18.9
Interest expenditure	1.6	1.9	0.9	1.6	2.4	2.5	2.0
Total revenue	**53.9**	**52.8**	**48.8**	**50.4**	**51.4**	**51.0**	**50.5**
Of which:							
- Property income[2)]	2.4	2.4	0.8	1.4	1.9	1.9	1.9
- Revenue from pension payouts net	-1.3	-0.9	-0.1	0.0	0.3	0.4	0.3
Pension reserve fund assets	124.2	139.3	175.8	190.7	205.9	211.4	215.3
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	1.3	1.1	0.8	1.0	1.0
Real GDP growth[3)]	0.9	1.9	1.6	1.5	1.5	1.7	1.4
Participation rate males (aged 20-64)	84.0	81.0	82.1	82.6	83.0	82.9	83.1
Participation rate females (aged 20-64)	75.1	73.3	75.4	75.6	76.0	76.0	76.0
Total participation rate (aged 20-64)	79.6	77.2	78.8	79.1	79.5	79.5	79.6
Unemployment rate[4)] (national definition)	3.8	6.2	3.8	3.7	3.7	3.7	3.7
Structural unemployment[4)] (national definition)	3.6	3.2	3.8	3.7	3.7	3.7	3.7
Population aged 65+, 1,000 persons	843.2	917.4	1,169.4	1,385.1	1,545.5	1,549.5	1,601.0

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

	2017	2018
	Per cent of GDP	
Public guarantees	14.9	-
- of which: linked to the financial sector	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 2017.

Table 8

Basic assumptions

	2017	2018	2019	2020	2021	2025
Short term interest rate (annual average)	-0.3	-0.3	0.0	-0.1	0.5	1.8
Long term interest rate (annual average)	0.5	0.8	1.3	1.6	2.0	2.9
Exchange rate EUR/USD (annual average)	112.7	123.3	123.4	122.7	122.0	119.2
Nominal effective exchange rate (1980=100)	102.1	104.0	104.1	104.1	104.1	104.1
World excluding EU, GDP growth1)	4.0	4.2	4.3	4.2	4.2	-
EU, GDP growth	2.7	2.5	2.1	1.8	1.7	-
Growth of relevant foreign markets2)	4.8	4.0	4.0	3.9	3.5	-
World import volumes, excluding EU1)	5.1	5.5	5.1	4.5	3.9	-
Oil price (Brent, USD/barrel)	54.3	65.6	65.7	67.2	69.3	80.6

1) Based on IMF's Economic Outlook, April 2018. The calculation of GDP growth for the world excluding EU is adjusted for the contribution to growth from EU (PPP, 2016 weights).
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, *Economic Survey,* december 2017, IMF's World Economic Outlook, April 2018, Bloomberg, Thomson Reuters Eikon and own calculations.

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