Chapter 1
Summary

1.1 The current economic outlook

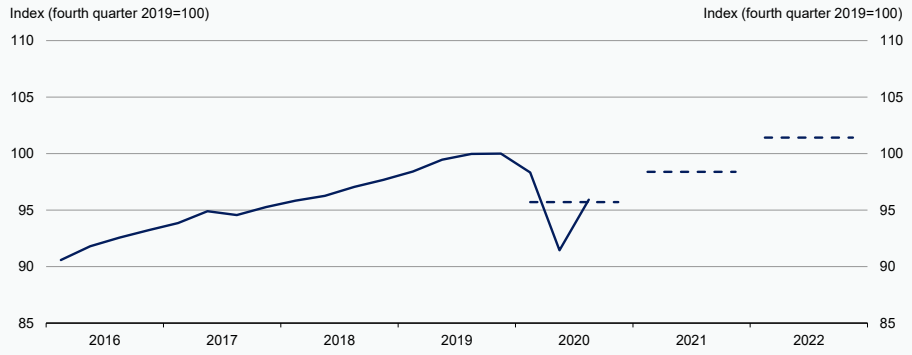
Following a significant economic recovery over the summer, obstacles to economic growth have re-emerged. The second wave of the corona pandemic has led to renewed uncertainty and necessitated new measures to control the spread of the virus both at home and abroad. This has a significant impact on the economic outlook.

Economic activity had quickly returned in many countries. A substantial part of the economic loss from the first half of the year was recovered in the third quarter, when infection levels were low. At the same time the labour market made a strong comeback in most countries. This also applies in Denmark, where almost two thirds of the job losses from the spring were recovered in the third quarter. With the latest developments, the recovery is expected to temporarily lose momentum. However, it is expected that the recovery will gradually proceed more unhindered, and in 2022 GDP is expected to exceed pre-crisis levels, *cf. figure 1.1.*

The economic projections imply real GDP growth of 2.8 per cent and 3.1 per cent in 2021 and 2022, respectively, following a 3.8 per cent drop in 2020. The economy is supported by a number of political measures such as compensation schemes and the possibility to receive frozen holiday pay.

Figure 1.1

In 2022 GDP is expected to the surpass pre-crisis level



Note: Dashed lines depict the projected annual averages.
Source: Statistics Denmark and own calculations.

However, the outlook presented in this survey was finalised before the second wave of the pandemic entered into the latest, very serious stage. Therefore, the projections do not reflect the impact of the most recent developments, and considerable uncertainty regarding the expected recovery continues, which will depend on the path of the pandemic, including how quickly a vaccine can be deployed.

Infection leaves an impact on the economy

After a quiet period with relatively low infection rates over the summer, another wave of coronavirus infections has announced its arrival. The worsening development of infection applies in particular to a number of European countries, including Denmark, but increasingly also to the United States.

There has been an increasing trend in COVID-19 cases in many countries since late summer, but the number of daily cases of infection escalated in October. With a delay, this is reflected in an increase in coronavirus-related deaths, including in countries such as France and Italy, c*f. figure 1.2*.

Figure 1.1

Increase in the number of deaths with COVID-19

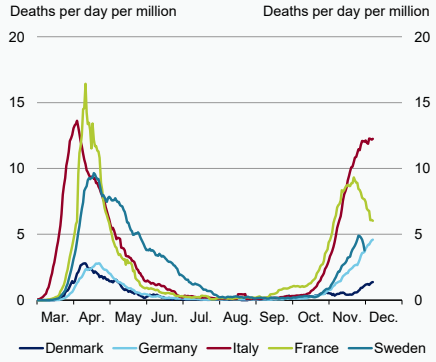
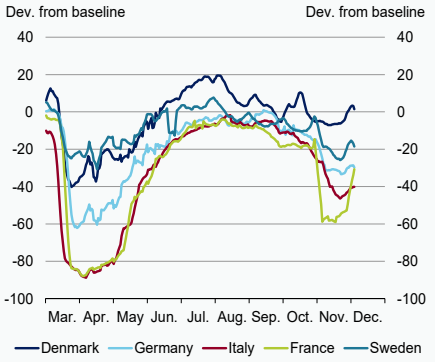


Figure 1.2

Signs of lower mobility



Note: In the figures a seven-day moving average is depicted. Due to a significant number of delayed registrations the number for Sweden in figure 1.2 is only shown until November 30. Mobility is measured using the Google Mobility Index for the length of stay in retail and recreation.
Source: European Centre for Disease Prevention and Control and Macrobond.

The level of infection leads, in itself, to behavioral changes as a result of increased caution in relation to exposing oneself or others to infection. At the same time, countries have generally responded by tightening restrictions and guidelines to curb the development of infection.

Therefore, there would have been an effect on economic developments, even in the absence of measures. The second wave of infection is clearly seen, among other things, in the fact that consumers in many countries are once again staying away from areas with

retail stops and recreation, i.e. they reduce their reduce their mobility. In particular, those countries that have seen a sharp increase in the number of deaths have also experienced large declines in mobility. In this context, Denmark stands out in an international comparison with fewer deaths and a smaller drop in activity measured by mobility, *cf. figure 1.3.*

The measures and changed behaviour to avoid infection generally work by limiting physical personal contact. The renewed infection has consequences for economic activity, including in some cases through direct shutdowns of certain activities, for example in the recreation industry. In addition, there are secondary economic consequences for other parts of the economy. This can happen, for example, through a fall in incomes that have a broader effect on demand, or through consequences for industries in the supply chain.

Measures that slow down the spread of infection will typically have an immediate negative impact on the economy. But they must be seen in the light of the fact that an uncontrolled course of the pandemic would have very large negative consequences. Targeted and early suppression of the infection can help to avoid far worse consequences at a later stage.

Experience from the spring shows that the countries, which were hardest hit by the outbreak, also experienced the largest economic downturn in general. Thus, there has been a link between health and the economy, and as long as the virus poses a health risk, economic activity will be affected.[1] Countries that quickly succeed in limiting infection this time must therefore also be expected to experience the least slowdown in activity in the near future.

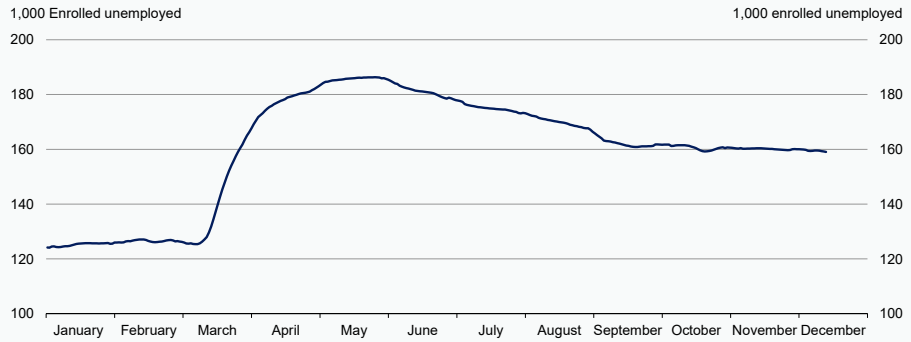
Although it seems at present that Denmark may come through the second wave of infections better than a number of other countries, the prospect of a more subdued economic outlook also applies here. On the one hand, the Danish economy will be affected by a weaker development abroad, and on the other hand, infection levels have also been increasing in Denmark, which has implications for the economy.

Signs of slowdown have already appeared on the labour market, where the number of registered unemployed has been at an approximately unchanged level since the end of September, *cf. figure 1.4.* This indicates that improvement in employment and activity has been more limited recently.

[1] Cf. Danish Ministry of Finance: Status for dansk og international økonomi under coronakrisen, Økonomisk analyse, november 2020 (Only available in Danish).

Figure 1.4

The labour market has stalled



Note: The figure depicts persons that were registered as unemployed at Jobnet. Own seasonal correction.
Source: Danish Agency for Labour Market and Recruitment.

At the same time, there are signs that Danish households and companies have become more hesitant. Consumer confidence and business confidence increased significantly in the summer months after a dip in the spring, but have remained on a relatively unchanged and still low level in recent months.

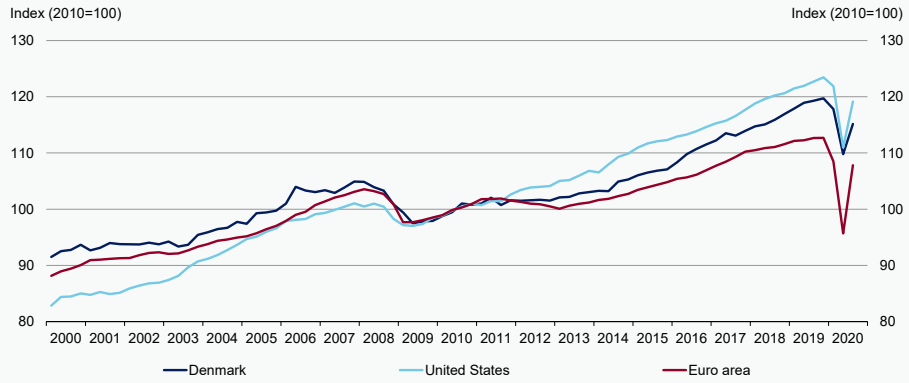
Against this background, it is expected that the economy has slowed down and that increased infection and new measures to contain the infection will keep activity down over the winter. Only then will the recovery regain momentum.

The recovery was well under way

The new wave of infections comes after a period over the summer with significant economic improvement. Until September, the recovery was well under way in most countries with very high growth in the third quarter. Growth was particularly high in countries that had experienced a sharp decline in the first half of the year, including in several euro area countries. Part of the loss from the first half of the year was thus recovered, but in most countries GDP is still somewhat below pre-crisis levels, *cf. figure 1.5*.

Figure 1.3

GDP loss was partially recovery during the third quarter



Source: Statistics Denmark, OECD and own calculations.

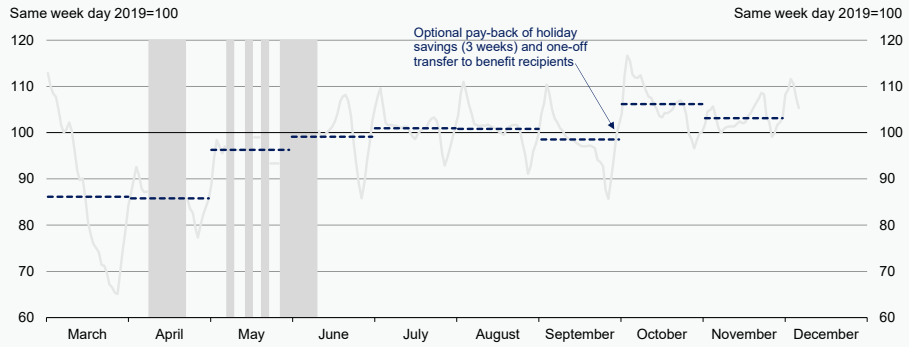
The improvement reflects that economic activity across countries increased rapidly with declining infection.

In Denmark, for example, a relatively rapid normalization of consumption was seen, as purchases with payment cards have been on the same level as last year since summer, *cf. figure 1.6*. The development in consumption has been supported by the wage compensation scheme and other schemes that have contributed to maintaining purchasing power.

Preliminary figures show that households have converted at least part of the disbursed holiday funds as well as the tax-free one-off subsidy of DKK 1,000 to all benefit recipients into consumption. The one-off payment to benefit recipients amounted to a total of just over DKK 2 bn., and holiday funds for just over DKK 31 bn. after tax had been disbursed at the beginning of December.

Figure 1.4

Payment card transactions show a rapid normalisation of consumption



Note: The figure shows a seven-day moving average of actual transactions made with payment cards and MobilePay for around 1 million Danish customers in Danske Bank with active accounts (at home and abroad). The dotted lines indicate monthly averages of actual transactions. Excl. cash as well as account-to-account transfers and not adjusted for price developments. Holidays are not shown. Observations around the turn of the month must be interpreted with extra caution due to differences in pay days etc. in 2019 and 2020.
Source: Danske Bank Spending Monitor.

What will drive the recovery?

The forecast assumes that the recovery will pick up speed again during 2021, although the pandemic may continue to adversely affect economic progress at times.

Private consumption is expected to be an important driver of growth. In the upswing prior to the corona crisis, consumption growth was fairly stable, with no signs of being debt-driven, as was the case prior to the financial crisis. Therefore, households today have a relatively low consumption ratio which implies potential for increased consumption. At the same time, developments through 2020 have shown that households have maintained their desire to spend, even though consumer confidence is lower than before the crisis. On the one hand, households have shifted consumption to online purchases etc., and on the other hand, many took advantage of the opportunity to have three weeks frozen holiday pay refunded.

Consumption growth is supported by improvements in the labour market. Two thirds of the employment losses in the spring have already been recovered, and unemployment has fallen to 4.6 per cent of the workforce from a peak of 5.6 per cent in May. This should be seen in connection with a low unemployment rate of 3.7 per cent of the workforce in February and record high employment, just before the pandemic, *cf. figure 1.7 and 1.8*.

The labour market also appeared relatively balanced before the corona crisis. It is currently expected that a renewed recovery of the economy will also have an impact on the labour market, so that the remaining job losses will be recovered in 2022. In comparison

with the financial crisis, the downturn in the labour market has been more limited, and the labour market quickly returned to a positive trend following the initial losses. Thus, the expected decline in employment of 23,000 persons this year should be seen in relation to a decline in 93,000 and 66,000 jobs, respectively, in 2009 and 2010.

Figure 1.5

Unemployment has receded again

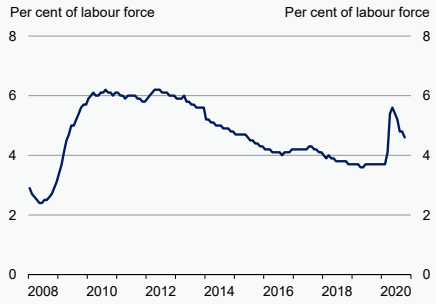
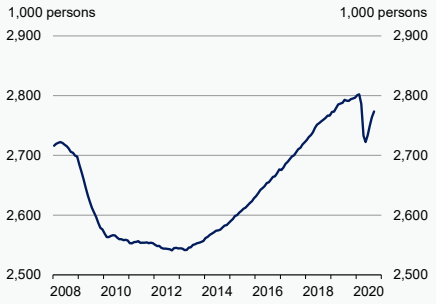


Figure 1.6

Two-thirds of employment losses have been recovered



Note: Figure 1.7 depicts gross unemployment, while figure 1.8 shows the number of wage earners.
Source: Statistics Denmark and own calculations.

The consequences to the labour market of the corona crisis have been greatly reduced as a result of the various support packages and measures that support employment. This applies in particular to the wage compensation scheme, which was used by more than 30,000 companies in the period from March to September and covered more than a quarter of a million wage earners. The vast majority of the persons who have been covered by wage compensation have remained in employment.

Due to recent measure to control the spread of the coronavirus, the general wage compensation scheme has been reintroduced throughout the country from December 9. Furthermore, the general support packages, including compensation for fixed costs, have been opened up for the entire Danish business and cultural sector.

The fact that households have maintained a positive view of the future prospects can also be seen in the housing market, where turnover has been surprisingly high and prices have risen. The positive development is also reflected in relatively large housing investments.

In 2021, private consumption will be supported by the possibility of receiving the last two weeks of frozen holiday pay, in addition to which there will be increased deduction options in the Housing Job scheme. At the same time, housing investment is supported by the Green Housing Agreement from May.

Exports, on the other hand, had a difficult time and fell considerably in 2020 – also more than in 2009 during the financial crisis, despite the fact that exports of pharmaceuticals helped to limit the decline. The large decline should be seen in connection with the fact that many other countries have been hit relatively harder than the Danish economy, which affects both Danish export opportunities through lower demand as well as through less activity in tourism and sea freight.

Based on forecasts from international organizations, it is assumed that the recovery in the global economy will be resumed in 2021 and 2022, after a temporary setback over the winter as a result of the latest increase in infections. It is also assumed that the EU and the United Kingdom will not reach an agreement on future economic relations before the turn of the year. In isolation, this will reduce export growth next year.

Historically, business investments largely follow developments in demand on Danish export markets. The continued subdued development abroad in 2021 is therefore assumed to also make Danish companies more hesitant in relation to investment decisions. However, a new investment window that gives companies increased depreciation on green investments will help investments on their way. Overall, it is expected that business investment will increasingly pick up pace in 2022.

After the financial crisis, exports were to a large extent crucial for renewed growth in the Danish economy, while private consumption remained subdued for several years. The corona pandemic has caused a very unusual downturn in the economy, and the recovery will also proceed in a different way, as private consumption is expected to drive economic progress to a greater extent, *cf. figure 1.9*. On the other hand, exports are expected to develop more in line with the recovery from the financial crisis, *cf. figure 1.10*.

With renewed economic progress, an improvement in the labour market is also expected. Employment is estimated to increase by 15,000 persons in 2021 and a further 26,000 persons in 2022 after a fall of 23,000 persons in 2020. Thus, employment in 2022 will exceed its previous record level in 2019, while unemployment is also expected to have decreased to almost 120,000 persons. Unemployment will thus be close to the level that can be expected in a normal business cycle stance. Among other things, it is the series of new expansionary initiatives in economic policy and the prospect of corona vaccines that contribute to the expectation of a return to an almost normal economic situation in 2022.

Figure 1.7

Quick recovery of private consumption

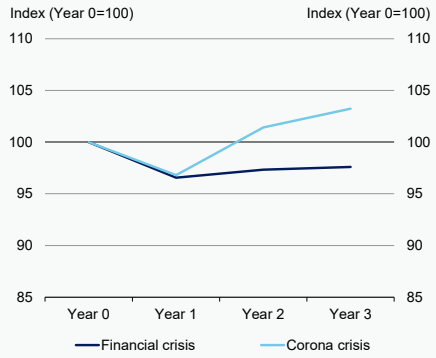
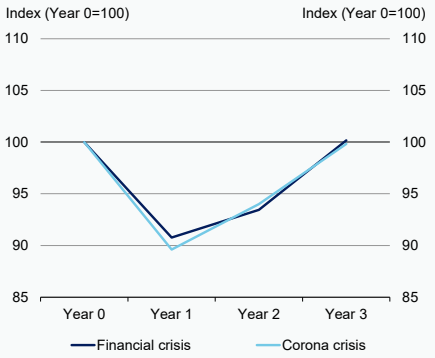


Figure 1.8

Recovery of exports expected to be more like during the financial crisis



Note: In the figures the year 0 depicts the year preceding the crisis, i.e. 2008 in the case of the financial crisis and 2019 for the corona crisis.
Source: Statistics Denmark and own calculations.

There is a high level of uncertainty surrounding the outlook

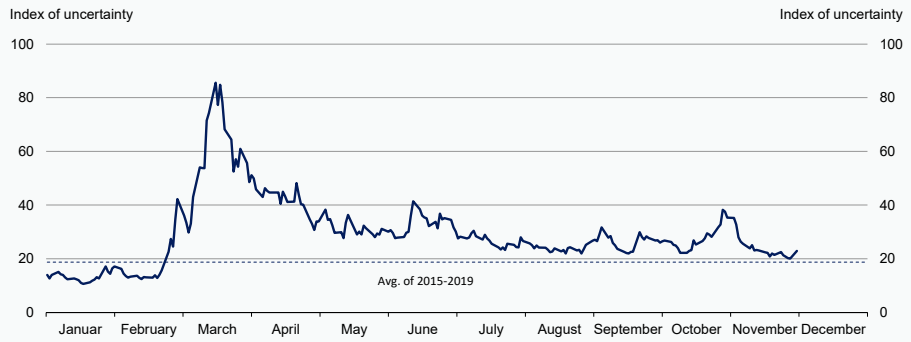
The corona pandemic caused enormous uncertainty in the spring, both in terms of the depth of the economic setback as well as the course for following recovery. Since then, the recovery has been well under way, although a renewed wave of contagion has occurred. The pandemic continues to influence the risks for the outlook, and there are both downside and upside risks that can influence economic activity over the coming period.

The second wave of contagion in the fall shows that there is still large uncertainty attached to the course for the corona pandemic, which may at intervals hold back the economic recovery. Multiple vaccines look to be well under way, but it will take time to fully roll-out the vaccination programmes, and it will be a while before they can effectively put a stop to the contagion.

Uncertainty hampers decisions and can have consequences for the real economy, for example in terms of lower levels of investments. A frequently used measure for the uncertainty about the future is fluctuations in the financial markets. In September and October there was increased volatility alongside the worsened development in the contagion, but not to the same degree as in the spring during the first wave of the corona pandemic. Lately, financial markets have reacted positively to the news of coming vaccines, and the level of uncertainty according to this measure seems to have decreased again, *cf. figure 1.11.*

Figure 1.9

Financial market volatility is lower than in the spring



Note: The figure depicts the Euro Stoxx50 Volatility index, which is a volatility index for European equities.
Source: Macrobond and own calculations.

Furthermore, it is unclear to what extent the corona crisis will result in longer-lasting changes. Altered consumption habits, different travel patterns and increased digitalisation may for example affect growth and employment across different industries. The corona crisis may thus more permanently affect conditions for demand and production, which will eventually be reflected in the industry structure. The ambitious green transition can also lead to changes in the composition of Danish industries, *cf. chapter 2*.

This means that production must also adapt. In this context, the Danish economy has the advantage of being adaptable and flexible combined with an extensive social security net. However, adjustments in production can during a transitional phase lead to, for example, increased unemployment.

There are also other risks in terms of the economic development. The United Kingdom has left the EU, but has for a transitional period until the end of 2020 been following EU regulations. Negotiations on the future relationship between the UK and the EU have not yet led to an agreement. If this does not happen, trade with the United Kingdom will be subject to WTO rules from the turn of the year. This is included in the present forecast as a technical assumption. An agreement that prevents a no-deal will, all other things being equal, lead to a more positive development in bilateral trade with Britain.

Conversely, developments over the summer showed that economic activity can increase relatively rapidly when corona infection allows it. This implies the possibility of a more positive course - not least if vaccines can be distributed sufficiently quickly in large parts of the world. In relation to the economic outlook, there are thus risks in both upward and downward directions.

Box 1.1

The forecast basis and changes since last forecast

The forecast is based on the national accounts that are available until the third quarter of 2020, as well as a number of indicators for the economic development, which for the most frequent reach into December. The national accounts are attached with larger than usual uncertainty due to the corona crisis.

Since the assessment in August, new data for economic activity and employment show that the downturn in the first half of the year was less pronounced than projected. As part of the projection in August it was assumed that the recovery would not be further held back. This has not happened due to the second wave of contagion. Together these factor affect the expected development in GDP. Hence the growth projection has been revised upward from -4.5 per cent to -3.8 per cent this year and revised downward from 4.2 per cent to 2.8 per cent next year. Thus the recovery will be more gradual than previously projected, while the downturn in 2020 will be smaller, *cf. figure a.*

In the forecast it is assumed that the current development in contagion will lead to a halt in the economic improvement over the winter. However, the forecast was finalised prior to the very serious developments in the corona pandemic and new measures to limit the contagion, including measures that were announced December 16 2020.

On the labour market, a faster and stronger recovery occurred in the third quarter than expected. This implies that the drop in employment and rise in unemployment in 2020 as a whole will be smaller than previously projected. Against this background, the drop in employment this year is revised downward from 43,000 persons to 23,000 persons, while the rise in unemployment is revised downward from 43,000 unemployed to 29,000 unemployed. Compared to the assessment in August, the profile for the development in the employment is thus revised, but employment is only expected to exceed the 2019-level in 2022, *cf. figure b.*

Since the assessment in August, an agreement has been reached on the Budget Bill for 2021, as well as political agreements concerning stimuli and a green recovery, in which funds have been reserved that enter into public spending, including expenditures to transition initiatives and minimum staffing in day care etc. Furthermore, additional expenditures in connection to COVID-19 has been agreed upon for 2020, as well as budgeted public spending related to COVID-19 in 2021. On that basis, the projection for the real growth in public spending is revised upward by 0.3 percentage points to 2.5 per cent in 2020 and revised upward by 0.8 percentage points to 1.4 per cent in 2021.

Figure a
GDP

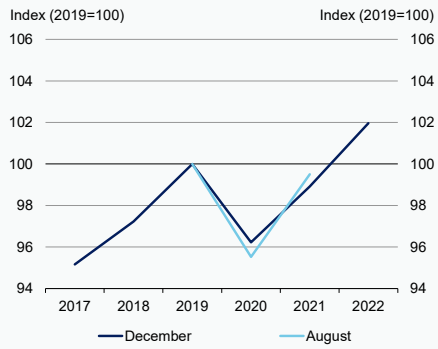
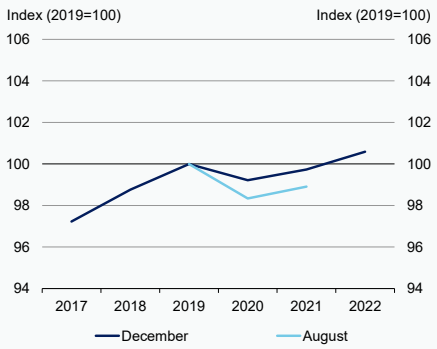


Figure b
Employment



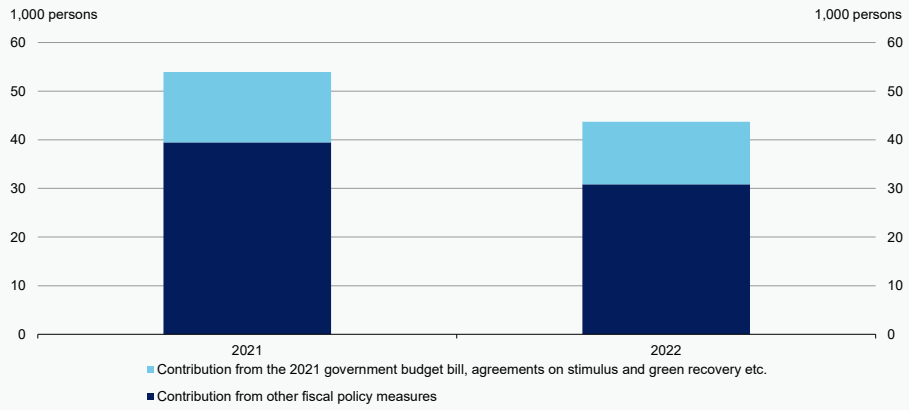
Source: Statistics Denmark and own calculations.

1.2 Fiscal policy and public finances

In the wake of the coronavirus pandemic, a pronounced and expansionary fiscal policy has been planned in order to support the Danish economy in the best possible way. The fiscal measures include both compensation schemes and stimulus initiatives. In total, the economic policy is estimated to support almost 55,000 jobs in 2021 and 45,000 jobs in 2022. Included in this estimate, the agreements in December on stimulus and green tax reform etc., together with the 2021 budget bill, support around 14,500 jobs in 2021 and almost 13,000 jobs in 2022, *cf. figure 1.12*.

Figure 1.102

Expansionary fiscal policy significantly support employment in 2021 and 2022



Note: The effect on economic activity is calculated as the fiscal policy's multi-year demand effect (incl. effect of support compensation schemes, pay out of withheld holiday payments, and publicly initiated investments outside the public sector) on employment excl. the effect from structural reforms on the capacity pressure.
Source: Own calculations.

The 2021 budget bill and additional agreements supporting a green restart of Denmark include a number of measures that contribute to support Danish jobs and at the same time promote a green transition, including contributions to the target of reducing greenhouse gas emissions with 70 per cent in 2030. In addition, the 2021 budget bill prioritizes a strengthening of the public welfare services in elder care, nurseries and kindergartens as well as higher quality of young people's education.

Based on the planned fiscal policy, the economic forecast, and other new information and estimates, the deficit on the actual budget balance is expected to decrease from around 3½ per cent of GDP in 2020 to 1¼-1½ per cent of GDP in 2021-2022, *cf. table 1.1*. The deficit on the structural budget balance is estimated to stay within the limit of the Danish Budget Law and decreases from 2021 to 2022. Furthermore, the public gross debt continues to be moderate. The sustainability of the public finances as well as the underlying structures and prospects are persistently sound.

Based on the 2021 budget bill and preliminary budgets for municipalities and regions etc., public consumption is projected to grow by 1.4 per cent in 2021, *cf. table 1.1*. The calculated growth in the demographic pressure constitutes 0.5 per cent in 2021.

Table 1.1

Key figures relating to fiscal policy

	2020	2021	2022[4)]
Structural budget balance, per cent of structural GDP	-0.2	-0.4	-0.3
Actual budget balance, per cent of GDP	-3.5	-1.3	-1.5
EMU-debt, per cent of GDP	43.4	40.9	41.5
Public consumption growth[1)]	2.5	1.4	-0.3
Multi-year fiscal effect, per cent of GDP[2)]	2.5	3.1	2.3
Multi-year employment effect, 1,000 persons[2)]	79	54	44
Output gap, per cent[3)]	-2.0	-0.6	0.0
Employment gap, per cent[3)]	-0.2	-0.2	0.0

1) Public consumption is calculated using the input method incl. depreciations. The estimated growth in public consumption is technically assumed to be the same using the input and the output method. The estimate for the growth rate in forecast years is heavily affected by extraordinary expenditures related to COVID-19.
2) Calculated measure of the fiscal policy's demand effect (level effect compared to 2019) on GDP and employment, calculated excl. the effect of structural policies on the capacity exploitation. The effect is measured incl. contribution from the temporary compensation schemes, pay out of withheld holiday payments, and publicly initiated investments.
3) Calculated measure of how far production and employment are from their structural levels. When the gaps are negative, it indicates more available resources in the economy than under normal cyclical conditions.
4) The estimates for 2022 are based on technical assumptions about the fiscal policy in 2022.

Source: Statistics Denmark and own calculations.

The estimated growth of public consumption by 2.5 per cent in 2020, and 1.4 per cent in 2021 as well as the technically projected consumption growth of -0.3 per cent in 2022 are strongly influenced by extraordinary expenses related to COVID-19, particularly in the health sector which is expected to be held in 2020 and 2021. When correcting for these measures, including in particular the extraordinary temporary expenditures in 2020 and 2021 which affect growth between the years, public consumption is estimated to grow by 1.2 per cent in 2020, 1.4 per cent and 2021, and 0.9 per cent in 2022.

Actual budget balance and debt in Denmark and abroad

In 2020, the actual budget deficit is estimated to be around 3½ per cent of GDP, while the deficit is expected to be perceptibly lower in 2021 and 2022, *cf. figure 1.13*. This implies a pronounced shift in the budget balance from a surplus in 2019 to a deficit in 2020 weakening the actual budget with almost 7½ per cent of GDP. The weakening of the public finances reflects the significant compensation schemes and the economic setback including the sizeable automatic fiscal stabilizers in Denmark.

The shift can be seen as an overall measure of how much public finances contribute to dampen the income decline in the private sector from 2019 to 2020 and thereby dampen the negative impact of the economic setback. The significant weakening of the actual budget balance is thus assessed to be in line with the difficult economic situation. If these sizeable steps had not been taken to support the economy, the setback would have been substantially larger – and thus also the major secondary consequences for the public finances.

It is not only in Denmark that sizeable steps have been taken to ease the significant negative economic consequences of COVID-19 for i.e. businesses and jobs. The latest forecast from the European Commission points to a budget deficit in 2020 in the USA of around 15 per cent of GDP and for the EU as a whole of around 8 per cent of GDP. Thus, despite the significant weakening of the actual budget balance in Denmark in 2020, the expected budget deficit continues to be fairly limited compared to other countries.

Figure 1.13

Actual budget balance

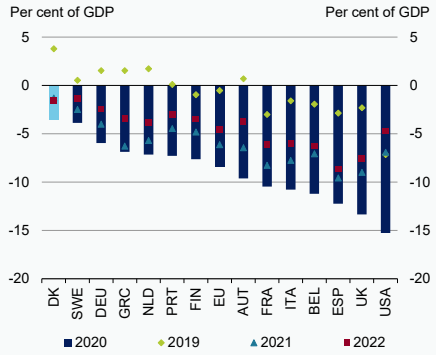
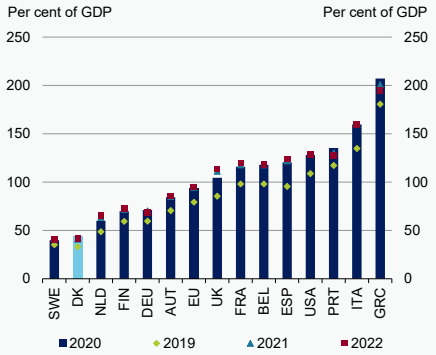


Figure 1.14

EMU-debt



Note: The markings show accounting numbers for 2019 and estimates for 2021 and 2022, while the pillars show estimates for 2020. Estimates for Denmark are from the current assessment, while estimates for other countries are based on the economic forecast by the European Commission.
Source: Statistics Denmark, The EU Commission's autumn forecast 2020, and own calculations.

The setback and the implemented measures also increase public debt. In 2020, the EMU-debt is estimated to constitute around 43½ per cent of GDP compared to 33 per cent of GDP in 2019. This also reflects the temporary supportive liquidity measures – especially regarding taxation – related to the private sector. Thus, a wide margin to the EU's limit of 60 per cent of GDP is maintained, and Denmark continues to have low EMU-debt seen in an international perspective, *cf. figure 1.14*.

By the end of 2022, the public sector is estimated to have financial assets and liabilities of approximately equal size, i.e. a net public debt of around zero. Hence, Denmark has been able to implement significant measures without endangering the high confidence of the public finances before the corona crisis. This reflects, among other things, that

Denmark had a sound starting point before the crisis with low public debt and a prospect of structural surplus.

New initiatives contribute to a green restart of the economy

The government, together with a majority in the Danish Parliament, has entered into five sizeable political agreements in December 2020 that support the recovery of the economy and promotes the green transition, *cf. box 1.2*. The priorities in the agreements are primarily financed by resources from the EU's Recovery and Resilience Facility, a reserve for the handling of COVID-19 as well as other reserves etc. on the 2021 budget proposal.

Box 2

A green restart of Denmark

With the 2021 budget bill and additional agreements supporting a green restart, it has been decided to implement a wide range of initiatives that contribute to the economic recovery. The agreed fiscal initiatives broadly stimulate demand through several channels, including private consumption, income, investments in the green transition etc. At the same, the initiatives contribute to the reduction of greenhouse gas emissions towards the 70 per cent reduction target in 2030. Key elements in the agreements are briefly described below.

- **Agreement on the release of two weeks of withheld holiday payments, export package, and an extension of the compensation schemes (December 2nd)** stimulate private consumption, support Danish positions of strength within exports, and assist Danish employees, jobs, and businesses in a period where the society continues to be marked by limitations on economic activity due to COVID-19. The initiatives in the agreement are estimated to strengthen employment with roughly 6,500 persons in 2021 and around 4,000 persons in 2022.

- **Agreement on green transition of road transport (December 4th)** is estimated to reduce greenhouse gas emissions by 1.0 million tons in 2025 and 2.1 million tons in 2030 and thereby bringing Denmark closer to the 70 per cent target in 2030. Moreover, the agreement includes an ambition of 1 million zero- and low-emission vehicles, and the agreement already include funding and concrete action estimated to increase the number of green vehicles by 775,000 in 2030.

- **The 2021 budget bill (December 6th)** implies that around DKK 5 billion over four years are prioritized to strengthen the welfare of children, young adults, and elderly. Furthermore, the agreement includes, among other things, a nature- and biodiversity package which protects and preserves Danish nature as well as a strengthening of culture and media. The 2021 budget bill (incl. the agreement on the distribution of funds for research and development and the nature- and biodiversity package) is estimated to support employment by around 3.500 persons in 2021 and 2.300 persons in 2022.

- **Agreement on economic stimulus and green recovery (December 6th)** includes, among other things, transition efforts targeted at specific areas of Denmark and industries which are particularly hard hit by the crisis. Furthermore, a range of initiatives have been agreed upon which both contribute to the green transition and the economic recovery, digitalization efforts as well as special support targeted the experience industry. The agreement is estimated to support employment by around 2,000 persons in 2021 and 2022 and to reduce Denmark's greenhouse gas emissions by 0.2 million tons in 2025 and 2030.

- **Agreement on green tax reform (December 8th)** reduces Denmark's CO_2-emissions by 0.5 million tons towards 2025. In addition, the contracting parties have agreed that a higher and more uniform tax on CO_2 needs to be established towards 2030. Furthermore, the agreement includes an incentive to implement necessary investments in green technology with an investment window up to and including 2022 and almost DKK 700 million additionally in direct grants to green investments. Moreover, the temporary relaxation of the R&D-deduction is extended to also include 2022. The agreement is estimated to increase employment by around 2,200 persons in 2021 and 4,700 persons in 2022.

In total, the measures in the agreements imply

Stimulating economic activity: **DKK 55 billion** in 2021 and 2022	Supporting employment by up to **14,000 persons** on average in 2021 and 2022	Reducing greenhouse gas emissions by **2.8 million tons CO_2e** in 2030

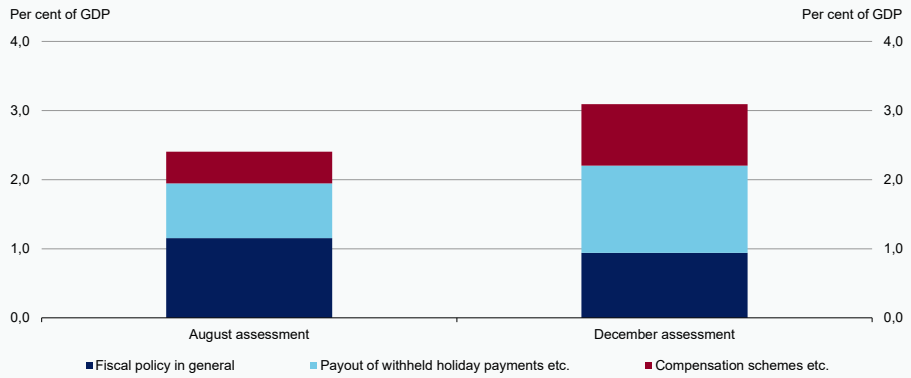
Source: Fact sheet Samlet overblik over aftaler om grøn genstart mv. (December 10th 2020) available at www.fm.dk (in Danish only) .

With the implemented compensation schemes and stimulus initiatives, fiscal policy already considerably support economy activity. In addition to this, the new expansionary measures decided in relation to the 2021 budget bill etc. will support the economy further. In total, the planned fiscal policy gives a significant contribution to the economic recovery in Denmark in 2021, *cf. figure 1.15*.

The fiscal policy supports economic activity more than estimated in the August assessment and thus gives a more powerful impulse to the recovery of activity and employment. This is important in the current situation where insecurity is increasing, also abroad. The larger effect on economic activity reflects to some extent that a part of the reserve for the handling of COVID-19 on the budget proposal is distributed to specific initiatives which stimulate the economy more than technically assumed in August. In addition, the new assessment includes the effect of an expected use of resources from EU's recovery fund.

Figure 1.15

The fiscal policy's contribution to GDP in 2021 compared to the August assessment



Note: The effect on economic activity is calculated as the fiscal policy's multi-year demand effect on employment excl. the effect from structural reforms on the capacity pressure. Pay-out of withheld holiday payments etc. also covers publicly initiated investments outside the public sector, *cf. chapter 8*.
Source: Statistics Denmark and own calculations.

The 2021 budget bill and additional agreements supporting a green restart of Denmark also contribute to the reduction of greenhouse gas emissions corresponding to a total of 1.7 million tons of CO_2e in 2025 and 2.8 million tons of CO_2e in 2030. Thus, with the agreements, Denmark is closer to the target of reducing greenhouse gas emissions with 70 per cent in 2030. It is estimated, that since the government came to power, resolutions reducing emissions by of total of around 7 million tons of CO_2e in 2030 has been agreed upon (including the decision of phasing out coal at Funen's Power Plant). This corresponds to about a third of the shortfall towards the redemption of the 70 per cent reduction target, meaning that the shortfall is now estimated to be around 14 million tons of CO_2e.

Fiscal framework in 2021 and frame for handling COVID-19

On September 19th, the European Commission reported that "the general escape clause" in the EU's fiscal rules (The Stability and Growth pact), which were in force in 2020, will be prolonged to 2021. In practice, this implies that the EU's fiscal rules are *de facto* suspended in both 2020 and 2021. Thus, EU countries will not have to submit a corrective action plan if they exceed the limit of the actual budget deficit of 3 per cent of GDP, nor if they exceed their own target for the structural budget balance or the standard requirements for structural budget improvements towards these targets.

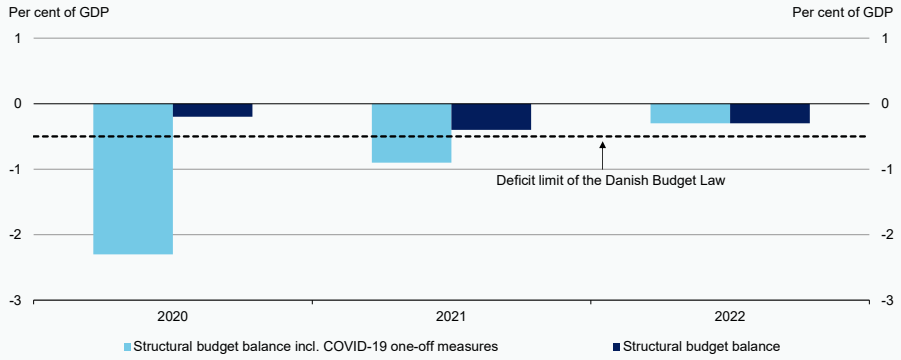
In relation to the Danish Budget Law, it is the government's point of reference that the fiscal framework in 2021 in Denmark needs to be assessed based on the concrete outlook for the Danish economy. With the current estimates, there is no prospect of an annual decline in GDP in 2021 nor extraordinarily large output- and employment gaps in a historic perspective. In that light, Denmark's fiscal policy in 2021 is planned in accordance with the framework within the Danish Budget Law. Among other things, this is also due to the fact that the Danish economy is currently in a better position than the euro area as a whole. Additionally, there is sizeable flexibility and manoeuvre room within the fiscal framework for 2021 to handle the challenges from COVID-19.

This reflects that the fiscal policy for 2021 set out by the 2021 budget proposal presented in August was planned very expansionary. On the basis of the August assessment, the structural deficit in 2021 amounted to 0.5 per cent of GDP which is the limit set by the Danish budget law. In the current assessment, the structural budget balance is estimated to -0.4 per cent of GDP in 2021. This is primarily due to the estimate of the structural budget balance being affected by a technical adjustment implemented by Statistics Denmark in relation to the calculation of capital gains and losses on public debt in historical years. The technical adjustment contributes to an improvement of the structural budget balance in 2021. It should be noted, that the small improvement of the structural deficit in 2021 does not change the fact that the planned fiscal policy is assessed to be in line with the economic outlook. In addition, major initiatives directly related to COVID-19 are considered as one-off measures in the computation of the structural budget balance, *cf. figure 1.16*. This applies to, among others, the compensation schemes etc.

Thus, the Ministry of Finance's estimate of the structural budget balance is, among other things, corrected for extraordinary expenditures directly related to COVID-19 which are considered as one-off measures. Illustratively, if COVID-19 one-off measures are not corrected for – i.e. if the structural budget balance is calculated incl. COVID-19 one-off measures – the structural budget balance is estimated by uncertainty to -2.3 per cent of GDP in 2020 and -0.9 per cent of GDP in 2021. Moreover, there is a stimulating effect on the economy from the pay out of withheld holiday payments and increased renovations in social housing (agreed on in the Green housing agreement (May, 2020)), both of which do not affect the structural budget balance.

Figure 1.16

Structural budget balance with and without COVID-19 one-off measures in 2020-2022



Note: Calculated incl. COVID-19 one-off measures and related revenue from corporation tax and equity tax.
Source: Statistics Denmark and own calculations.

In 2021, an overall frame is prioritized to the handling of COVID-19 expenditures and additional stimulus initiatives of around DKK 13½ billion. This reflects both the reserve on the 2021 budget proposal of approximately DKK 9¼ billion and the expected financial contribution in 2021 from the EU's recovery fund and React-EU of around DKK 4¼ billion. The overall frame is partly distributed with the 2021 budget bill etc., corresponding to about DKK 9¼ billion in total. Consequently, a significant reserve of approximately DKK 4 billion is withheld with the purpose of handling additional COVID-19 expenditures in 2021 (of structural character) as well as new initiatives to stimulate the economy, *cf. table 1.2*.

Table 1.2

Distribution of funds reserved to the handling of COVID-19 and stimulus measures in 2021

	2021
DKK billion (2021 prices)	
Overall frame to the handling of COVID-19 (reserve on the 2021 budget proposal and expected funds from the EU)	**13.4**
- reserve to the handling of challenges in the light of COVID-19 etc. (2021 budget proposal)	*9.2*
- funds from the EU's recovery fund and React-EU (the amount received in 2021 is based on a technical assumption)	*4.2*
Distributed funds in agreements on stimulus and green recovery etc.[1)]	**9.3**
Residual frame to COVID-19 and additional stimulus measures	**4.1**

1) The distribution includes, among other things, *Agreement on release of savings fund for employees (2 weeks of withheld holiday payments), export package and an extension of the compensation schemes, Agreement on green transition of road transport, The 2021 budget bill, Agreement on economic stimulus and green recovery*, and *Agreement on green tax reform*.
Source: Own calculations.

The retained reserve ensures, on the one hand, the handling of well-known challenges and the implementation of targeted measures which contribute to the economic recovery. While, on the other hand, upholding flexibility to handle new COVID-19 expenditures and additional measures during 2021, as the development and challenges are gradually known with more certainty. This should be seen in continuation of the economic-political strategy so far which focuses on initiatives related to the handling of COVID-19 being timed and dosed in accordance with the ongoing economic and health-related development.

For 2022, technical assumptions regarding fiscal policy are used, including the current expenditure ceilings for the years after 2021. The assessment prospects an improvement of the structural budget balance from -0.4 per cent of GDP in 2021 to -0.3 per cent of GDP in 2022. The concrete fiscal policy for 2022 is planed during 2021, including the 2022 budget bill and the 2022 budget agreements with local governments.

1.3 Annex Table

Table 1.3

Key figures from the December survey and comparison with estimates from August

	2020		2021		2022
	Aug.	Dec.	Aug.	Dec.	Dec.
Real change, per cent					
Private consumption	-2.8	-4.0	4.7	5.1	2.0
Total government demand	2.9	2.7	0.9	2.0	0.2
- of which government consumption	2.2	2.5	0.6	1.4	-0.3
- of which government investment	7.9	4.5	3.4	6.4	3.6
Housing investment	-0.5	4.7	3.2	4.3	0.2
Business fixed investment	-12.2	-4.0	-0.5	-2.1	7.0
Inventories (cont. to GDP-growth)	-0.9	-0.3	0.8	0.0	0.0
Total final domestic demand	-3.2	-1.8	3.7	3.1	2.0
Exports	-10.2	-10.0	6.2	4.1	6.7
- of which manufacturing exports	-8.3	-4.5	6.0	2.4	3.3
Total demand	-5.8	-5.0	4.6	3.5	3.7
Imports	-8.6	-7.4	5.5	4.8	5.1
- of which imports of goods	-7.0	-3.1	5.0	3.0	2.8
GDP	-4.5	-3.8	4.2	2.8	3.1
Gross value added	-4.8	-4.1	4.3	2.7	3.2
- of which private non-farm sector	-5.7	-4.6	5.2	3.1	4.2
Change, 1,000 persons					
Labour force, total	-8	7	8	7	19
Employment, total	-50	-23	17	15	26
- of which private sector	-56	-25	15	13	24
- of which public sector	6	2	2	2	2
Gross unemployment	43	29	-9	-7	-7
Cyclical developments, per cent					
Output gap	-3.1	-2.0	-1.1	-0.6	0.0
Employment gap	-1.1	-0.2	-1.0	-0.2	0.0
Unemployment gap	0.9	0.4	0.6	0.1	0.0

Source: Statistics Denmark and own calculations.

Table 1.3 (continued)

Key figures from the December survey and comparison with estimates from August

	2020		2021		2022
	Aug.	Dec.	Aug.	Dec.	Dec.
Change, per cent					
House prices (single family homes)	-1.5	3.3	1.9	2.9	2.3
Consumer prices	0.3	0.5	1.2	1.2	1.6
Hourly earnings in the private sector[1)]	2.1	2.2	2.4	2.4	2.6
Real disposable income, households	1.3	2.4	3.4	1.3	2.5
Productivity in the private non-farm sector	-0.4	-1.1	2.3	0.2	2.7
Interest rate, per cent per year					
1-year rate loan	-0.6	-0.5	-0.4	-0.5	-0.4
10-year government bond	-0.3	-0.4	-0.3	-0.4	-0.4
30-year mortgage credit bond	1.2	1.1	1.3	1.0	1.1
Public finances					
Actual public balance (DKK bn.)	-88	-81	-56	-31	-38
Actual public balance (per cent of GDP)	-3.9	-3.5	-2.4	-1.3	-1.5
Structural public balance (per cent of GDP)	-0.4	-0.2	-0.5	-0.4	-0.3
Gross debt (per cent of GDP)	46.3	43.4	41.9	40.9	41.5
Labour market					
Labour force, total (1,000 persons)	3,092	3,111	3,100	3,118	3,137
Employment, total (1,000 persons)	2,948	2,979	2,965	2,995	3,021
Gross unemployment (1,000 persons)	147	133	138	126	119
Gross unemployment (per cent of labour force)	4.8	4.3	4.4	4.0	3.8
External assumptions					
Trade-weighted international GDP-growth	-7.4	-5.4	5.3	2.7	3.9
Export market growth (manufactured goods)	-15.1	-9.7	9.0	4.8	5.6
Exchange rate (DKK per USD)	6.6	6.5	6.4	6.2	6.2
Oil price, dollars per barrel	41.9	41.6	47.4	48.4	50.9
Balance of payments					
Current account balance (DKK bn.)	125	162	133	160	187
Current account balance (per cent of GDP)	5.6	7.1	5.7	6.7	7.5

Source: Statistics Denmark, European Commission, Macrobond, Danish Confederation of Employers and own calculations.

Chapter 2
Danish business structure and positions of strength

The business structure changes over time. Agriculture was once the dominant occupation in Denmark as well as in other countries. Since then, manufacturing and later services have become more important. The changes reflect, among other things, that patterns of consumption change with increasing prosperity, and that technological advancements are changing production opportunities.

In addition to the overall shift in the business structure from agriculture to manufacturing and service industries, there may be specialisation in which production is to some extent concentrated in specific industries. As a result, the business structure in individual countries may have gained some unique characteristics, which may, for example, be connected to the availability of natural resources, industry-specific investments, as well as knowledge and know-how on specific areas. Industrial policy and public regulation can also play a role and thus lead to a degree of specialisation. This applies, for example, to the green industry.

Specialisation provides the opportunity to take advantage of natural and self-created positions of strength, where special prerequisites for creating value are utilized. However, specialisation also implies vulnerabilities, for example in case of sudden changes in international competition and demand, as well as the emergence of new technologies.

An important prerequisite for developing and maintaining positions of strength is a dynamic economy, in which resources are easily reallocated across companies and industries. Here, Denmark is fairly well placed due to a well-educated labour force and active labour market policies, which help to upgrade qualifications and maintain competences. In addition, there are generally good framework conditions that, among other things, support the conditions for research, innovation and renewal.

This chapter takes a closer look at the development in the Danish business structure, whether there are signs of increased specialisation, and in which industries Danish positions of strength can be found. Finally, the green industries are examined more closely as a particular position of strength.

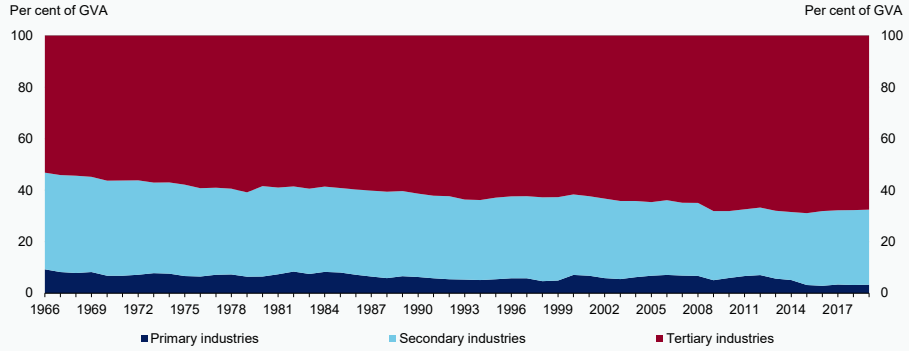
2.1 Development in the Danish business structure

Danish businesses are characterised by great variety and many different companies. Traditionally, firms are grouped into industries that produce similar goods or services. In general, these are primary industries (agriculture and mining and quarrying), secondary (manufacturing, utilities and construction) and tertiary (service industries). Today,

the tertiary industries account for around 70 per cent of the economy (excluding the public sector), both measured in terms of value added (GVA) and employment. The share has grown considerably since 1966 and reflects especially that the secondary industries account for an increasingly smaller share of the economy, but also that agriculture and other primary industries continue to decline as a share of the economy, *cf. figure 2.1.*

Figure 2.1

Development in the business structure since 1966



Note: Shares are measured relative to the total economy excl. public industries such as public administration, education and health.
Source: Statistics Denmark and own calculations.

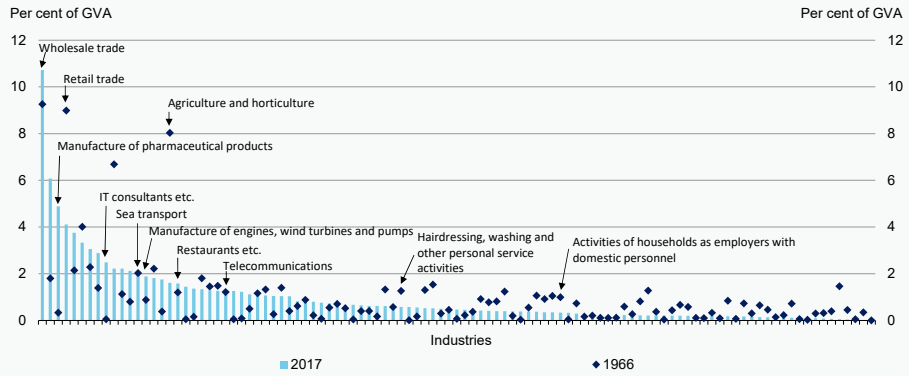
An important explanation for the shifts in the business structure is economic growth, including as a result of increased productivity. When the economy grows, wealth increases, and over time this has led to changes in the composition of consumption. Food and clothing account for a smaller share in total consumption, for example, while services account for more.

Behind the overall development in the business structure, there are significant shifts at a more detailed industry level. More detailed industry information shows that, for example, the pharmaceutical industry and manufacturing of motors, wind turbines and pumps are among the industries that have increased their economic importance over time. Based on the 117 industry classification in the national accounts, the pharmaceutical industry was the third-largest industry in Denmark in 2017 (disregarding public industries). This is a jump of 63 places from a 66th place in 1966. Similarly, manufacturing of motors, wind turbines and pumps has grown in importance to a position as the 14th largest industry in Denmark in 2017, *cf. figure 2.2.*

Zooming in on the service oriented businesses, specialists like IT-consultants, for example, have grown considerably in size, but also an industry like restaurants accounts for a greater share. On the other hand, hairdressers and domestic help, for example, now account for a smaller share of the total economy.

Figure 2.2

Distribution of the industries' share of GVA, 1966 and 2017



Note: The shares are excl. public administration, education and health, i.e. 105 industries out of 117 industries are included.
Source: Statistics Denmark and own calculations.

Wholesale trade, that is the mediation of goods between firms, has maintained its position as the largest industry in Denmark since 1966, and a number of other industries have also maintained their relative importance for the private sector. This can, however, potentially hide changes in the nature of goods and services from these business, *cf. appendix 2.1*. This is evidently the case for telecommunication, which in both 1966 and 2017 accounted for around 1 per cent of the private economy measured by value added.

The shifts at the detailed business level indicate that the development in the business structure is not only driven by conditions for demand. Conditions deriving from the production side also contribute to explaining the shifts, for example the use of new technologies or outsourcing of production. Fewer barriers to trade across borders mean that companies can produce and sell goods to the world market and hence specialise and benefit from economies of scale. Therefore, these shifts can also be signs of specialisation, implying that production is concentrated to certain areas. This has given the Danish business structure certain unique characteristics in comparison to other countries.

Signs of increased specialisation in Denmark

Specialisation is in its nature a relative measure, that is, a comparison of an area or country with other geographic areas. It can express a larger utilisation of specific resources in the production compared to other countries. This might be labour or specific forms of capital, which could cover anything from natural resources to intellectual property rights, patents, or the like, which are built up over a longer time span.

In order to measure the degree of specialisation a frequently used measure is comparing which goods and services are produced in a country with the production in other countries. Thus, Denmark can be said to be specialised if some businesses account for a relatively large share of the total value added.

There is not one single measure, which perfectly captures the degree of specialisation in a country. In this analysis two different measures are used that both shed light on the composition of businesses in Denmark compared to an average of other countries, *cf. box 2.1*. Measured by Krugman's specialisation index as well as the Theil index, there are signs that Denmark has become more specialised since 1995. At the same time there are signs that we, since 2015, have become a little more specialised than neighbouring countries such as, for example, Sweden and Germany, *cf. figure 2.3 and 2.4*. A relatively large degree of specialisation in Denmark is especially the case when the measure is based on the Theil index, which puts large weight on positive deviations in businesses that are small in the countries of comparison.

Figure 2.3

Krugman's specialisation index

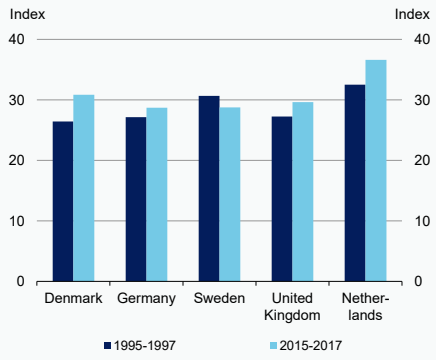
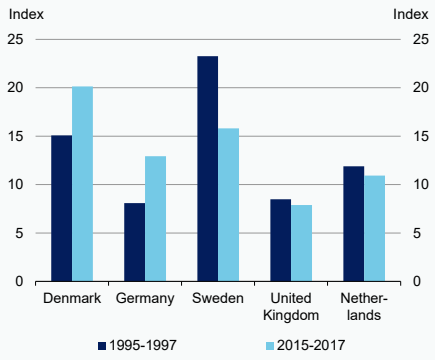


Figure 2.4

Theil index for specialisation



Note: Both indices are based on the 64-industry classification, however, excl. four public industries such as administration, education and health. In order to achieve comparability with Sweden, the following industries have been merged: 1) manufacturing of chemical products and manufacturing of pharmaceutical products, 2) warehousing and support activities for transportation and postal and courier services, and 3) legal and accounting activities, activities of head offices and management consultancy activities, architectural and engineering activities and scientific research and development. For the United Kingdom, information for 2017 is missing.

Source: Eurostat and own calculations.

The increase in the two indices for Denmark since 1995 means that a larger share of the production – measured at this industry level – has begun to deviate from the rest of the EU. The trend toward a larger degree of specialisation has to be viewed, among other, in light of the inner market in the EU and a rising volume of trade between EU countries, although other factors can be crucial for changes in the business structure. For instance, there is a tendency for smaller countries to be more specialised, and Denmark is not remarkably specialised in comparison to other small countries, *cf. box 2.2*.

Box 2.1

Calculation of specialisation indices

Specialisation is typically calculated by comparing the business composition in one country to an average for other countries. In this analysis the specialisation is computed according to two frequently used measures: Krugman's specialisation index (K_a) and the Theil index (T_a). For country a, the two indices are given by

$$K_a = \sum_{k=1}^{I} |v_a^k - \bar{v}_a^k| \qquad T_a = \sum_{k=1}^{I} \frac{v_a^k}{\bar{v}_a^k} \ln\left(\frac{v_a^k}{\bar{v}_a^k}\right)$$

where v_a^k is the share of the total economy for business k in country a, while $\bar{v}_a^k$ is the average share of the total economy for business k in all other countries than country a. The specialisation indices are computed relative to all EU28 countries (here including Great Britain) on account of the distribution of value added (GVA) in 64 industries (excl. public industries such as public administration, education and health), which is the most detailed level with available data across the 28 countries. In the computation of the indices the comparison is made with all other EU28 countries than the country in question. This helps remove the bias that would otherwise occur for large EU countries like, for example, Germany. If the indices are computed for Germany compared to the EU28 average as a whole, a larger part of the base for comparison would consist of Germany itself, meaning that the computed index for Germany would be too low.

A considerable advantage of Krugman's index is that it is easy to calculate and interpret. With business shares denoted in per cent, the smallest value for the index is 0 (exactly the same industry composition as other countries), while the largest value is 200 (no businesses in common). A feature of the index is that both positive and negative deviations count with the same weight, and both lead to increased index value. The Theil index, on the contrary, has the advantage that it emphasizes positive specialisation in businesses that are small in the group of comparison. Furthermore, the Theil index may be decomposed, for example in contributions from regions. The Theil index does not have an upper boundary and cannot be used for businesses without activity.

Overall, the approach implies that specialisation can only be measured in one dimension, here output. The indices can alternatively also be measured by, for example, employment across businesses. Specialisation computed by employment places Denmark lower than the countries of comparison because of generally higher productivity in Denmark, but does not considerably change the conclusion as to which businesses that contribute to the Danish specialisation.

Furthermore, the industry level is of importance for the results. Larger degree of detail, all other things equal, provides a bigger potential for specialisation between countries, because fewer details, for example manufacturing as a whole, can mask the specialisation of countries in different businesses. An example of this is that Denmark seems to be less specialised when the businesses manufacturing of chemicals and pharmaceuticals (herein lies the Danish specialisation) are joined together in the analysis in order to achieve comparability with Sweden which does not publish GVA for the two industries separately. It is also worth noting that GVA is a measure for the output side, that is, the result of the use of different resources in different countries. But information regarding, for example, the education of the labour force or the type of know-how and capital are often difficult to interpret internationally.

There are multiple alternative measures for specialisation, including indices for inequality in productive structure and the relative Gini index. The index for the inequality in productive structure is a variant of Krugman's specialisation index which sums the squared deviations instead of the absolute. This index is (like the Theil index) more sensitive to single large specialisations and does not provide the opportunity for decomposition. The relative Gini index has a number of the same weaknesses like other mentioned indices and no particular advantages.

Source: Stierle et al. (2018), How did Regional Economic Structures in the EU Change during the Economic Crisis? Discussion Paper 088, European Commission; Mongelli et al. (2016), What's so special about specialisation in the euro area? Early evidence of changing economic structures, Occasional Paper Series No. 168, ECB; Nicole Palan (2010): Measurement of Specialisation # The Choice of Indices, FIW Working Paper, No. 62.

Box 2.2

Why does specialisation and clustering occur?

International trade is an important driver of specialisation across countries. Greater openness and technological advances, have, among other things, reduced transportation costs and thus increased the opportunities for specialisation. This applies, for example, to the EU internal market and closer economic integration in the global economy.

Small countries are usually more open to trade, partly because it provides the opportunity to gain from economies of scale. Therefore, small countries are typically more specialised than larger countries. This also applies to Denmark, which does not stand out particularly compared to other small EU countries, *cf. figure a*.

Specialisation can also result when companies choose to locate in the same geographical areas, i.e. form production clusters. This is partly due to the fact that the presence of other companies in a specific area can signal that labour, infrastructure, etc. is present or helps to attract such resources. In this context, proximity can entail advantages that resemble economies of scale, e.g. that experience, knowledge and ideas are spread more quickly through personal contacts.

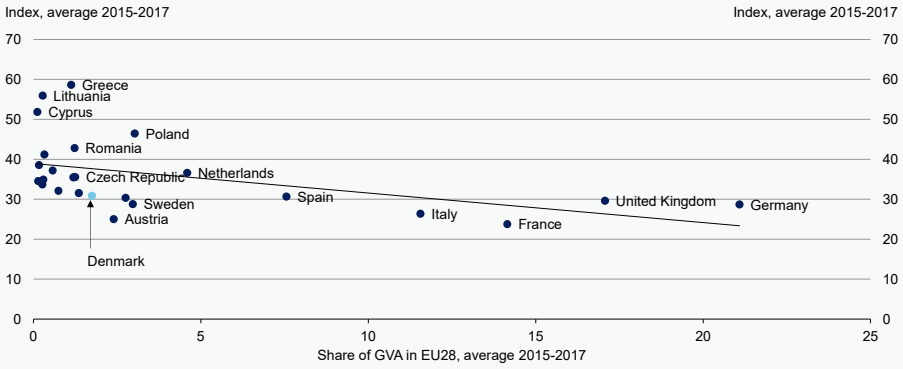
At the same time, business policy contains elements that support cluster formation. This is done, among other things, through cluster organisations that aim to strengthen the productivity and competitiveness of companies and especially small and medium-sized companies through collaboration with knowledge institutions as well as other actors in relevant business and technology areas.

The geographical location of clusters may be more or less random, for example derived from certain inventions or great enterprise in a particular field. In Denmark, examples are the furniture industry in the Salling area and the textile and clothing industry in the Herning/Ikast area.

Clusters do not necessarily exist permanently, as there are also forces that can put them under pressure. For example, clusters may be challenged by competition from other areas or declining transportation costs, which reduces the value of proximity and makes it possible to split up the production process. In North Jutland, for example, in the 1990s there was a large mobile telephony cluster, also known as the Danish Silicon Valley, which, among other things, was connected to Aalborg University. However, most of this cluster disappeared in the early 2000s.

Figure a

Relationship between country size and Krugman's specialisation index



Note: See note to figure 2.3. The same relationship also holds for the Theil-index.
Source: Eurostat and own calculations.

On a closer look at the Denmark specialisation, four industries stand out using both indices, *cf. table 2.1*. These are wholesale trade, the chemical and pharmaceutical industries, sea transport and mining and quarrying. The Krugman index also points to banks etc. as well as the manufacturing of machinery and equipment as areas with separate Danish specialisation, while the Theil index also identifies fisheries as well as furniture and other manufacturing etc., which includes the manufacturing of toys.

Table 2.1

Industries with the largest Danish specialisation, 2015-2017e

	Krugman's specialisation index	Theil-index
1	Wholesale trade	Sea transport
2	Chemical and pharmaceutical industry	Fisheries
3	Sea transport	Mining and quarrying
4	Banking and lending	Chemical and pharmaceutical industry
5	Mining and quarrying	Furniture and other manufacturing etc.
6	Manufacturing of machinery and equipment	Wholesale trade

Note: See the note to figure 2.3. *Whole sale trade* is excl. motor vehicles and motorcycles. *Banking and lending* is excl. insurance and pensions.
Source: Eurostat and own calculations.

The Danish specialisation in mining and quarrying and fisheries should be seen in the light of the Danish natural resources in these areas in, for example, the North Sea (for fishing including British waters).

Denmark's largest industry, wholesale trade, is identified to a greater extent as an area of specialisation according to the Krugman index than with the Theil index. This is because wholesale trade also takes up a lot of space in other economies, and the industry therefore does not show up to such an extent when specialisation is measured by the Theil index. A number of factors play a role in relation to the Danish specialisation in wholesale trade, *cf. box 2.3*.

2.2 Danish positions of strength

Specialisation gives rise to positions of strength when production is concentrated in areas where there are special prerequisites for creating value.

The prerequisites can come from experience and know-how, e.g. mastery of special technologies that enables the production of unique products or supports cost-effective production. It can also stem from the ability to produce quality products that can be sold at a high price. Strengths can also be an expression of a dominant market position due to exclusive access to resources or other conditions that restrict competition from producers from other countries.

Box 2.3

Large Danish wholesale trade

Wholesale is one of the largest service industries in the European economy. Wholesale covers the resale of new and used goods to retailers, industrial, commercial, institutional or professional users or to other wholesalers.

In Denmark, wholesale trade accounts for a relatively large share of value added compared to other EU28 countries. However, there is no simple and straightforward explanation for this phenomenon. In an analysis to the EU Commission from 2016, which examined the European wholesale trade and its value chains, several factors were brought into play that may help explain the large Danish wholesale trade.[1]

According to the analysis, EU countries with a large coastal area also typically have a large wholesale trade. The analysis explains that wholesale trade constitutes a support function for sea transport and port activity, for example in the form of resale of imported goods not only for domestic use, but also for the rest of the EU. This also applies for Greece, which also has a large wholesale trade. Extensive foreign trade thus helps to explain the large Danish wholesale trade.

The analysis also finds that a significant proportion of the largest wholesale companies in the EU are subsidiaries of a multinational company from another industry. This means that the European wholesale sector mainly consists of multinational companies from other sectors that have chosen to integrate the wholesale function into their business. It emphasizes that wholesale trade to a large extent is an integral part of the value chains in many manufacturing industries. An example from Denmark is Carlsberg's wholesale trade.

In practice, it will often depend on a specific assessment, how activities of a business are classified by industry. In Denmark, wholesale activity in Danish manufacturing businesses will often be counted as part of the wholesale trade industry, even if the activity is not separated into an independent company or production unit. This approach may imply that the wholesale trade in Denmark covers activities which in national accounts of other countries is included into various types of manufacturing.

Finally, the large Danish wholesale trade must be seen in connection with the fact that since 2005 there has been a significant increase in the volume of trade in goods outside the Danish borders, *cf. Economic Survey, August 2018*. This activity is divided into *factoryless production* and *merchanting*, which has in common that companies buy products abroad that are then resold abroad without at any time crossing the Danish border. This can, for example, happen when a subsidiary to a Danish company produces goods abroad.

The activity in connection with trade outside the borders of Denmark is difficult to treat statistically due to a number of factors, e.g. distribution of value added, income, ownership etc. In the Danish national accounts, emphasis is placed on the ownership of the raw materials that are included in the production in the factory abroad. If the business owns the raw materials, it is categorized as a production company (factoryless production). If the business does not own the raw materials, it falls instead under service production in the form of trade (merchanting).[2]

In other countries, the same trade-off is not necessarily done in a similar way, so on this basis Denmark may have a relatively larger share of wholesale trade and smaller manufacturing production in the statistics, even though the individual businesses across countries carry out the same type of activity. Trade outside the borders of Denmark is a phenomenon that has grown significantly in importance over the past 15 years, and it is therefore not in itself sufficient to explain the relatively large wholesale trade in Denmark throughout the entire period since 1966.

1) Dachs et al. (2016), EU wholesale trade: Analysis of the sector and value chains, Austrian Institute for Economic Research (WIFO). Prepared for use by the European Commission.
2) See e.g. Danmarks Nationalbank (2019): Globaliseringen påvirker mål for lønkonkurrenceevnen; Statistics Denmark (2016): Notat om forskellige scenarier for eksport af varer i betalingsbalancen.

Positions of strength are thus conditioned by a number of different and possibly overlapping conditions. For the same reason, there is also no unambiguous definition of positions of strength.

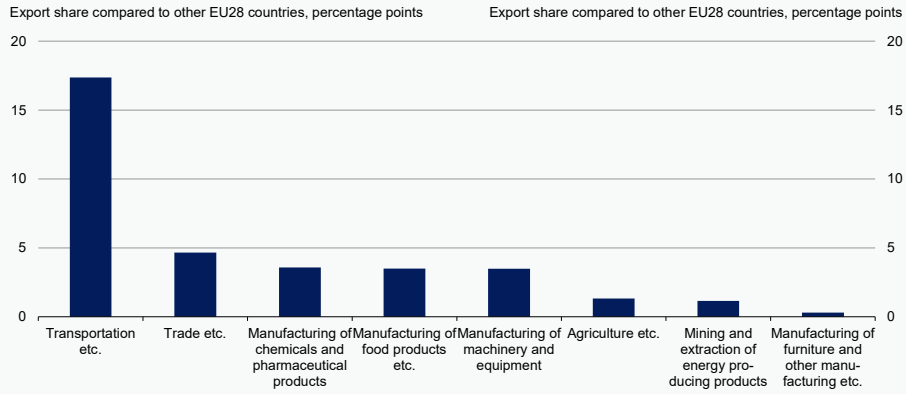
In particular, positions of strength will be reflected in trade with other countries. Countries can reap the benefits of specialising in industries where they are relatively best at producing, and in return import goods and services that can be produced better or cheaper in other countries. Strengths in international comparison are therefore naturally present in industries that are oriented towards the export markets.

Thus, positions of strength will typically show up in a relatively large export from certain industries. In this way, Danish positions of strength can be identified by comparing the composition of export from Danish industries with similar export shares in other countries. If an industry has a relatively large export compared with other countries, Denmark can be said to have a position of strength in the industry in question.

Compared with other EU28 countries, Denmark has historically had a significantly larger share of exports from the transport industry, which covers sea transport, but exports also account for a larger share in Denmark in the trade industries, manufacturing of chemical and pharmaceutical products, manufacturing of food products and manufacturing of machinery, *cf. figure 2.5*.

Figure 2.5

Industries with larger export shares in Denmark, 2015



Note: *Manufacturing of furniture and other manufacturing etc.* also includes manufacturing of toys. The industry breakdown is less detailed than in figures 2.3 and 2.4 as well as table 2.1, which may also have an impact on the ranking of the export shares in the figure. See appendix 2.2 for a more detailed breakdown of the sub-industries' export shares
Source: OECD Stat and own calculations.

The large export shares are all primarily in industries that were identified above as specialised in the Danish business structure. There are thus signs that Denmark has specialised in areas with positions of strength, calculated by export shares. In addition, manufacturing of food products appears to be an industry with a position of strength, when

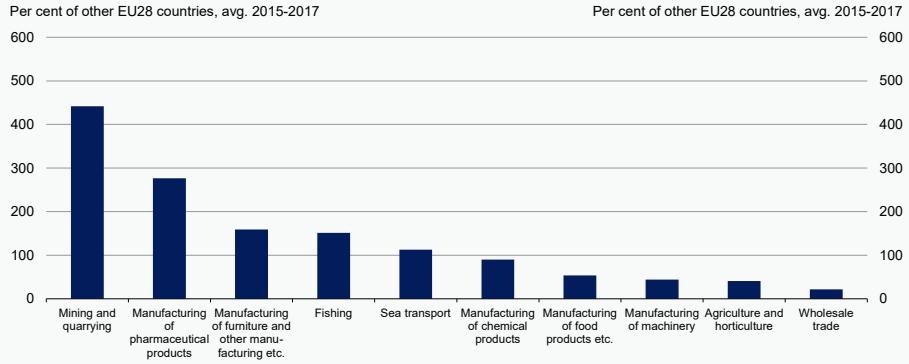
calculated by export shares, but not an industry in which Denmark is particularly specialised.

A high level of productivity relative to other countries and industries is an important prerequisite for producing goods and services that can be sold at competitive prices. A high level of productivity thus supports a position of strength.

Compared to other EU28 countries, Denmark has a particularly high value added per employed in mining and quarrying and manufacturing of pharmaceutical products, but also in, for example, manufacturing of furniture and other manufacturing as well as sea transport, *cf. figure 2.6*. There is thus a large overlap with industries that have large export shares compared to other countries, and which are further characterised by being relatively productive.

Figure 2.6

Productivity in selected industries in Denmark compared to other EU28 countries



Note: 64-industry classification. *Wholesale trade* is excl. trade with motor vehicles and motorcycles. Productivity is calculated as GVA in euros, fixed 2010 prices, chained values per employed. Productivity has been corrected for each country with industry-specific purchasing power parity indices from 2014. The calculation of productivity across countries must be interpreted with caution. If productivity is calculated in current prices instead, the picture is largely unchanged with the exception of sea transport, which appears to have lower productivity. For some industries, there are countries that are not part of the comparison due to lack of data. On average, the comparison is made against 24 countries.

Source: Olislager & Konijn (2016), Estimating purchasing power parities for the production side of GDP, Eurostat and own calculations.

A further sign of positions of strength may be the ability of Danish companies to sell quality products at a relatively high market price, the so-called *up-market* products. A high proportion of up-market products are typically found in industries that can also be identified as positions of strength through export shares and productivity, especially the manufacturing of pharmaceutical products. Also in the manufacturing of machinery (wind turbines etc.) as well as manufacturing of furniture and other manufacturing etc., Danish businesses have a good market position on quality products. On the other hand,

Danish businesses in, for example, manufacturing of food products have a relatively larger share of *mid-market* products.[1]

Relatively high export shares and high relative productivity thus point to the following Danish industries as positions of strength: agriculture, fishing, mining and quarrying, manufacturing of food products, manufacturing of pharmaceutical products, manufacturing of machinery, manufacturing of furniture and other manufacturing (including manufacturing of toys), wholesale trade and sea transport.

However, the list is not necessarily exhaustive. In this analysis, strengths are identified on the basis of current statistical industry classifications. But positions of strength can also go across the statistical classifications. This applies, for example, to life science, the robot industry and environmental technology, *cf. box 2.4*. Section 2.3 examines more closely the green sector as a position of strength.

[1] See e.g. Confederation of Danish Industry (2017): Up-market-produkter kræver udvikling. Here, a product is defined as up-market if the price of the product is more than 15 per cent higher than the median price of the corresponding product among the comparison group. Similarly, low-market products are typically defined as products where the price is 15 per cent lower than the median price. The remaining products are called mid-market.

Box 2.4

Business and technology sectors identified by the Danish Board of Business Development as positions of strength and public cluster efforts

In its 2020-2023 strategy, the Danish Board of Business Development has identified 11 business and technology sectors in which Denmark is considered to have positions of strength, and two emerging business sectors with the potential to develop into a position of strength. These are environmental technology, energy technology, food and bio resources, maritime business and logistics, life science and welfare technology, construction, design, fashion and furniture, advanced production, digital technologies, finance and fintech as well as tourism, and two emerging business and technology sectors; robot and drone technology as well as animation, games and movies.

The identification is based on a broad selection of different indicators, which measure the business areas' cohesion and performance on e.g. earning capacity and value creation, exports, employment development, growth and development activity and entrepreneurship as well as interconnection to Danish research and technology forces through patents and research collaborations etc.[1)] The identification is also supported by qualitative studies and input from experts.

Cooperation between businesses, knowledge and education environments and public actors is an important part of the driving force behind innovation and progress in the business sector. The business development system therefore consists of a number of publicly funded cluster organisations, which aim to facilitate and promote cooperation between businesses and other actors in various business and technology sectors.

On the basis of the business and technology sectors, a number of cluster organisations have been appointed to strengthen the innovative power of the Danish business sector, including in particular in relation to small and medium-sized businesses. Over time, cluster organisations may have changing focus areas, which are adapted to business development in the sector. In addition, a nationwide cluster organisation may have different focus areas in different parts of the country, which reflect variation in specialisation. For example, a nationwide energy cluster may have a particular focus on wind energy in one part of the country and on Power-to-X technology in another part of the country, all depending on the businesses' specialisation and the potential for cluster development.

Note: The Danish Board of Business Developments identification of positions of strength is based on a method which is developed on the basis of research from the Harvard University Institute of Competitiveness, which has been developed for Danish conditions by Iris Group and the Center for Regional and Tourism Research with input from Danish and Swedish researchers.
Source: Danish Board of Business Developments: Erhvervsfremme i Danmark 2020-2023, March 2020, and IRIS Group: Erhvervsmæssige styrkepositioner – kortlægning af erhvervsstyrker i dansk erhvervsliv, June 2019 (prepared for the Danish Business Authority).

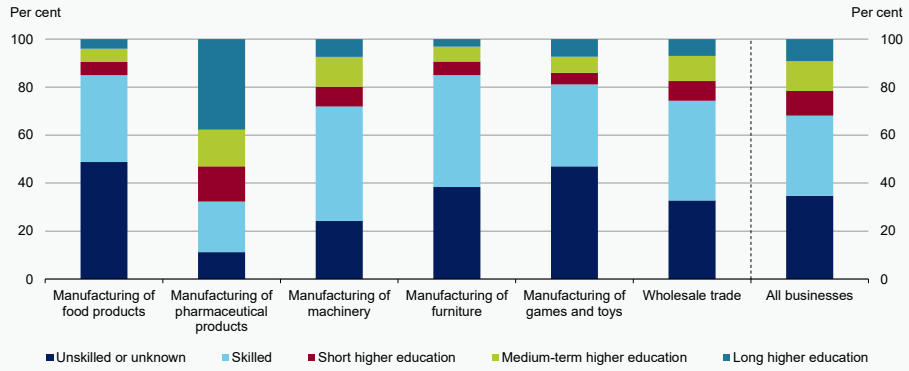
A closer examination of positions of strength

A closer examination of the educational background among employees in industries with positions of strength reveals a mixed picture.

Among the various positions of strength, manufacturing of pharmaceutical products in particular stands out with a very high proportion of highly educated workforce, where almost 40 per cent of the employees have a long higher education. For other industries with positions of strength, e.g. manufacturing of machinery and wholesale trade, the composition of education is very similar to the average among companies in general, *cf. figure 2.7*.

Figure 2.7

Highest completed education among employees in selected industries



Note: The composition of education for all businesses is calculated for private urban businesses, i.e. construction, manufacturing and the service industries excl. sea transport, financial industries and real estate. *Wholesale trade* is excl. trade with motor vehicles and motorcycles. Data covers the period 2012-2017 and only companies with at least five full-time employees in a given year are included.

Source: Own calculations on detailed data from Statistics Denmark.

Highly educated labour and many intangible assets in the form of, for example, patents and licenses have helped to make manufacturing of pharmaceutical products a position of strength. The availability of a highly educated workforce is, among other things, created in collaboration with educational institutions and helps to maintain and develop the importance of this industry.

Other positions of strength such as manufacturing of furniture, manufacturing of toys, manufacturing of food products and sea transport are very different, emphasizing that positions of strength may be the result of several different conditions and are not necessarily conditioned by the use of highly skilled labour. Manufacturing of furniture should, among other things, be seen in connection with early investment of Danish businesses in design and a strong tradition of craftsmanship, and the position of strength of agriculture may be linked to the influence of the cooperative movement.

Geographically, the industries with positions of strength within manufacturing and wholesale trade are relatively stronger represented in the area around Copenhagen and West Jutland, both in terms of employment and value added, *cf. figure 2.8 and 2.9*. On the contrary, Copenhagen in itself has a relatively small share of industries with positions of strength.

Figure 2.8

Employment in industries with positions of strength compared to private urban businesses

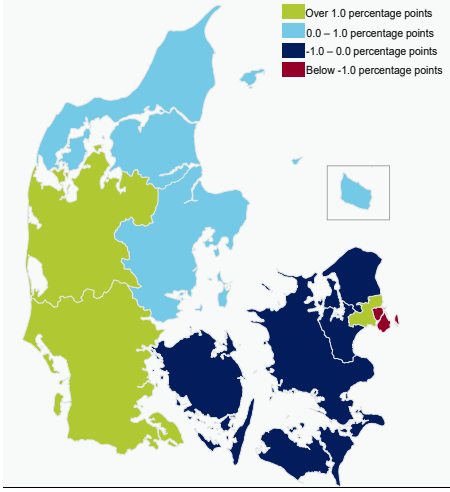
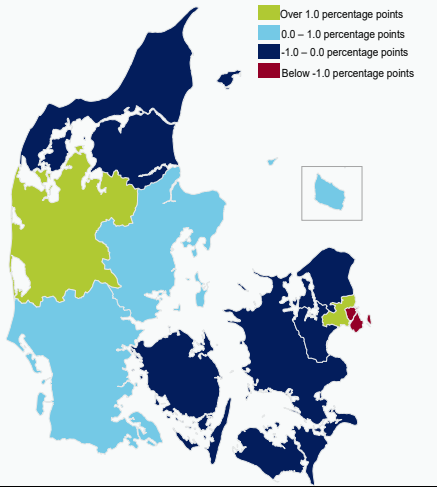


Figure 2.9

Value added in industries with positions of strength compared to private urban businesses



Note: A positive figure indicates that the region makes up a larger share within the industries with positions of strength than for all private urban businesses. The industries with positions of strength are manufacturing of food products, manufacturing of pharmaceutical products, manufacturing of machinery, manufacturing of furniture and other manufacturing etc. as well as wholesale trade. Does not include industries with positions of strength in primary industries or sea transport. See also the note to figure 2.7.

Source: Own calculations on detailed data from Statistics Denmark.

Development in positions of strength over time

Both new and existing businesses contribute to a dynamic business life, where good framework conditions are crucial for, among other things, innovation and renewal. In this context, a snapshot of specialisation and export shares does not necessarily say anything about the preconditions for maintaining or expanding positions of strength, or whether positions of strength may be in decline.

However, positions of strength imply that businesses in the industries concerned often have better access to resources or have a volume that increases the opportunities for making new investments or developing new products. Through this, they can maintain and expand positions of strength over time.

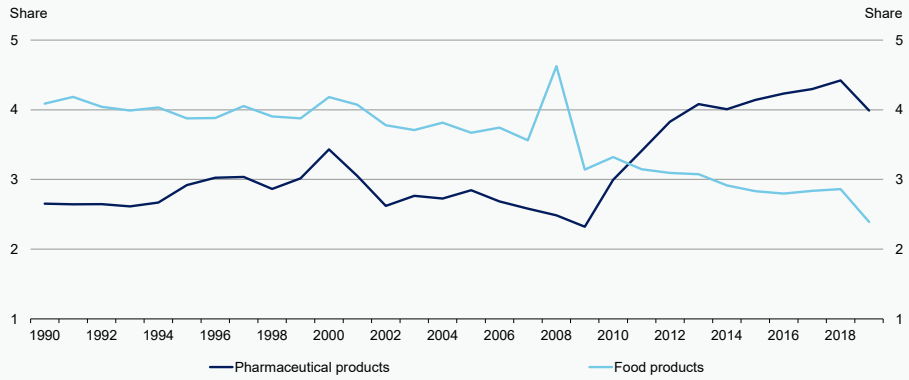
This has been the case, for example, for the Danish manufacturing of pharmaceutical products, which over a number of years has constituted a position of strength and over the past decade has grown to a very strong position, *cf. figure 2.10*.

However, positions of strength are not necessarily lasting as they can be challenged by both competition and technological advances as well as new consumption patterns. For example, the Finnish telecommunications equipment industry, led by Nokia, quickly lost

its strong position in the world market when new generations of smartphones hit the market in 2007.

Figure 2.10

Development in positions of strength related to pharmaceutical and food products



Note: The figure shows Danish exports of selected product groups as a share of total Danish exports in relation to worldwide exports of the same product group as a share of worldwide exports. A value above 1 indicates a relatively large export of the product group in question and is thus a sign of a position of strength.
Source: STAN OECD and own calculations.

Danish positions of strength also change over time. Manufacturing of food products remains a strong position, but measured by the degree of export specialisation, the industry has lost ground. This may be a consequence of the fact that other producers, who can also offer quality products and a high degree of food safety, have gained a larger market share.

Positions of strength can also be challenged by other factors. For example, the Danish position of strength in fishing may be challenged by the outcome of the negotiations on the future economic relationship between the United Kingdom and the EU, as Danish fishermen risk losing access to the British part of the North Sea.

Imprints of positions of strength in the rest of the economy

There are differences in the imprints that industries with positions of strength make in the rest of the economy. For example, some industries are heavily dependent on input from other businesses through deliveries of goods and services for use in production. Thus, increased activity in one industry may have large consequences for activity in the rest of the economy.

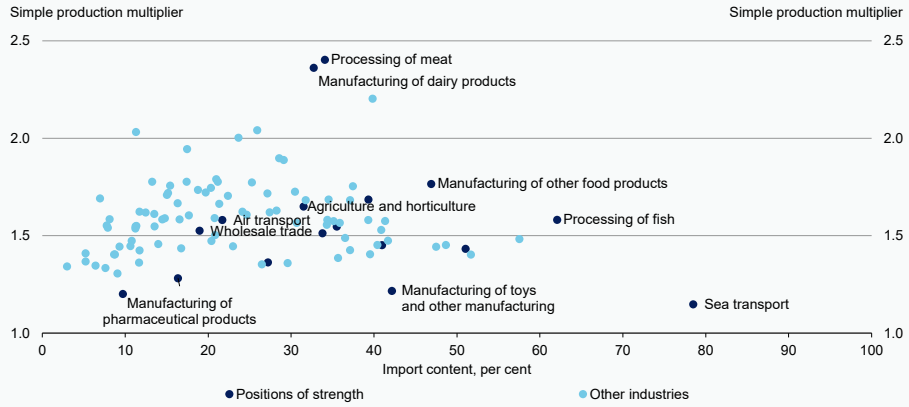
This is expressed through a high production multiplier. The production multiplier is a measure of how much extra activity is created in the economy – in the form of deliveries of goods and services from other industries – when one specific industry increases production. This form of connectedness through subcontracting is high among some industries with positions of strength such as manufacturing of dairy products and processing

and preserving of meat, *cf. figure 2.11*. Both industries especially buy agricultural raw materials, such as milk and meat.

Conversely, the industries sea transportation, manufacturing of pharmaceutical products as well as manufacturing of toys and other manufacturing stand out among Danish positions of strength (and other industries) by being relatively distanced from the rest of the Danish economy. This means that greater demand for e.g. pharmaceutical products does not create much extra activity in the Danish economy as a whole compared to if the same increase in demand instead went to e.g. processed meat products.

Figure 2.11

Import content and production multiplier, 2017



Note: *Other industries* are excl. public industries as well as real estate activities, where employment is zero. The simple production multiplier indicates how much the total production in the Danish economy increases when the industry in question has to supply one unit for final consumption. It says something about how much activity the industry creates. The import content covers both the industry's own imports (direct imports), but also imports via deliveries of goods and services from other industries (indirect imports). The indirect imports are estimated under the assumption that the imports follow the use of production.

Source: Statistics Denmark and own calculations.

The production multiplier, however, does not take into account that increased activity also leads to increased imports of goods and services for use in production. Thus, a high production multiplier in itself says nothing about how much domestic value added ultimately is created.

Sea transportation, for example, stands out by having the highest import content (almost 80 per cent) among Danish industries. This means that increased demand for shipping services does not lead to a correspondingly large increase in Danish value added. Quite the opposite is the case for manufacturing of pharmaceutical products, for example, where the import content in production is relatively low, especially in relation to the other positions of strength.

In addition, both industries are highly productive, i.e. value added per hour is high. Highly productive industries typically also have well-paid jobs. However, not all highly

productive industries employ a lot of labour. Although manufacturing of pharmaceutical products or sea transport make up only a small part of total employment, they are a great benefit for the Danish economy through increased income, including tax revenue.

2.3 The green sector is one of Denmark's strengths

Business policy, public regulations and public demand have had an impact on the business structure in Denmark. For example, Denmark has long had an ambitious energy, climate and environmental policy, which has contributed to the development of new green solutions and to a strong Danish position in the green sector. In this section, the green sector is analysed as a special position of strength.

Since the oil crises in the 1970s, there has been a focus on promoting renewable energy sources, which in addition to solar energy also include wind and biomass. At the same time, there has been government support for, among other things, the development of green technologies with a goal of achieving energy efficiency improvements.[2]

This does not necessarily mean that the political efforts were originally aimed at cultivating specific business or positions of strength. The policy was originally planned due to a concern for security of supply, derived from scarcity of fuel during the oil crises. Later, the focus shifted to green conversion, i.e. limiting the use of fossil fuels due to climate considerations.

Box 2.5

What is the green sector?

The green sector has no clear definition and may, for example, include the production of wind turbines and solar cell systems, which can help reduce greenhouse gas emissions, and the development of new technology, that can make products more energy efficient and contribute to energy savings.

In the green national accounts, the production of green goods and services is calculated according to a number of different purposes linked to environmental protection and resource saving. Environmental protection purposes may, for example, be linked to waste management and recycling. Resource-saving purposes can, for example, be the production of energy-saving heat pumps. The calculation is based on samples reported to Statistics Denmark and otherwise follows the same boundaries, definitions and classifications as the traditional national accounts, so that the production of green goods and services can be calculated by industry.

There are also calculations based on item codes identified as energy technology. These may comprise goods and technologies related to wind power (onshore and offshore), conversion of biomass to green energy, geothermal, wave power and solar energy as well as energy-saving technologies, energy management and storage, green transport solutions, cogeneration technology, heat pumps etc. Similar product codes have been identified in other green sectors such as environmental technology and in the water sector. Product codes do not necessarily provide a more accurate view of green production, as, for example, the product code "Glass fibers" can be used in relation to wind turbine blades and other products that cannot be described as green.

Source: Statistics Denmark (2013): Grønne nationalregnskaber og det grønne BNP, as well as Danish Energy Agency, Danish Energy and DI Energy (2017): Eksport af energiteknologi og -service.

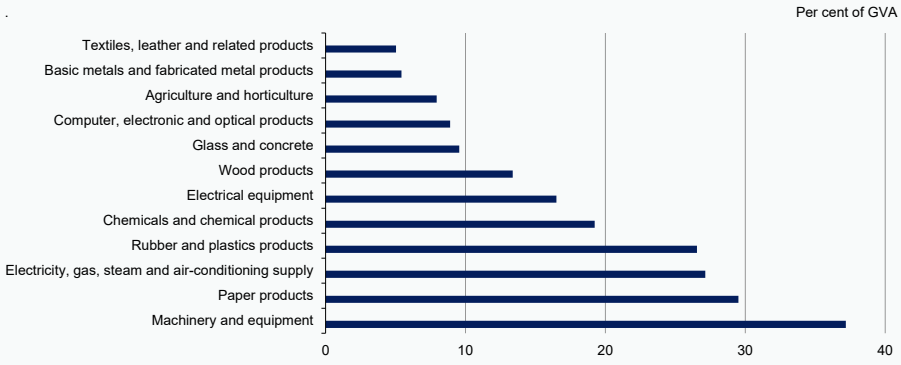
[2] See e.g. *Economic Survey, December 2019*.

Initiatives aimed at climate, environment and energy purposes have had an impact on the economy, both through the costs passed on to consumers and public finances, and through consequences for growth and employment in certain industries. In some cases, that can develop into a position of strength.

Green production does not have a narrow definition and goes across industries, *cf. box 2.5*. However, it accounts for a relatively large share in the machinery industry, where the production of wind turbines is located, and in the supply of electricity, gas and district heating as a result of green solutions linked to waste sorting, *cf. figure 2.12*.

Figure 2.12

Green share in selected sub-industries within manufacturing



Source: Statistics Denmark and own calculations.

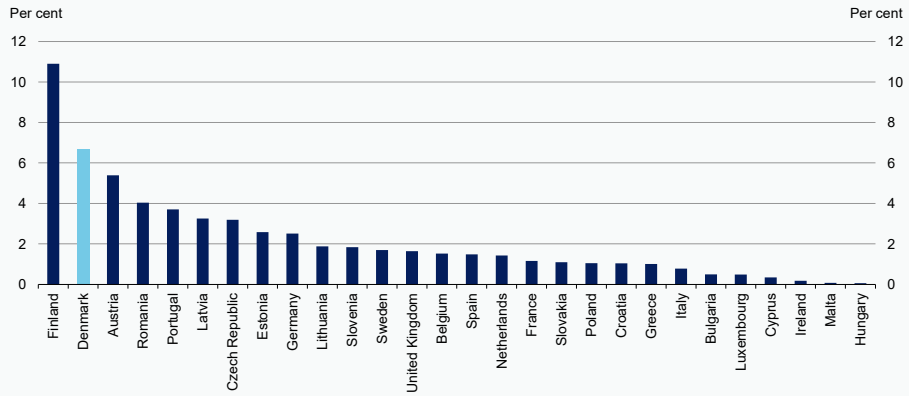
But green production does not only happen within manufacturing. Part of the green production is services, e.g. in the form of consultancy. The employment associated with green production currently amounts to approx. 75,000 persons, corresponding to about 3.5 per cent of private employment.

The energy and climate efforts have led to Denmark having a relatively large production and export of green goods and services. Exports amount to DKK 90 bn., corresponding to about 6.5 per cent of total exports, which is a relatively large share in an international comparison, *cf. figure 2.13*.

The green exports mainly comprise wind turbines and related components from the machinery production industry. This is reflected in a relatively high degree of export specialisation in the area of energy production from renewable resources, where Denmark exports a lot compared to other countries, *cf. figure 2.14*.

Figure 2.13

Green exports as a share of total exports, 2017

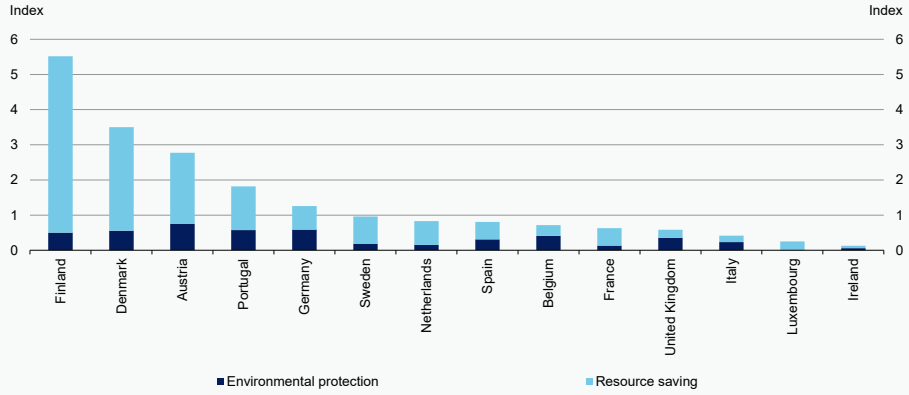


Note: There may be methodological differences in what is included in the calculations across countries, as it is up to the individual countries within the framework of the EU regulation to define what constitutes green exports.
Source: Eurostat and own calculations.

The large share of green exports, however, is also linked to reduced energy and heat consumption as well as to the environmental protection purpose of waste management and recycling, although Denmark does not stand out to the same degree here.

Figure 2.14

Green export specialisation



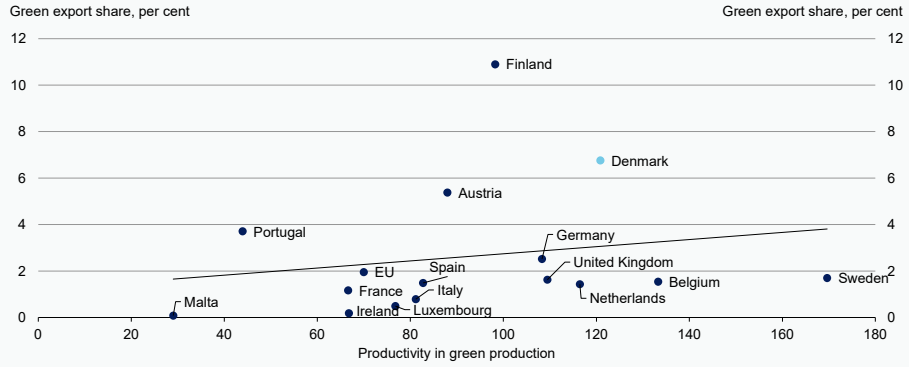
Note: The degree of export specialisation shows the relationship between a country's export share and the share for the EU15 as a whole. If the ratio is greater than one, it is an export specialisation. The degree of export specialisation is divided into contributions from environmental protection purposes and resource saving purposes, cf. box 2.5. Resource saving purposes include the production of energy from renewable sources.
Source: Eurostat and own calculations.

In other countries, other factors come into play in relation to green production. For example, Finland has a large production of bioenergy from forests, and Austria derives a large part of its electricity production from hydropower. This is reflected in export specialisation linked to production from renewable sources for the two countries (resource saving).

Denmark is not only characterised by large green exports, but also by the fact that the production of green goods and services is quite productive. Thus, both value added in relation to the use of labour and exports is somewhat greater in the green sector in comparison with other EU countries, *cf. figure 2.15*.

Figure 2.15

Green positions of strength



Note: Productivity is defined as GVA linked to green production relative to employment in the respective industries. The difference in productivity across countries may be affected by the composition of green production across industries.
Source: Eurostat and own calculations.

Denmark's green position of strength is also reflected in the proportion of Danish green patents, where Denmark, compared with a number of other countries, has the highest number of patents within green technologies measured as patent applications in relation to the population.[3]

In Denmark, the position of strength and the large green production are especially linked to manufacturing of wind turbines. In 2018, one Danish company thus had the largest production of wind turbines worldwide, *cf. figure 2.16*.

As is the case for other positions of strength, the Danish leading position within wind turbines is not necessarily permanent, and over time it may lose ground. Thus, in recent decades, a number of new players have emerged within manufacturing of wind turbines, and the Danish position of strength seems to be particularly challenged in the offshore

[3] See Danish Patent and Trademark Office (2020): Danmarks grønne styrkeposition.

area. Among other things, it is noteworthy that among the 10 largest players are five Chinese producers, who mainly produce for the growing Chinese market.

Figure 2.16

Market share of wind turbine manufacturers, 2018

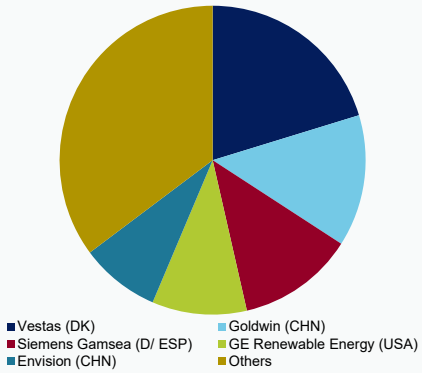
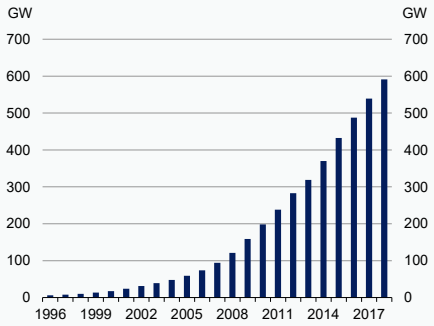


Figure 2.17

Globally installed capacity of wind energy



Source: GWEC and own calculations.

The continued expansion of the area, however, means that Danish companies have the opportunity to increase sales, even if competition has increased and Danish market shares have decreased. The globally installed capacity of wind energy has thus grown from 59 GW in 2005 to 591 GW in 2018, *cf. figure 2.17*.

At the same time, the green transition offers new business opportunities that can maintain and develop positions of strength in the green sector. This applies, for example, to solutions within energy and environmental technology, including solutions concerning heating, PtX systems, CCUS (Carbon Capture Utilization and Storage), establishment of energy islands and waste sorting.

Appendix 2.1
Industry definitions

Businesses engage in many diverse activities and offer a wide range of goods and services. For statistical purposes, however, it is necessary to group similar businesses into industries.

But it is important to keep in mind that industries are a fluid concept that tries to group businesses that have a fairly homogeneous production. In all cases, it will depend on an assessment and can never be an accurate expression of the individual businesses' production.

One reason for this is that production and demand are constantly changing, so that completely new types of businesses emerge, while others disappear. Statistics Denmark continuously adjusts the industry classification in its statistics to keep up with this development. The latest is Dansk Branchekode (DB07), which was introduced in January 2008. On that occasion, 414 industries were changed or completely new, especially in the IT and media sector, but also in the energy sector and many other services. For example, there are now statistics for web portals, satellite-based telecommunications and trade in electricity, while there are no longer separate figures for, among other things, record stores and upholsterers.

In addition, the industry description can cover new content (or lost content), and finally, businesses can change industry statistically, even if they continue to produce the same as before. An example of a statistical change of industry is businesses that were previously part of the industry *manufacturing of telephone sets and systems as well as fax machines*, but after 2007 are categorized under *repair of communication equipment*. For these businesses, there has been a statistical shift from the manufacturing industry to the culture, leisure and other services industry, despite the fact that the companies continue to carry out the same activity.

The industry classification is not perfect. For example, it does not reflect if a company has different types of activities, such as both manufacturing, servicing and a sales department. The industry classification can only place these businesses in one industry.

In general, the industry classification is more detailed for manufacturing businesses than service producers. This is in part due to the fact that the delimitation of industries is based on groups of homogeneous production, which exist with a greater degree of detail for goods than services.

DB07 contains industry codes for 737 different industries. In many statistics, however, the level of detail is often significantly lower. Thus, for example, the national accounts operate with a maximum of 117 industries.

Appendix 2.2
Export specialisation in sub-industries

Figure 2.5 shows the Danish export specialisation in relatively aggregated industries in order to be able to compare with other countries.

On Danish data, however, it is possible to take a closer look at the sub-industries in industries with Danish export specialisation. It is probable, but not necessarily given, that the sub-industry with the largest share of exports within the industry in question is also the explanation for the Danish export specialisation.

For most industries, there is one sub-industry that accounts for the majority of exports. This applies, for example, to transport etc., where sea transport accounts for most of the exports, while exports from the trade industry largely consists of wholesale trade, *cf. annex table 2.1.*

Exceptions are e.g. manufacturing of machinery, where two thirds of exports come from manufacture of motors, wind turbines and pumps, but manufacture of other machines also accounts for a relatively large share. Exports from manufacturing of food products are also more widely distributed among sub-industries.

Appendix Table 2.1

The industry's exports in 2015 by sub-industries (per cent)

Transport etc.	**Trade etc.**	**Manufacture of chemicals and pharmaceutical products**	**Manufacture of food products etc.**
Sea transport (79.3)	Wholesale trade (97.4)	Manufacturing of basic pharmaceutical products (73.9)	Processing and preserving of meat etc. (33.8)
Freight and pipe transport (6.9)	Sale of motor vehicles (1.4)	Manufacturing of paints, varnishes etc. (15.2)	Manufacturing of dairy products (25.4)
Air transport (6.6)	Maintenance and repair of motor vehicles etc. (0.7)	Manufacture of basic chemicals (10.9)	Manufacturing of other food products (17.2)
Warehousing and support activities for transportation (6.3)	Retail trade (0.5)		Processing and preserving of fish etc. (11.9)
Postal and courier activities (0.5)			Manufacturing of beverages (5.9)
Regional and long-distance trains (0.3)			Manufacturing of grain mill products, bakeries etc. (4.3)
Local trains, buses and taxis etc. (0.1)			Manufacture of tobacco products (1.4)
Manufacture of machinery	**Agriculture etc.**	**Mining and quarrying (oil and gas)**	**Manufacture of furniture and other manufacturing**
Manufacturing of motors, wind turbines and pumps (67.5)	Agriculture and horticulture (83.0)	Extraction of crude petroleum and natural gas (100.0)	Manufacturing of games and toys and other manufacturing (52.5)
Manufacturing of other machines (32.5)	Fishing and aquaculture (15.5)		Manufacturing of furniture (29.5)
	Forestry (1.6)		Manufacturing of medical instruments etc. (12.2)
			Repair and installation of machinery and equipment (5.9)

Note: Sub-industries are according to the 117 industry classification.
Source: Statistics Denmark and own calculations.

Annex Tables

Table B.1

Demand, income and production

	2020	2021	2022	2020	2021	2022	2020	2021	2022
	DKK bn.			Volume, per cent			Prices, per cent		
Private consumption	1,038	1,104	1,145	-4.0	5.1	2.0	0.5	1.2	1.6
Public consumption[1)]	586	598	606	2.5	1.4	-0.3	2.7	0.6	1.6
Public investments[2)]	81	87	91	4.5	6.4	3.6	0.7	1.6	1.1
Residential investment	121	128	129	4.7	4.3	0.2	0.9	0.7	1.3
Fixed business investment	311	309	333	-4.0	-2.1	7.0	0.6	1.3	0.8
Inventory investment[3)]	6	7	7	-0.3	0.0	0.0			
Total final domestic demand	2,148	2,237	2,315	-1.8	3.1	2.0	1.1	1.0	1.5
Exports of goods and services	1,231	1,297	1,398	-10.0	4.1	6.7	0.5	1.2	1.0
Total demand	3,379	3,534	3,713	-5.0	3.5	3.7	0.9	1.1	1.3
Imports of goods and services	1,096	1,159	1,234	-7.4	4.8	5.1	-0.6	0.9	1.3
GDP	2,283	2,375	2,479	-3.8	2.8	3.1	1.6	1.2	1.3
Taxes on products, net	290	300	309						
Gross value added	1,994	2,075	2,170	-4.1	2.7	3.2	2.0	1.3	1.4
- Non-farm private sector[4)]	1,368	1,429	1,510	-4.6	3.1	4.2	1.4	1.4	1.4
Gross national income	2,348	2,432	2,537						

Note: The division into volume and price components is made based on a fixed price calculation in the previous year's prices. The figures state the annual percentage change.
1) The change in volume for public consumption is calculated using the input method. In 2020-2022 growth in public consumption using the input method is assumed to equal growth using the output method.
2) Public investments exclude general government net purchases of buildings, and therefore the figures will deviate from public investments in table B.7.
3) The volume figures reflect changes in inventories compared to GDP.
4) Non-farm private sector consists of manufacturing, construction and private services excl. shipping.
Source: Statistics Denmark and own calculations.

Table B.2

Interest rates, oil price and exchange rates and external assumptions

Interest rate, per cent		2018	2019	2020	2021	2022
USA	Federal Funds Target Rate	1.9	2.3	0.5	0.3	0,3
	3-month LIBOR	2.3	2.3	0.7	0.2	0,3
	10-year government bond	2.9	2.1	0.9	1.0	1,2
Euro area	Main Refinancing Operations Rate	0.0	0.0	0.0	0.0	0,0
	3-month EURIBOR	-0.3	-0.4	-0.4	-0.6	-0,6
	10-year government bond (Germany)	0.5	-0.2	-0.5	-0.6	-0,5
Denmark	Certificates of deposit rate	-0.7	-0.7	-0.6	-0.6	-0,6
	3-month CIBOR	-0.3	-0.4	-0.2	-0.3	-0,3
	1-year adjustable mortgage rate	-0.5	-0.6	-0.5	-0.5	-0,4
	10-year government bond	0.5	-0.2	-0.4	-0.4	-0,4
	30-year mortgage interest rate	2.1	1.6	1.1	1.0	1,1
	Average interest rate	0.7	0.5	0.3	0.2	0,2
Oil price						
Dollar per barrel		71.1	64.4	41.6	48.4	50.9
DKK per barrel		448.7	429.2	272.7	300.9	316.5
Exchange rate						
DKK per 100 dollar		631.5	666.9	654.7	621.3	621.3
DKK per 100 euro		745.3	746.6	745.4	744.3	744.3
Effective Krone Rate Index (1980=100)		103.6	102.9	103.9	104.6	104.6
		Real growth rate, per cent				
External assumptions						
Export market growth[1)], per cent		3.9	1.3	-9.7	4.8	5.6
Trade weighted GDP-growth[2)], per cent		2.4	1.7	-5.4	2.7	3.9

1) Calculated as the weighted average of import growth in Denmark's 36 most important trade partners. The weights reflect the countries' share of Danish manufacturing exports in 2019.

2) Calculated as the weighted average of the GDP-growth in Denmark's 36 most important trade partners. The weights reflect the countries share of Danish export of goods and services in 2019.

Note: The projections are based on data through December 7, 2020. Annual averages are own calculations. For monetary policy interest rates, the interest rate estimate is based on an assessment of the latest announcements by central banks and market expectations. For money market rates and the yield on 10-year government bonds, estimates are based on market expectations, which are based on the prices of swap interest rates. For the 1-year and 30-year mortgage rate bonds, data is Finance Denmark's bond rates and estimates are based on spreads to the 3-month money market rate and the 10-year government bond rate respectively. Estimates for exchange rates are calculated technically by assuming that the exchange rate for the remaining forecast period corresponds to the average during the last ten days prior to the estimation. Estimates for the oil price are based on the International Energy Agency, *World Energy Outlook*, October 2020, as well as futures prices.

Source: Macrobond, Nordea Markets, The International Energy Agency, European Commission (European Economic Forecast Autumn 2020*)* and own calculations.

Table B.3

Population and labour market

	2018	2019	2020	2021	2022
1,000 persons					
Total population	5,794	5,814	5,834	5,856	5,877
- Labour force	3,071	3,105	3,111	3,118	3,137
- Total employment	2,966	3,003	2,979	2,995	3,021
- Ordinary employment[1)]	2,881	2,914	2,889	2,899	2,920
- Subsidised employment[2)]	85	89	90	96	101
- Gross unemployment (incl. activation)[3)]	108	104	133	126	119
- Net unemployment	87	86	120	105	101
- Outside the labour force	2,722	2,710	2,723	2,737	2,739
- Recipients of unemployment benefits and cash benefits in activation outside the labour force	103	97	95	98	100
- Disability pensioners outside the labour force	178	183	193	207	214
- Voluntary early retirement	49	46	48	50	33
- Persons under 15 years	959	955	951	946	942
- Pensioners outside the labour force	989	989	980	969	957
- Others outside the labour force	444	440	456	467	492

Note: Recipients of education assistance benefit, the special education benefit and other temporary benefits (kontantydelse) are included as cash benefit recipients.

1) Calculated as the difference between employment as determined in the national accounts and subsidised employment, which is based on data from AMFORA. Due to differences in the definition of employment in the two sources, the data is subject to a degree of uncertainty.

2) Includes persons in employment with wage subsidies (including flexi-jobs and sheltered jobs).

3) The number of unemployment benefit recipients in activation and labour-market-ready cash benefit recipients includes persons in subsidised employment.

Source: Statistics Denmark and own calculations.

Table B.4

Employment by industry

	2018	2019	2020	2021	2022
1,000 persons					
Employment, total	2,966	3,003	2,979	2,995	3,021
- Service industries	1,551	1,571	1,549	1,559	1,578
- Construction	189	193	195	197	199
- Manufacturing	305	312	306	308	312
- Agriculture	71	71	70	69	68
- Public sector	824	829	831	833	835

Note: The industry division is based on the division in the ADAM model, which are not identical to the division in the national accounts.
Source: Statistics Denmark and own calculations.

Table B.5

Unemployment

	2018	2019	2020	2021	2022
1,000 persons					
Gross unemployment	108	104	133	126	119
- per cent of workforce	3.5	3.4	4.3	4.0	3.8
Net unemployment	87	86	120	105	101
LFS unemployment (per cent)	5.3	5.1	5.8	5.8	5.4

Note: Differences in the definition of the labour force between the Ministry of Finance and Statistics Denmark mean that the gross unemployment rate in per cent of the workforce is estimated at a lower level.
Source: Statistics Denmark and own calculations.

Table B.6

Benefit recipients etc.

	2018	2019	2020	2021	2022
1,000 persons					
Unemployment benefits (excl. activation)[1]	69	71	100	88	83
Cash benefits (excl. activation)	87	80	90	83	86
Recipients of unemployment benefits and cash benefits in activation[2]	34	34	24	37	36
Holiday benefit	5	4	4	3	3
Disability pensioners[3]	199	203	214	229	237
Resource assessment benefit	37	38	35	35	35
Post-employment benefit	49	46	48	50	33
Early retirement	0	0	0	0	24
Flexi-job scheme benefit	3	3	3	3	3
Revalidation benefit[4]	4	3	3	3	2
Sickness benefit[5]	57	59	69	63	59
Maternity leave	50	50	52	49	50
Benefit for unemployed	15	16	18	18	18
Integration benefit[6]	17	13	13	12	11
Total	**627**	**620**	**672**	**673**	**681**
Student grant (SU)	328	322	316	318	317
Total, incl. SU	**954**	**942**	**988**	**990**	**998**
Pensioners	1,147	1,145	1,134	1,122	1,109
Total, incl. SU and pensioners	**2,102**	**2,087**	**2,122**	**2,112**	**2,107**
Subsidised employment[7]	85	89	90	96	101
Total, incl. SU, pensioners and subsidised employment	**2,186**	**2,176**	**2,212**	**2,208**	**2,208**

Note: Recipients of education assistance benefit, the special education benefit and other temporary benefits (kontantydelse) are included as cash benefit recipients.

1) The data does not cover persons in subsidized employment and thereby differs from other register-based data and table B.3. Furthermore, both labour market ready and non-labour market ready cash benefit recipients are included in the group of recipients of unemployment benefits and cash benefits in activation schemes.

2) Disability pension and old age pension include pensioners living abroad as well as pensioners, who are employed.

3) Excl. persons on revalidation with wage support.

4) The number of sickness benefit recipients does not reflect the total absence due to illness. It includes the part of the sickness absence, which is not covered by the employer. Specifically, this covers sickness absences longer than 30 days as well as sickness among the unemployed.

5) Excl. recipients of integration benefits with wage subsidies.

6) Includes persons in employment with wage subsidies (including flexi-jobs and sheltered jobs).

Source: Statistics Denmark, DREAM and own calculations

Table B.7

Gross investments

	2019	2018	2019	2020	2021	2022
	DKK bn.	Real growth rate, per cent				
Gross fixed capital formation	513	4.8	2.8	-0.4	0.8	4.6
divided into group:						
- Residential investments	115	2.9	6.2	4.7	4.3	0.2
- Public investments[1)]	75	1.8	-3.6	7.0	6.7	2.7
- Total business investments	322	6.2	3.3	-4.0	-2.1	7.0
- Construction investment	94	4.2	16.0	1.9	-5.0	2.5
- Tangible and intangible investments	228	6.9	-1.3	-6.4	-0.8	9.0

1) Public investments include public net purchase of buildings, why the figure deviates from public investments in table B.1.

Source: Statistics Denmark and own calculations.

Table B.8

Balance of payments

	2018	2019	2020	2021	2022
DKK bn.					
Goods exports	754	805	769	794	827
Goods imports	693	701	671	699	728
Goods balance, total	61	104	97	94	99
Service exports	515	557	462	503	572
Service imports	443	489	424	460	506
Service balance, total	71	68	38	43	65
Balance of goods and services	132	172	135	138	164
- Per cent of GDP	5.9	7.4	5.9	5.8	6.6
Investment income from abroad, net	71	79	72	65	67
Wage income from abroad, net	-13	-13	-12	-12	-13
EU payments, net	-14	-14	-16	-13	-13
Other current transfers from abroad, net	-18	-17	-18	-18	-18
Net transfers from abroad, total	26	35	27	22	23
Current account, total	158	207	162	160	187
- Per cent of GDP	7.0	8.9	7.1	6.7	7.5
Net assets against other countries	1,446	1,832	1,281	1,649	2,069
- Per cent of GDP	64.2	78.5	56.1	69.4	83.5

Source: Statistics Denmark and own calculations.

Table B.9

Exports and imports

	2019	2018	2019	2020	2021	2022
	DKK bn.	Real growth rate, per cent				
Exports						
Goods, total	805	2.4	6.9	-5.0	2.2	3.2
- Agricultural goods etc.	125	-1.1	4.1	-0.5	1.0	1.5
- Industrial goods (excl. ships etc.)	610	3.8	8.5	-4.5	2.4	3.3
- Other goods[1)]	70	-1.7	-0.7	-17.4	2.8	5.8
Services, total	557	4.5	2.3	-17.3	7.3	12.3
- Sea transport	240	1.8	4.5	-11.5	4.4	7.5
- Other services	255	7.7	0.1	-12.5	3.6	10.0
Total	1,362	3.2	5.0	-10.0	4.1	6.7
Imports						
Goods, total	701	3.6	1.5	-3.1	3.0	2.8
- Agricultural goods etc.	87	3.7	1.9	-0.3	1.5	1.0
- Industrial goods (excl. ships etc.)	450	2.6	3.7	-1.5	1.5	3.0
- Other goods[2)]	164	6.4	-4.1	-9.0	9.0	3.3
Services, total	489	6.6	3.9	-13.5	7.7	8.6
Total	1,190	4.8	2.4	-7.4	4.8	5.1
Memo		Nominal growth rate, per cent				
Export of basic goods[3)]	765	2.2	8.0	-2.8	3.1	3.8
		Change, per cent				
Export prices						
Goods, total		0.4	-0.1	0.6	1.0	0.9
Services, total		3.8	5.8	0.3	1.5	1.2
Total		1.7	2.2	0.5	1.2	1.0
Import prices						
Goods, total		2.7	-0.3	-1.2	1.1	1.2
Services, total		4.1	6.1	0.2	0.6	1.5
Total		3.2	2.3	-0.6	0.9	1.3

1) Raw materials, energy and ships etc.
2) Raw materials, energy, cars and ships etc.
3) Export of basic goods consists of export of goods excl. energy, ships and airplanes.
Source: Statistics Denmark and own calculations.

Table B.10

Private consumption

	2019	2018	2019	2020	2021	2022
	DKK bn.	Real growth rate, per cent				
Total consumption	1,076	2.7	1.4	-4.0	5.1	2.0
Retail trade goods	352	4.2	1.5	2.6	0.7	1.0
- Food, drinks and tobacco	158	2.4	0.7	1.4	1.0	0.5
- Other goods	193	5.6	2.1	3.6	0.5	1.5
Purchase of vehicles	44	8.8	4.2	-6.0	10.8	1.9
Electricity, fuels and gas	50	1.0	-1.9	-4.9	2.0	-0.8
Gasoline and similar	27	2.2	1.1	-8.5	8.0	1.0
Housing	239	0.6	2.1	1.5	1.6	1.6
Other services	383	2.4	1.5	-14.5	12.8	4.8
Total consumption	45	1.7	0.2	-67.5	90.0	60.0

Source: Statistics Denmark and own calculations.

Table B.11

Net lending by sectors

	2018	2019	2020	2021	2022
DKK bn.					
Private sector, total	143	120	243	191	226
- Households	45	2	97	64	97
- Corporations	98	118	146	127	129
- Non-financial corporations	65	90	105	109	121
- Financial corporations	33	28	41	18	8
General government	16	88	-81	-31	-39
Total	158	209	163	160	187

Note: Net lending of general government corresponds to the general government budget balance. The total (except for typically small net capital transfers from abroad) corresponds to the current account balance, *cf. table B.8.*

Source: Statistics Denmark and own calculations

Table B.12

Gross value added (GVA)

	2019	2018	2019	2020	2021	2022
	Share, per cent	Real growth rate, per cent				
Total GVA	100	2.1	2.9	-4.1	2.7	3.2
Public sector	20	0.2	1.9	-0.5	1.4	-0.1
Private sector	80	2.6	3.2	-5.0	3.1	4.0
Private sector excl. mining and quarrying	79	2.6	3.4	-4.8	3.1	4.0
Non-farm private sector[1)]	69	2.8	3.6	-4.6	3.1	4.2

1) Non-farm private sector consists of manufacturing, construction and private services excl. shipping.
Source: Statistics Denmark and own calculations.

Table B.13

Hourly productivity in selected industries

	Avg. 1995-2019	2018	2019	2020	2021	2022
Real growth rate, per cent						
Total	1.2	2.2	1.7	-1.2	0.3	2.1
Public sector	0.7	-0.0	1.2	0.9	-0.5	-0.4
Private sector	1.3	2.8	1.7	-1.6	0.4	2.6
Private sector excl. mining and quarrying	1.5	2.8	1.9	-1.4	0.4	2.5
Non-farm private sector[1)]	1.3	3.2	2.1	-1.1	0.2	2.7

Note: Hourly productivity is defined as gross value added in constant prices relative to the total hours worked.
1) Non-farm private sector consists of manufacturing, construction and private services excl. shipping.
Source: Statistics Denmark and own calculations.

Table B.14

Contributions to growth in households' real disposable income[1)]

	2018	2019	2020	2021	2022
Real growth rate, per cent					
Disposable income	2.4	2.0	2.4	1.3	2.5
Contribution, percentage points					
Compensation of employees[3)]	2.7	2.0	1.6	1.0	1.9
Social benefits	0.0	0.5	1.6	-0.1	0.0
Income taxes	-0.9	-1.3	-0.5	-0.5	-0.1
Net interest income	0.0	0.2	0.0	0.1	0.0
Dividend etc.[4)]	0.4	0.3	-1.3	0.6	0.5
Pension contribution[5)]	0.3	-1.3	0.4	0.1	-0.1
Payment from pension schemes[5)]	0.2	0.3	-0.1	0.2	0.2
Others[6)]	-0.2	1.3	0.7	-0.1	0.3

1) The households in the Economic Survey include the NPISH-sector.
2) Disposable income in 2020 includes taxation of disbursement of frozen holiday pay.
3) Covering only employees residing in Denmark.
4) Incl. dividends from investment funds.
5) Occupational pensions etc. (but not individual pension schemes in banks, etc.)
6) Including self-employed.

Source: Statistics Denmark and own calculations.

Table B.15

Households' net lending[1)]

	2018	2019	2020	2021	2022
DKK bn.					
Disposable gross income[2)]	1,102	1,134	1,166	1,196	1,246
Private consumption	1,053	1,076	1,038	1,104	1,145
Gross investment[3)]	107	115	120	124	127
Net capital transfers[4)]	10	2	3	9	23
Direct net lending	-48	-56	11	-23	-2
Adjustment for the change in pension entitlements[5)]	93	58	86	87	99
Net lending[6)]	45	2	97	64	97
Per cent of disposable gross income					
Direct net lending	-4.3	-4.9	1.0	-1.9	-0.2
Net lending	4.1	0.2	8.3	5.4	7.8

1) The households in the Economic Survey include the NPISH-sector.
2) Disposable income in 2020 includes taxation of disbursement of frozen holiday pay.
3) Households' gross investments include investments in owner-occupied housing and investments in buildings and materials by sole proprietors.
4) Net capital transfers in 2021-2022 include refunded property taxes to owner-occupied property owners and reserves for stimulus policies etc. on the Budget proposal for 2021.
5) Net payment to and return (excl. tax on pension yield) on household capital in life insurance companies and pension funds.
6) Household acquisition (net) of financial assets (incl. shares) in other sectors.

Source: Statistics Denmark and own calculations.

Table B.16

Real estate market and construction

Per cent	2018	2019	2020	2021	2022
Increase in the price of traded single-family houses[1)]	3.8	3.0	3.3	2.9	2.3
Housing gross investment (real growth)	2.9	6.2	4.7	4.3	0.2

1) Adjusted for developments in the volume of housing sales.

Source: Statistics Denmark and own calculations.

Table B.17

Labour wage ratio, wage increases and computational preconditions

	2018	2019	2020	2021	2022
Labour wage ratio, per cent					
Private sector	57.0	56.1	58.2	57.4	56.7
The entire economy	63.1	62.2	64.8	63.6	62.9
Wage increase, per cent					
Private sector					
- Hourly earnings (excl. nuisance bonus)	2.3	2.5	2.2	2.4	2.6
Public sector					
- Hourly earnings (excl. nuisance bonus)[1)]	1.5	2.2	-	-	-
- Budgetary impact	1.6	1.8	2.5	1.5	1.9
Wage adjustment rate, per cent[2)]	2.0	2.0	2.0	2.0	2.0

Note: The labour income ratio is calculated as aggregated labour income relative to the GVA (gross value added) and adjusted for the number of self-employed. The hourly wage increases in the private sector are published by The Confederation of Danish Employers. The hourly wage increases in the public sector are a weighted average of wage indices for the state, the municipalities and the counties, all reported by Statistics Denmark. No estimates are made on the development in public sector hourly earnings. The budgetary impact is based on the contractually agreed wage increases including contributions from the adjustment scheme (regulerings-ordningen) but excluding any residual increases. The hourly wage increases for the private and public sectors are not comparable.

1) The estimated rate of increase in hourly earnings in the public sector in 2018 is affected by a technically relatively low wage increase in Q2 2018 compared to the agreed wage increases. This is because the wage increase agreed by April 1 2018 has been implemented retroactively in the wages for June 2018, while Statistics Denmark calculates Q2 wages on the basis of information about May.

2) The wage adjustment rate stated is the announced wage adjustment rate for 2018-2021 and an estimate for 2022.

Source: The Confederation of Danish Employers, Statistics Denmark, and own calculations.

Table B.18

Price developments and explanatory factors

	2018	2019	2020	2021	2022
Change, per cent					
Net price index	0.9	0.9	0.3	1.6	1.8
Tariffs and housing benefits, contribution	0.0	-0.1	0.2	-0.4	-0.1
Consumer price index	0.8	0.8	0.5	1.2	1.6
HICP	0.7	0.7	0.5	1.2	1.6

Note: The contribution from tariffs and housing benefits is computed as the difference between the consumer price inflation and the net price inflation. Changes in the prices of taxed goods such as energy can therefore influence the contribution from taxes, even though the tax level remains unchanged.

Source: Statistics Denmark and own calculations.

Table B.19

Public finances

	2018	2019	2020	2021	2022
DKK bn.					
Public consumption	546.7	556.8	586.3	597.8	605.8
Income transfers[1)]	356.4	365.2	385.3	389.0	395.5
Investments	75.5	76.7	80.7	87.2	91.3
Interest expenditures	18.0	17.3	21.3	15.6	12.3
Subsidies	38.1	38.2	86.3	48.4	40.8
Other expenditures[2)]	80.8	71.1	91.3	83.0	97.3
Total expenditure[3)]	**1,115.6**	**1,125.3**	**1,251.2**	**1,221.1**	**1,243.1**
Personal income taxes, etc.[4)]	464.8	483.5	503.7	508.8	517.0
Labour market contributions	98.3	100.3	106.4	107.4	109.1
Pension yield taxation	13.8	63.4	19.5	20.6	12.8
Corporate taxes	61.5	71.3	54.3	57.5	62.6
VAT	217.2	221.2	219.0	226.8	234.6
Other duties	146.9	145.0	141.5	146.6	147.7
Other taxes[5)]	5.6	4.5	3.5	2.2	1.0
Interest revenues	26.3	24.3	27.6	23.5	20.6
Other revenues[6)]	100.1	103.2	98.3	99.7	103.0
Tariffs etc. to the EU	-3.2	-3.1	-3.1	-3.1	-3.2
Total revenue[7)]	**1,131.1**	**1,213.6**	**1,170.5**	**1,190.0**	**1,205.0**
General government budget balance	**15.6**	**88.3**	**-80.6**	**-31.1**	**-38.1**
Net interest expenditure	-8.3	-7.0	-6.3	-7.9	-8.3
General government primary balance[8)]	7.3	81.3	-86.9	-38.9	-46.4

1) Income transfers exclude other regular transfers to households such as mileage allowance and index supplement.
2) Other expenditures include capital transfers, transfers to the Faroe Islands and Greenland and the Danish EU-contributions.
3) Total expenditure differs from Statistics Denmark's equivalent. Total expenditure is calculated from a definition of the total expenditure, where all sub-elements of public consumption – e.g. imputed expenditure from depreciation and revenue from sales of goods and services – are defined as expenditures.
4) Personal income taxes include withholding taxes, tax on imputed income from owner-occupied dwellings, specific taxes from households, tax on estates of deceased persons and other personal taxes.
5) Other taxes include media license and mandatory pension payments for civil servants.
6) Other revenues include profits from public enterprises, current and capital transfers from other domestic sectors and the EU, and imputed (calculated) revenues such as contributions to civil servants' earned pension. Moreover, revenues from oil and gas explorations in the North Sea, duty on pipelines, and the hydrocarbon tax are included in other revenues.
7) Total revenue differs from Statistics Denmark's equivalent, where the sales of public goods and services are counted as revenue and not – like here – counted as a part of the total expenditures. Furthermore, total revenue here includes a revenue-counterpart to the imputed depreciation expenditures included in public consumption.
8) The general government primary balance states the balance of the general government finances before net interest expenditures.

Source: Statistics Denmark and own calculations.

Table B.20

Taxes and tax burden

	2018	2019	2020	2021	2022
DKK bn.					
Indirect taxes	**360.8**	**363.1**	**357.4**	**370.3**	**379.1**
- VAT	217.2	221.2	219.0	226.8	234.6
- Registration tax	20.6	20.3	17.3	18.2	18.2
- Excise duties	72.2	69.1	69.3	69.7	69.2
- Energy (incl. PSO)	42.6	38.4	38.4	37.6	36.7
- Environmental	3.6	3.3	3.3	3.4	3.4
- Tobacco and spirits etc.	11.0	11.6	11.9	12.3	12.4
- Others	15.1	15.9	15.6	16.5	16.8
- Property taxes	29.6	30.6	31.6	32.6	33.3
- Motor vehicle tax paid by businesses	3.7	3.7	3.7	3.8	3.8
- Other indirect taxes	17.6	18.2	16.6	19.2	19.9
Direct taxes	**638.1**	**715.8**	**680.4**	**690.2**	**695.9**
- Withholding taxes[1)]	444.1	461.6	482.2	487.4	495.0
- State tax	156.6	162.5	173.9	174.6	176.5
- Bottom-bracket tax	126.9	143.1	151.4	153.2	155.7
- Top-bracket tax	17.5	17.1	20.1	19.0	18.2
- Health contributions	9.7	0.0	0.0	0.0	0.0
- Limited tax liability	2.4	2.3	2.4	2.4	2.5
- Total municipal tax	239.3	247.1	262.9	265.0	269.0
- Property value tax	14.5	14.6	14.9	15.6	15.8
- Other withholding taxes[2)]	33.7	37.4	30.5	32.1	33.7
- Pension yield tax	13.8	63.4	19.5	20.6	12.8
- Corporate tax	61.5	71.3	54.3	57.5	62.6
- Other personal taxes	8.2	8.2	8.3	8.4	8.7
- Media license	4.5	3.5	2.5	1.2	0.0
- Motor vehicle tax paid by households	7.6	7.5	7.3	7.6	7.8
- Labour market contributions	98.3	100.3	106.4	107.4	109.1
Social security contributions[3)]	1.1	1.0	1.0	1.0	1.0
Capital taxes	4.8	6.2	5.9	5.3	5.5
Customs and import duties (collected by the EU)	3.2	3.1	3.1	3.1	3.2
Total taxes	**1,008.0**	**1,089.2**	**1,047.8**	**1,070.0**	**1,084.6**
GDP	2,253.6	2,335.0	2,283.2	2,374.7	2,478.8
Total taxes, share of GDP	**44.7**	**46.6**	**45.9**	**45.1**	**43.8**

1) For 2017-2019, the distribution of withholding taxes to the state and municipalities is from Statistics Denmark. For 2020-2022, an estimate is used based on the Ministry of Finance's tax base forecast.
2) Includes equity income tax, tax on estates of deceased persons and revenue from the Danish business scheme etc.
3) Includes mandatory pension payments for civil servants in public enterprise etc.
Source: Statistics Denmark and own calculations.

Table B.21

Development in the tax base for municipalities

	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
	DKK bn.					Per cent				
August 2016	-	-	-	-	-		-	-	-	-
December 2016	989.3	-	-	-	-	3.4	-	-	-	-
May 2017	988.0	-	-	-	-	3.5	-	-	-	-
August 2017	982.8	-	-	-	-	2.9	-	-	-	-
December 2017	990.9	1,010.5	-	-	-	3.1	2.0	-	-	-
May 2018	981.2	1,005.3	-	-	-	2.7	2.5	-	-	-
August 2018	979.9	1,008.0	-	-	-	2.2	2.9	-	-	-
December 2018	979.2	1,013.2	1,045.9	-	-	1.9	3.5	3.2	-	-
August 2019	966.7	1,005.7	1,033.8	-	-	0.6	4.0	2.8	-	-
December 2019	966.1	1,006.3	1,035.9	1,073.4	-	0.6	4.2	2.9	3.6	-
May 2020	965.7	1,008.8	997.6	1,042.7	-	0.5	4.5	-1.1	4.5	-
August 2020	965.7	1,010.7	1,054.6	1,044.9	-	0.5	4.7	4.3	-0.9	-
December 2020	965.7	1,007.3	1,063.6	1,070.7	1,087.2	0.5	4.3	5.6	0.7	1.5

Note: Rows show the time of the budgeting of the municipal tax base in billion kroner and growth rates. The columns show the tax base in the year concerned.
Source: Statistics Denmark and own calculations.

Table B.22

Income transfers

	2018	2019	2020	2021	2022
DKK bn.					
Unemployment benefits (excl. activation)	14.0	14.5	21.0	19.1	18.1
Cash benefits[1] (excl. activation)	24.0	24.4	27.9	28.6	30.4
Vacation allowance	0.8	0.7	0.8	0.6	0.7
Anticipatory pensions[2]	40.2	41.9	44.3	48.0	50.2
Resource rehabilitation allowance	6.5	6.8	6.3	6.3	6.4
Early retirement benefit	9.0	8.2	8.4	8.6	6.0
Rehabilitation benefit	0.9	0.8	0.7	0.6	0.5
Sickness benefit	11.4	11.9	13.9	13.0	12.3
Maternity pay	10.9	11.1	11.9	11.4	11.7
Rent benefit	14.8	15.1	15.6	15.6	15.7
Child and youth benefit	14.6	14.7	14.8	14.8	14.9
Other transfers[3]	22.4	21.7	23.7	24.0	27.9
Student grants (SU)	20.7	20.7	20.9	21.1	21.4
Public pension scheme[4]	136.6	142.5	144.4	146.0	147.3
Other pension schemes[5]	29.6	30.2	30.8	31.3	32.0
Total[6]	**356.4**	**365.2**	**385.3**	**389.0**	**395.5**
Total, excl. public and other pensions	**190.2**	**192.5**	**210.1**	**211.7**	**216.3**
Total, excl. education grants, public pensions and other pensions	**169.5**	**171.8**	**189.2**	**190.7**	**194.8**

1) Taxable and non-taxable benefits incl. the integration benefit.
2) Incl. early retirement benefits to retired citizens in foreign countries.
3) Activation benefits, dependent child allowance, subsidy for childcare, unemployment benefits, special education benefit, green check and pay scheme for holders of flexi-jobs etc.
4) Incl. differentiated allowances and heating allowance for pensioners. Incl. pension schemes for citizens in foreign countries.
5) Civil servants in public enterprises and part-time early retirement scheme etc.
6) Income transfers exclude other regular transfers to households such as mileage allowance and index supplement.

Source: Statistics Denmark and own calculations

Table B.23

Key figures estimated at different times

	Dec. 2018	Aug. 2019	Dec. 2019	May 2020	Aug. 2020	Dec. 2020
2019						
GDP (real growth rate, per cent)	1.7	1.7	2.0	2.4	2.3	2.8
Gross unemployment (1.000 persons)	103	103	104	104	104	104
Consumer prices (change, per cent)	1.5	1.0	0.8	0.8	0.8	0.8
Balance of payments (DKK bn.)[1)]	128	141	178	183	181	207
Actual budget balance (DKK bn.)	-2	44	59	85	88	88
2020						
GDP (real growth rate, per cent)	1.6	1.6	1.5	-5.3	-4.5	-3.8
Gross unemployment (1.000 persons)	99	101	105	146	147	133
Consumer prices (change, per cent)	1.8	1.4	1.2	0.2	0.3	0.5
Balance of payments (DKK bn.)[1)]	122	136	171	130	125	162
Actual budget balance (DKK bn.)	-3	10	-6	-160	-88	-81
2021						
GDP (real growth rate, per cent)	-	-	1.4	4.0	4.2	2.8
Gross unemployment (1.000 persons)	-	-	108	138	138	126
Consumer prices (change, per cent)	-	-	1.6	1.2	1.2	1.2
Balance of payments (DKK bn.)[1)]	-	-	168	162	133	160
Actual budget balance (DKK bn.)	-	-	-5	-43	-56	-31
2022						
GDP (real growth rate, per cent)	-	-	-	-	-	3.1
Gross unemployment (1.000 persons)	-	-	-	-	-	119
Consumer prices (change, per cent)	-	-	-	-	-	1.6
Balance of payments (DKK bn.)[1)]	-	-	-	-	-	187
Actual budget balance (DKK bn.)	-	-	-	-	-	-39

1) The current account balance.
Source: Statistics Denmark and own calculations