



Ministry of Economic Affairs

Economic Survey

August 2023



Economic Survey, August 2023

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1. Summary

1.1 Current economic conditions

Large parts of the Danish economy have slowed during the past 18 months. Domestic demand has declined, whereas exports has sustained economic activity, *cf. figure 1.1*. However, developments through the first half of 2023 suggest that the slowdown in the Danish economy will be fairly mild. Thus, the expectation is that the Danish economy will continue to grow this year and next year, but at a slower pace than in the last two years.

The expectation of continued growth should be seen, among other things, in the context of higher household consumption on the back of lower inflation and improved consumer confidence. Increased optimism is also reflected in the housing market, where the number of sales and prices have risen in recent months despite higher interest rates. Business confidence has also increased since last fall, partly due to an improvement in retailers' revenue expectations. The picture is cloudier in the manufacturing sector, where the pharmaceutical industry continues to increase production, while other manufacturing industries have been more affected by the international economic slowdown.

Figure 1.1 Slowdown in domestic demand

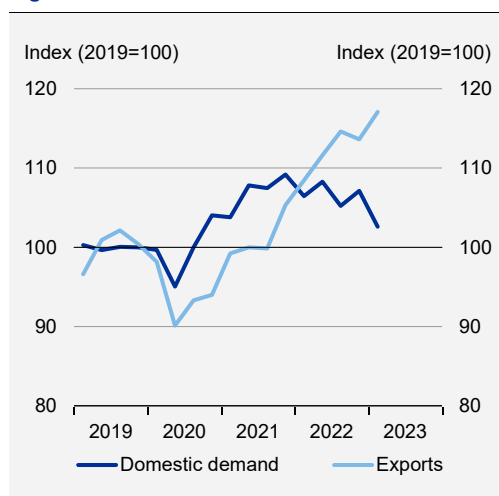
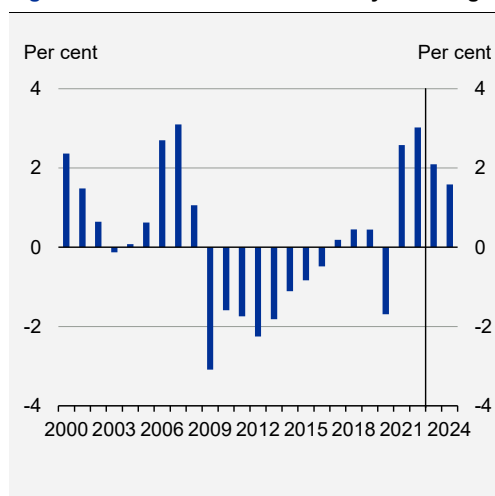


Figure 1.2 Pressure on the economy is easing



Note: *Domestic demand* in figure 1.1 consists of investment, private and public consumption. Figure 1.2 shows the output gap as a percentage of structural GVA excluding mining and quarrying.

Source: Statistics Denmark and own calculations.

The labour market is robust with continued growth in employment. However, the slowdown in parts of the economy is expected to impact employment with a delay, partly because the growth in the pharmaceutical industry has greater effect on value added than on employment. A sign of an emerging turnaround in the labour market can be seen in the unemployment rate, which has been on a slight upward trend over the past year from a very low level.

Growth expectations have been revised up since the latest assessment in the Economic Survey, May 2023, as key indicators for employment and activity as a whole continue to indicate an improvement and because inflation has eased more than expected. However, the projected GDP growth rate of 1.2 per cent this year and 1.4 per cent next year is lower than the underlying structural growth rate, which means that the output gap will narrow but is set to remain positive, *cf. figure 1.2*. Thus, the main scenario is that the Danish economy will experience a soft landing, with reduced pressures and no overheating in the labour market. This also implies an expectation that a price-wage spiral, where price and wage increases become mutually reinforcing, will not occur.

Easing inflationary pressure and consumption growth

Inflation has slowed noticeably since October last year and stood at 3.1 per cent in July, *cf. figure 1.3*. Inflation is no longer at an extraordinarily high level compared to previous periods of elevated inflation. The decrease in inflation is mainly due to lower energy prices than a year ago and masks the fact that there are still relatively large price increases in services of more than 5 per cent. The increases in the prices of services contribute to some sluggishness in core inflation - i.e. price developments excluding energy and unprocessed food - which is expected to decline only gradually, partly because higher wage increases will sustain the increases in the prices of services. Against this background, a full normalisation of inflation is not expected to occur until after the forecast period, i.e. after 2024.

Figure 1.3 Significant decrease in inflation

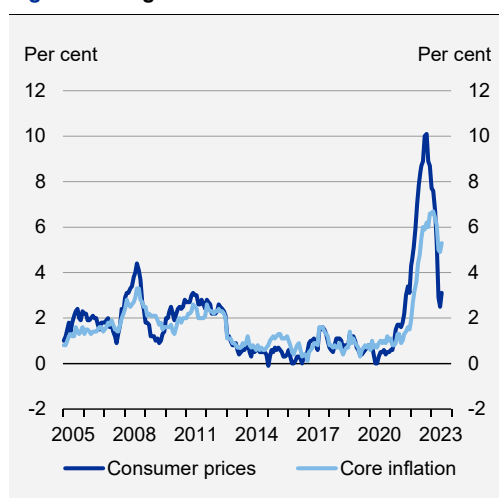
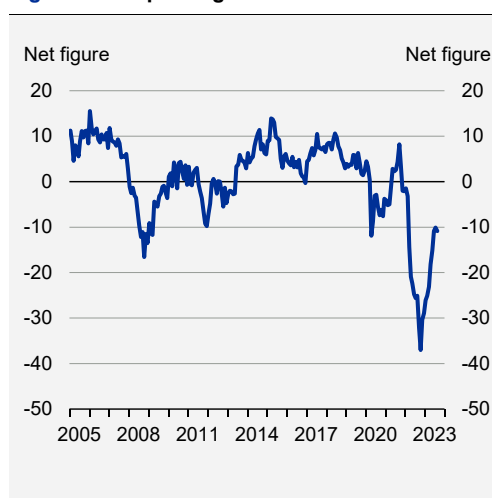


Figure 1.4 Improving consumer confidence



Note: Core inflation in figure 1.3 measures the development in consumer prices excluding the direct contribution from energy and unprocessed food.

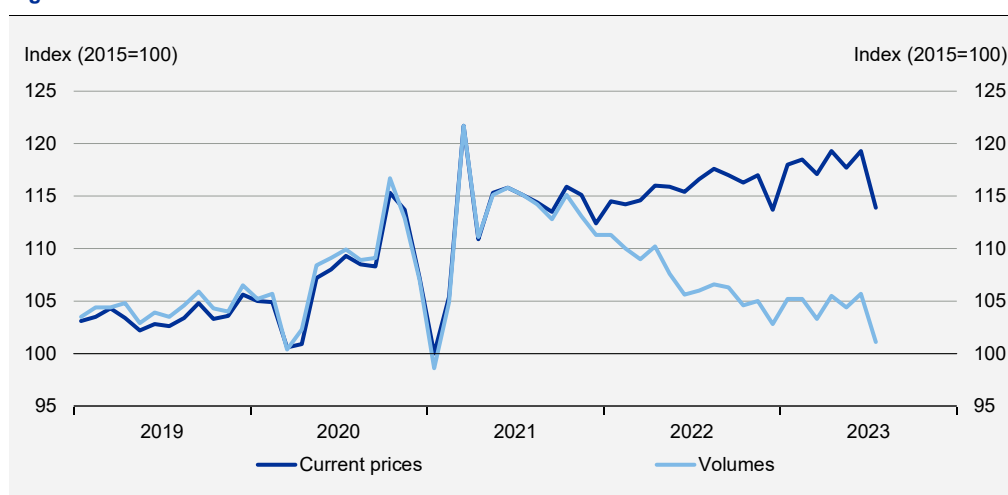
Source: Statistics Denmark and own calculations.

The decline in inflation is reflected in household expectations, measured by the consumer confidence indicator, which has increased from a historic low last autumn and are now closer to the neutral level, *cf. figure 1.4*. The improvement in expectations applies to both consumers' assessment of their own finances and the country's economic situation - especially regarding the expectation of the situation one year from now as compared to today.

As inflation has fallen and consumer confidence has risen, households have increased their consumption. According to the national accounts, private consumption in volume terms increased in the 1st quarter of this year after declining in all of the quarters of last year. Data for retail trade turnover, which is a subset of total private consumption, show continued growth in the 2nd quarter of 2023. However, there was a decline in July after a positive trend in the first half of the year, cf. figure 1.5.

In nominal terms, there was also an increase in private consumption last year, but price developments meant that consumers got less for their money. However, household incomes rose even more than consumer spending, partly due to the continued increase in employment. This suggests that households have held back spending somewhat and saved for consumption at a later date. Savings also increased temporarily during the corona pandemic due to more limited consumption opportunities, but savings and the payment of frozen holiday allowances were subsequently largely used for consumption.

Figure 1.5 Retail sales volumes more stable towards summer



Note: Retail sales are adjusted for normal seasonal fluctuations and the effect of trading days. Retail sales in volumes are also adjusted for price developments based on composite price indices from the consumer price index.
Source: Statistics Denmark and own calculations.

Higher wage increases are expected to significantly increase household purchasing power over the next few years. In continuation of the centrally agreed wage increases in the collective bargaining for the private sector in the spring (OK23), local wage negotiations at individual companies have resulted in the highest wage increases in 15 years, according to the Confederation of Danish Industry¹. In addition, there is the possibility of wage drift, which is the part of the wage development that is not based on collective agreements and can, for example, reflect recruitment challenges. Not all local negotiations have been concluded yet, and not all workplaces offer the same high wage increases, partly due to large differences in the demand situation. Overall, the negotiation results so far - together with the expected development in inflation -

¹ Cf. Confederation of Danish Industry (2023): Local salary negotiations are going well - read what others have given. 12.6.2023.

provide the basis for an expectation that real wages next year will be back at the level in 2020-2021.

The increase in private wages will also have a delayed impact on public wages and transfer incomes through the wage rate adjustment system. In 2023 and 2024, household incomes will also be supported by the repayment of property taxes, expected to be around DKK 13.5 bn., to homeowners who have paid tax on overvalued assessments since 2011.

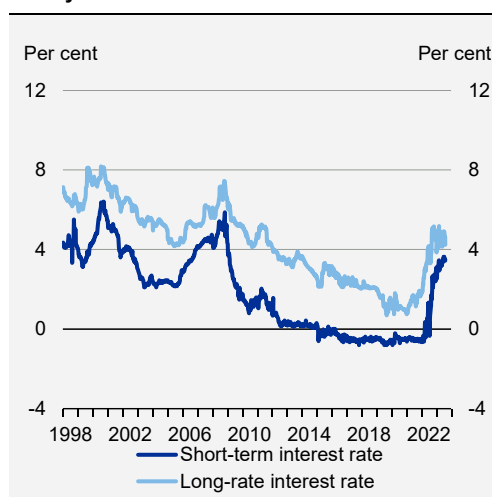
In addition to income growth, households' desire to spend is also supported by the stabilisation of the housing market, which has seen an increase in sales and house prices in recent months despite rising interest rates, *cf. figures 1.6 and 1.7*. Since the beginning of 2022, house prices have fallen by around 6 per cent. Based on recent developments, it is estimated that a large part of the adjustment following the increase in market interest rates and the relatively large house price increases during the COVID-19 pandemic has now taken place, *cf. chapter 2*. However, the delayed pass-through of the higher interest rates will continue to affect housing prices, and a decline in new construction is also expected. The impact on borrowers' interest payments will also be delayed depending on the type of loan.

Figure 1.6 Home sales and prices show signs of recovery



Note: Seasonally adjusted figures for home sales and prices in figure 1.6.
Source: Statistics Denmark and own calculations.

Figure 1.7 Mortgage rates have increased significantly



High production levels in the pharmaceutical industry support the activity

The improvement in household purchasing power is, among other things, reflected in the turnover expectations of retail businesses, *cf. figure 1.8*. The positive expectations for turnover also apply to service businesses. However, expectations have not quite increased to the same degree as within retail.

There are more mixed signals in other industries. Since May 2022, the business tendency survey for the construction industry has indicated expectations of declining turnover, which mirrors the slowdown in construction activity. Within the manufacturing industry, the share of companies reporting a lack of demand has increased by a relatively large amount in the past

year to a level that is high in a historical perspective. The lack of demand for manufacturing goods should be seen in connection with an international slowdown, which has led to a decline in a large share of goods exports at the end of 2022 and into 2023.² Almost 60 percent of the manufacturing production is sold abroad, so this industry is particularly affected by the economic conditions in other countries.

The Danish food industry and pharmaceutical industries have historically been less sensitive to cyclical fluctuations abroad. The pharmaceutical industry, led by Novo Nordisk, has had a particularly strong growth in production over the past two years. The strength in the pharmaceutical industry is also seen in the fact that only a few pharmaceutical companies experience a lack of demand, which is in contrast to the overall manufacturing sector, *cf. figure 1.9*.

Figure 1.8 Jump in the turnover expectations of retail businesses

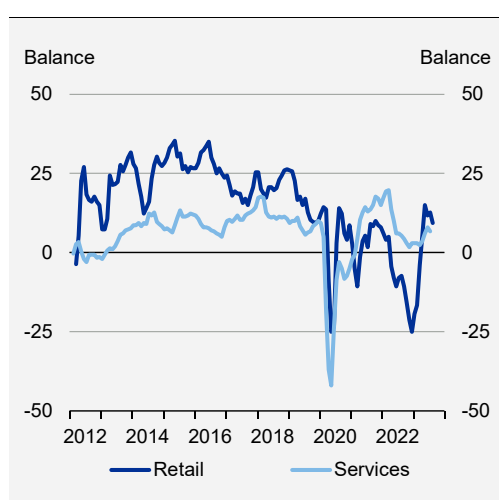
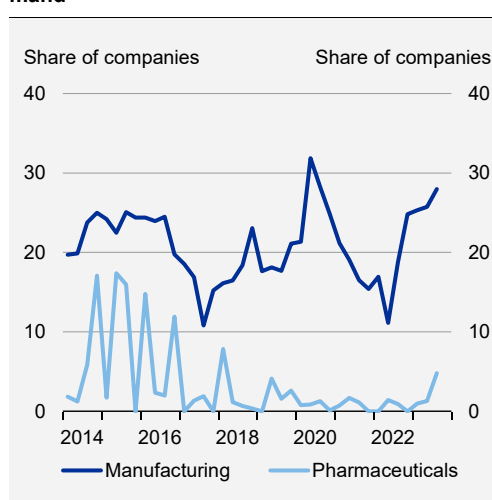


Figure 1.9 Manufacturing – excluding pharmaceuticals – increasingly experience a lack of demand

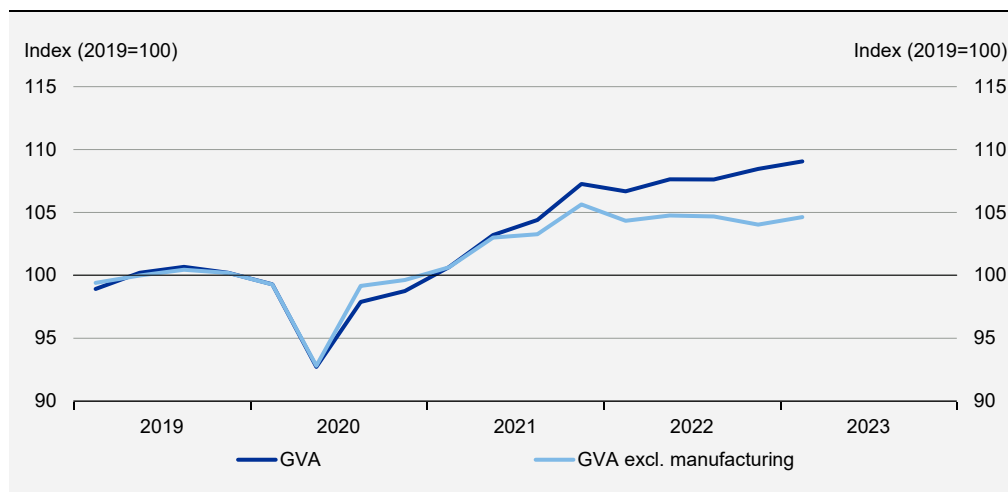


Note: Balance in figure 1.8 shows the share of companies that expect an increasing turnover in the next three months subtracted by the share of companies that expects declines in turnover. The series are shown as three-month moving averages. Figure 1.9 shows the share of companies, which reply that a lack of demand constitutes a limit to production. Own seasonal correction.

Source: Statistics Denmark and own calculations.

The pharmaceutical industry has been the main driver behind the increased production in the manufacturing sector as a whole despite headwinds from abroad. The importance for the Danish economy is also reflected by the fact that there would have been a standstill in the total value added of the economy since the end of 2021 without the strong growth of the manufacturing sector, *cf. figure 1.10*. The Danish economy can be seen as being bifurcated, and the growth in GDP over the past 1½ years thus does not reflect general growth in the across the economy. At the same time, the pharmaceutical industry is less integrated with the rest of the Danish economy, which reduces the industry's impact on domestic activity, *cf. chapter 4*.

² Total exports (in current prices) is supported by sales of chemicals and chemical products and goods, which do not cross the Danish border. Both are related to the activities of the pharmaceutical industry, *cf. chapter 6*.

Figure 1.10 Stagnation in value added without the strong growth in manufacturing

Note: Seasonally adjusted GVA in chained prices.
Source: Statistics Denmark and own calculations.

The stagnation in the rest of the economy and the decline in the remaining manufacturing sector, i.e. when pharmaceuticals is disregarded, implies that many companies probably have a need to adapt their capacity and workforce. Businesses have already reduced their investments in machinery and equipment due to increasing financing costs and waning sales. Additionally, the value added per hour worked has decreased over the past two years, excluding manufacturing. The drop in hourly productivity indicates a need to adjust employment in a number of industries. Such an adjustment usually takes place with some delay, as companies are often reluctant to lay off workers during the initial phase of a slowdown. When demand decreases, the initial adjustment in the labour market often occurs through the average working hours, either by reduced overtime work or through actual cuts in working hours.

The pharmaceutical industry, which has buoyed total value creation, does not play a correspondingly large role in total employment, as part of the production happens abroad, *cf. box 1.2, Economic Survey, May 2023*. The pharmaceutical industry's share of total employment was almost 1 percent last year, while the industry's share of total value creation was around 4 percent.³

As a whole, employment has continued increasing in 2023. However, the growth in wage-earning employment has slowed down in pace, and when measured in terms of the number of full-time employees, the reduced momentum is more pronounced. Based on the slowdown in parts of the economy, employment development is expected to gradually reverse. An initial sign of a turning point in the labor market is unemployment, which has shown a slight upward trend since the spring of 2022. Meanwhile, a decreasing average working time for wage earners indicates a decreasing demand for labour. The gradual turnaround in the labour market comes after a period in which many companies have faced significant recruitment challenges.

³ The pharmaceutical industry's share of total GVA in current prices for 2022 is based on a special extraction of unpublished figures from Statistics Denmark, which are subject to greater uncertainty than published figures.

The simultaneous increase in both employment and unemployment in the past 1½ years should be viewed in the context of an expansion of the labor force due to the influx of international labour. Since the end of 2019, almost 2/3 of the increase in the number of wage earners has occurred through an increased influx of international labour due to more foreigners in Denmark (including cross-border commuters), *cf. chapter 5*. This trend may also reflect that companies have increasingly had difficulties recruiting employees with specific skills among the remaining unemployed.

Can the strong growth in the Danish economy continue?

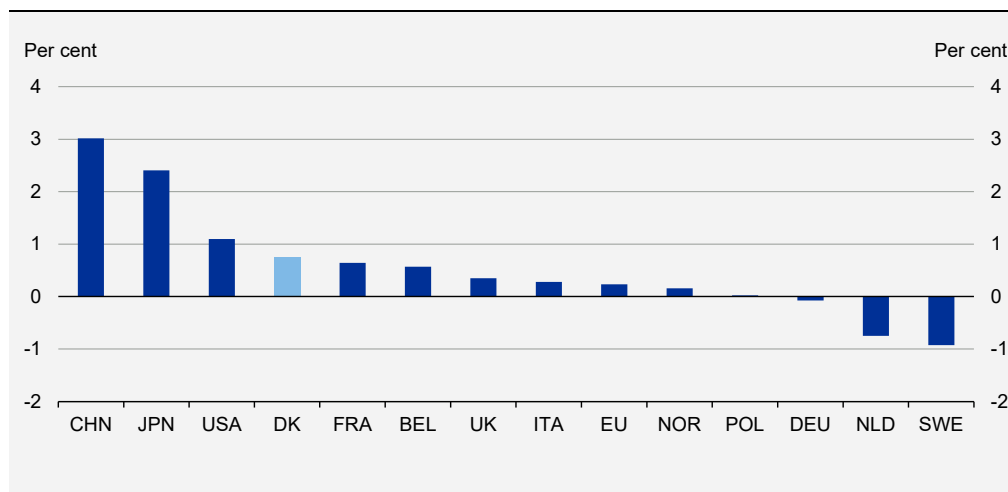
The Danish economy has been in an upswing with increasing activity and employment since 2013, when fluctuations during the corona pandemic are disregarded. The progress has been enabled by reforms and the influx of international labour, which has increased production capacity. Thus, it has been possible to increase activity significantly, without creating unsustainable pressure on the labor market.

However, even with the structural gains, GDP in 2022 as a whole is estimated to have been around 3 per cent above the level that is normally compatible with a stable price and wage development. In periods with strong economic growth, there has historically been a tendency to build up various vulnerabilities, for example excessive debt build-up among households and companies. Currently, however, there are no significant signs of such imbalances. However, the weak productivity trend in recent years indicates a need for adjustment.

Economic progress will not be able to continue at the same pace, as it will add to the labour market pressures at a time when wage increases are already on the way up. This would potentially affect the competitiveness of some companies. In addition, the high level of economic activity is in itself a reason to expect lower growth.

A number of other factors will also pull in the direction of more subdued growth. The ECB started tightening monetary policy just over a year ago, so the monetary policy interest rate is now the highest in 22 years. Because of the fixed exchange rate policy, monetary policy has also been tightened in Denmark. The resulting higher market interest rates, together with tighter credit conditions, have a dampening effect on the economy.

Overall, the Danish economy grew by just under 0.8 per cent in the first half of 2023 – albeit during a period when many countries, including important trading partners, experienced stagnation, *cf. figure 1.11*. The weakness in central export markets has already to some extent been reflected in Danish exports. Sales on export market are normally an important driving force for a small open economy like Denmark. However, this year and next year only moderate export market growth of 0.8 per cent and 3.0 per cent is projected.

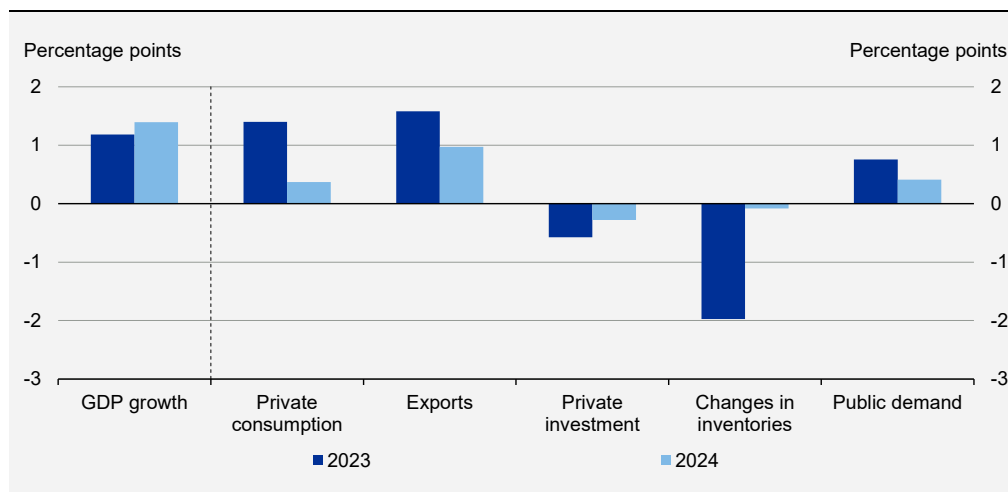
Figure 1.11 GDP stagnated in many countries in the first half of 2023

Note: The figure shows the percentage change in real GDP, seasonally adjusted, from the fourth quarter of 2022 to the second quarter of 2023. The GDP-indicator from the second quarter of 2023 has been used. For Norway, growth in mainland GDP is shown.

Source: Macrobond, OECD and own calculations.

The level of activity of the Danish pharmaceutical industry will continue to have a major impact on GDP and exports in particular. The pharmaceuticals industry, led by Novo Nordisk, has sustained a high level of production in the first half of 2023, and in June a new provisional high was set. Given this backdrop, the pharmaceutical industry is set to make a significant contribution to growth this year. The forecast assumes that the contribution to GDP growth from the pharmaceutical industry will moderate in 2024, in view of the high level of capacity pressure in the industry following the strong expansion of recent years, and the fact that it takes time to expand the capacity. However, there is great uncertainty about the short-run path of the level of activity in the pharmaceutical industry.

The expected turnaround in the labour market will also slow economic momentum, as falling employment and rising unemployment will dampen household income growth. GDP growth is expected to moderate from 2.7 per cent last year to 1.2 per cent this year and 1.4 per cent next year, *cf. figure 1.12*. Adjusted for import content, growth is largely driven by private consumption this year – resulting from the increase in real wages and normalisation of the composition household consumption of goods to services in the wake of high consumption of goods in 2021 and 2022. At the same time, it is expected that that exports will also make a noticeable contribution in 2023 and 2024, this year primarily as a result of the pharmaceutical industry, while the expected contribution in 2024 should be seen in the light of an expected improvement in the economic situation abroad. The expected reopening of the Tyra field in the North Sea in the winter of 2023-2024 will also, in isolation, add approximately ½ percentage point to growth next year, including through increased exports.

Figure 1.12 Increased private consumption and exports are expected to drive GDP-growth this year

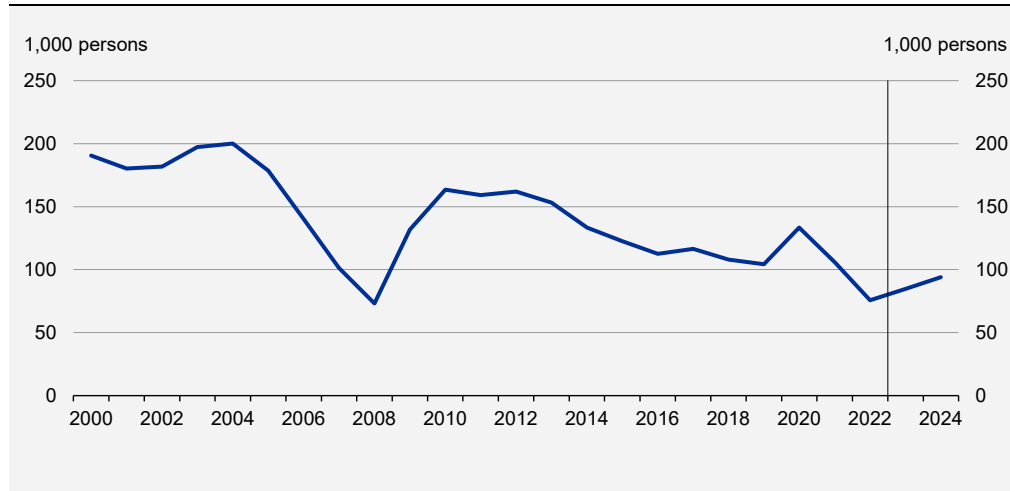
Note: Growth contributions have been adjusted for the import content. *Private investment* is excl. changes in inventories and acquisitions less disposals of valuables.

Source: Statistics Denmark and own calculations.

Private investment is expected to slow growth in both years, due to a decline in both housing and business investment. In addition, there is a significant negative contribution this year, which relates to a special situation regarding inventory investments. The opposite is true for public demand, which is expected to add to growth, especially this year, with growth in both public consumption and public investment.

The projected underlying development, i.e. disregarding the one-off factor in the form of the reopening of the Tyra field in the North Sea, is for lower growth in 2024 compared to this year.

The forecast is based on an expectation that the labour market will gradually slow. This means that total employment at annual level will increase by approximately 32,000 persons in 2023, while a smaller decrease in employment is expected in 2024 of just under 13,000 persons. At the same time, unemployment is expected to rise slightly, but will remain at a low level seen from a historical perspective, *cf. figure 1.13*.

Figure 1.13 Unemployment is expected to increase somewhat during the forecast horizon

Note: Unemployment is the number of gross unemployed.
Source: Statistics Denmark and own calculations.

The expected gradual slowdown in economic growth is an expression of a soft landing, where the economic boom is gradually dampened without turning into an economic slowdown or recession, *cf. box 1.1*.

Box 1.1 What defines a soft landing and how can economic policy help?

A soft landing in a business cycle is a gradual dampening of growth that brings the economy back to roughly normal capacity utilization from a high level of activity – in contrast to a harder setback that brings activity significantly below the structural level and thus into a recession. A soft landing can be facilitated by an appropriate economic policy that is aligned with the economic situation, although the precise dosage and timing may be difficult. Both monetary policy and fiscal policy can help dampen activity and inflationary pressure in an economy. In Denmark, the fixed exchange rate policy forms the basis of monetary policy, and this immediately places greater demands on fiscal policy to stabilise the economy if the cyclical development in the Danish economy deviates from that of the euro area.

However, the nature of cyclical reversals also depends on whether imbalances have arisen in the economy during periods of economic upturn, which can lead to a deeper setback and a longer subsequent recovery. In this context, structural reforms can help to ensure a balanced development and reduce the risk of an overheating of the labor market, i.e. as a result of labour shortages. So-called macroprudential policies, which can e.g. take the form of tighter guidelines for lending on the housing market, can help ensure that housing price developments do not get out of step with the rest of the economy.

An example of a soft landing is the turnaround after the long-term recovery in the 1990s, when GDP was only briefly below the structural level (i.e. where the output gap was negative), *cf. figure a*. A number of labor market reforms that reduced structural unemployment, among other things, reinforced the recovery.

Examples of hard landings are the setbacks after the overheating in the 1980s and again around the mid-2000s. In connection with these economic setbacks, employment fell significantly and over several years. Prior to the reversals, significant imbalances had arisen, including in the housing market. The subsequent recovery of the imbalances helped make these setbacks deeper and longer lasting.

The recovery since 2013, disregarding the temporary decline during the corona pandemic, has been enhanced by, among other things, structural reforms and the influx of international labor, which has increased the workforce, *cf. figure b*. At the same time, no significant economic imbalances have developed, among other things because macroprudential policies have helped to counteract unsustainable increases in indebtedness.

Figure a Employment declines during periods when the output gap is negative and substantial

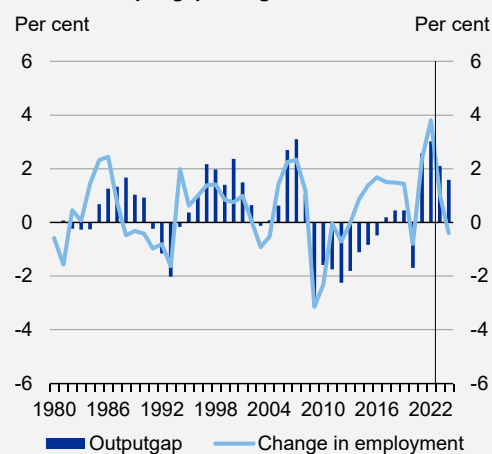
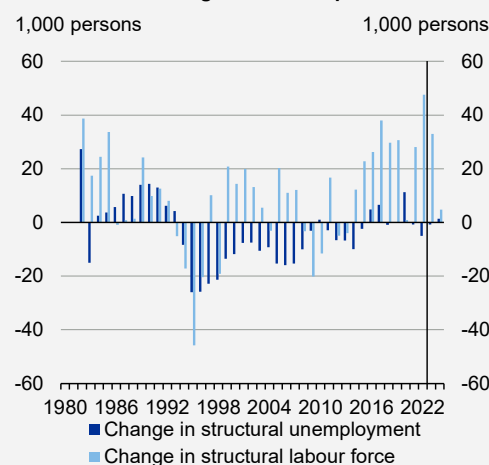


Figure b Structural improvements strengthens the likelihood of longer duration upturns



Note: The output gap shown in figure a is in percent of GVA excl. mining and quarrying.
Source: Statistics Denmark and own calculations.

Downside risks continue to dominate

The risk outlook in recent years has been dominated first by the covid-19 pandemic and then by the energy crisis stemming from Russia's invasion of Ukraine. The most pessimistic scenarios have not materialised, and many economies have proven to be resilient. This is particularly true for the Danish economy, which underwent a rapid recovery after the covid-19 pandemic and has seen a sharp decline in inflation over the past six months. This reflects, among other things, that households and businesses have adapted to a new situation, economic policies have helped keep healthy companies afloat, targeted aid has been provided to vulnerable groups, and new solutions for energy supplies have been found. At the same time, there has not been a self-reinforcing effect of pessimistic expectations.

Economic development is fundamentally determined by underlying structures, but fluctuations can, in many cases, be triggered by changes in sentiment. A prerequisite for a soft landing for the Danish economy is that lower growth and a turnaround in the labor market do not lead to more pessimistic expectations that trigger a larger setback. Booms are typically followed by busts, so a soft landing denotes a favorable outcome where the economic downturn is limited.

In the current economic situation, there are good opportunities for a soft landing. Economic activity is turning, it is happening gradually, and there are no significant imbalances, to begin with, that require correction and could deepen a downturn. However, the weak productivity development in recent years indicates a need for adjustment. Conversely, there is also a risk of overheating and greater imbalances if the economy continues at a high pace and builds up for a more abrupt adjustment. From this perspective, the expected moderation in the Danish economy is a desirable development compared to a situation that would entail greater fluctuations.

Nevertheless, there are still significant negative risks to the economic outlook. The war in Ukraine and the resulting sanctions against Russia continue to have significant consequences for the global economy. Although risks currently appear to be more moderate than in the fall of 2022 when concerns about gas supply shortages in Europe arose, negative secondary effects can quickly re-emerge. This is evident, for example, in the context of the grain agreement between Ukraine and Russia, which has not been renewed, adding new uncertainty to global food prices along with the detonation of the Nova Kakhovka dam in the Kherson region and more widespread drought in many countries. An escalation of the war will, of course, also contribute to renewed uncertainty and push towards a more negative growth trajectory in the global economy, and consequently, the Danish economy.

The International Energy Agency (IEA) has again warned of the risk of energy supply shortages in the event of a harsh winter and low LNG (liquefied natural gas) supply. A transition period for both households and businesses, especially in Europe, is, however, expected to reduce this problem compared to the past winter, *cf. chapter 7*.

Inflation continues to trend downward on a global scale, although core inflation has generally proven more persistent. This poses a risk of increasing inflation expectations, which could potentially lead to a price-wage spiral where price and wage increases mutually reinforce each other. In such a situation, further tightening of financial conditions, such as new increases in policy interest rates, would be required to bring inflation down to the desired level. Concurrently, there is ongoing uncertainty about the actual impact of higher policy interest rates, which in the spring, among other things, manifested as banking stress in the United States. However, post-financial crisis regulatory tightening of banks means that banks in the EU are

generally robust and capable of maintaining lending to households and businesses during an economic downturn.

Production in specific sectors and global supply chains could also be affected by new export restrictions, for example, on rare metals from China, which have been imposed in response to the U.S. export ban on advanced microchips. In general, geopolitical factors play a significant role in shaping the conditions for international trade and growth.

The key assumptions behind the forecast and changes since the last assessment in *Economic Survey, May 2023*, are outlined in Box 1.2.

Box 1.2 Forecast basis and changes since Economic Survey, May 2023

The forecast is based on national accounts data available up to and including the 1st quarter of 2023, as well as a range of other indicators extending into August for the most high-frequency series. The forecast basis also reflects the government's proposal for the 2024 budget, *cf. chapter 1.2*. The GDP indicator for the 2nd quarter of 2023, which showed a growth of 0.2 percent, was released after the data cut-off date but broadly aligns with the estimated economic development for the Danish economy.

The latest annual national accounts data, published by Statistics Denmark on June 30, shows, among other things, higher GDP growth in 2021 and lower growth in 2022 than the previous estimate from March. However, this revision does not in itself affect the future growth prospects. National accounts data for the 1st quarter of 2023, however, indicates that the growth in the beginning of the year was stronger than expected in the May assessment and that the pharmaceutical industry has managed to maintain a high level of production. Along with new inflation figures, which show a faster decline than expected, this contributes to the estimate of real GDP growth of 1.2 percent this year, which is somewhat higher than anticipated in May. Growth in 2024 is estimated to be roughly unchanged at 1.4 percent when compared to the May assessment, *cf. figure a*. The new data on consumer price developments contribute to an inflation forecast of 3.8 percent for 2023 as a whole, which is slightly lower than in May, *cf. figure b*. The inflation estimate for 2024 remains unchanged at 3.0 percent.

Despite adjustments in the central estimates, the overall economic picture remains the same. There is an expectation of a soft landing and an activity level above normal, which means that there will continue to be some pressure on capacity and the labour market.

Figure a GDP growth

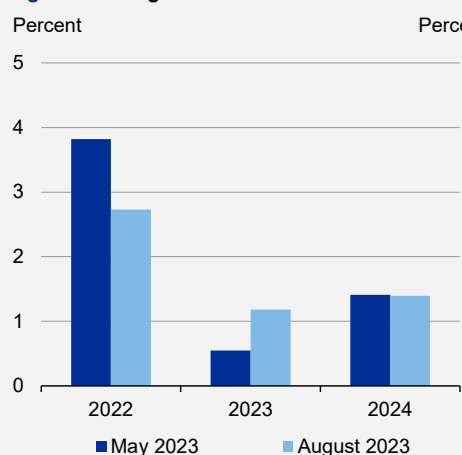
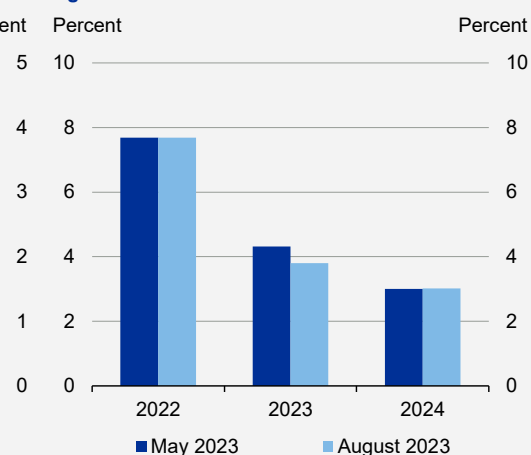


Figure b Inflation



Source: Statistics Denmark and own calculations.

Evaluation of the accuracy of the GDP forecast in Economic Survey

Regularly the Economic Survey includes an assessment of the forecast accuracy of the estimates for the economic development in Denmark. Generally, there are substantial forecast deviations, especially around major economic downturns, but the accuracy of the estimate for GDP growth in the Economic Survey is on a par with other forecasters, *cf. box 1.3*.

Box 1.3 The accuracy of forecast estimates in Economic Survey is on par with other forecasters

The Economic Survey of the Ministry of Economic Affairs aims, among other things, to estimate the coming years' development in GDP and other key national economic figures. Forecasts are inherently uncertain and are at best an expression of the most likely development at a given time. All other things being equal, a more accurate forecast constitutes a better decision-making basis for economic policy. Therefore, the accuracy of the forecasts in the Economic Survey is assessed at regular intervals, including in relation to the accuracy of estimates made by other organisations. A central focus of the evaluations is estimates for GDP growth, which is the most widely used and comprehensive measure of development in the economy.

For the period 1980-2022, the accuracy of the Ministry of Economic Affairs GDP estimate is at the better end of the range when compared with other forecasters, although this comparison is made with the caveat that different forecasts are prepared at different times of the year, cf. *Ministry of Economic Affairs (2023)*. There are generally significant forecast deviations, cf. *figure a*. The biggest forecast deviations occur around major setbacks, such as the start of the corona crisis in 2020. The forecast deviation for 2020 (that is, the difference between the GDP estimate for 2020 in the Economic Survey, December 2019 and the first estimate of GDP growth in 2020) was thus the largest in the period 1980-2022.

The challenge of forecasting the economic development during periods of very high or low growth and economic turning points is repeated by all forecasters. This must be seen in the context of the fact that various institutions' forecasts for the Danish economy are largely based on the same data sources and the same basic economic understanding and method. There are also no signs of systematic forecast deviations in the estimates for GDP growth in the Economic Statement. The Danish economy is largely influenced by developments abroad, and there is a clear correlation between the size of the forecast deviations for the international economy – measured by the forecast deviation in the EU Commission's estimate for the euro area – and the forecast deviation in the Economic Statement for the Danish economy, cf. *figure b*. It illustrates the great importance of external and unforeseen conditions for the accuracy of the forecasts.

Figure a Realised GDP-growth and the forecast in Economic Survey, december

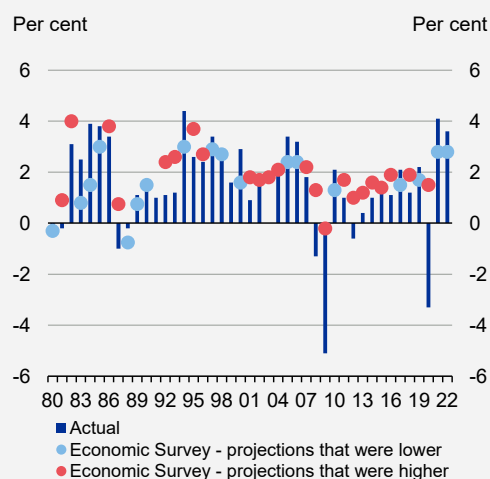
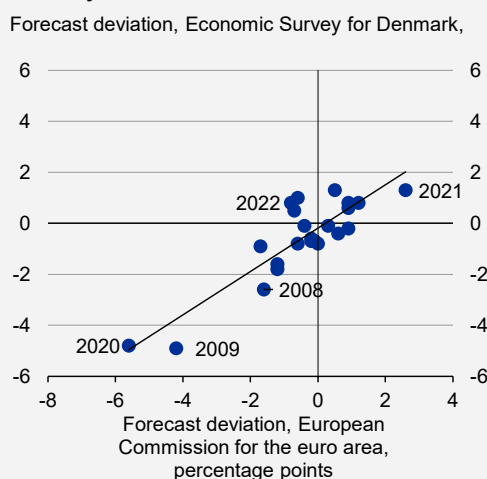


Figure b Link between the accuracy of forecast for the Danish economy and the international economy



Note: Figure a shows the GDP growth according to Statistics Denmark's first preliminary estimate and the GDP estimate in the December version of Economic Survey of the previous year. Thus, the first preliminary estimate of GDP growth in 2021 is compared with the estimate in Economic Survey, December 2020. Each point in figure b shows the deviation for one year, of which selected years appear explicitly. The forecast deviations for the euro area are calculated in the same way as the forecast deviations in Economic Survey for Denmark, but are based on the European Commission's estimate for the euro area in the autumn forecasts.

Source: Eurostat, the European Commission, Statistics Denmark, various editions of Economic Survey/Economic Review as well as Ministry of Economic Affairs (2023): *Hvor godt rammer prognosen for BNP i Økonomisk Redegørelse?*, which is published on the website of the Ministry of Economic Affairs: www.oem.dk.

1.2 Fiscal policy and public finances

The high activity in the Danish economy and the historically high employment are reflected in the public finances, which have shown significant surpluses in recent years. Last year, the surplus on the actual budget balance was DKK 97.4 bn., equivalent to 3.4 per cent of GDP, while in 2021, it was DKK 103.5 bn. or 4.1 per cent of GDP, *cf. figure 1.14*.

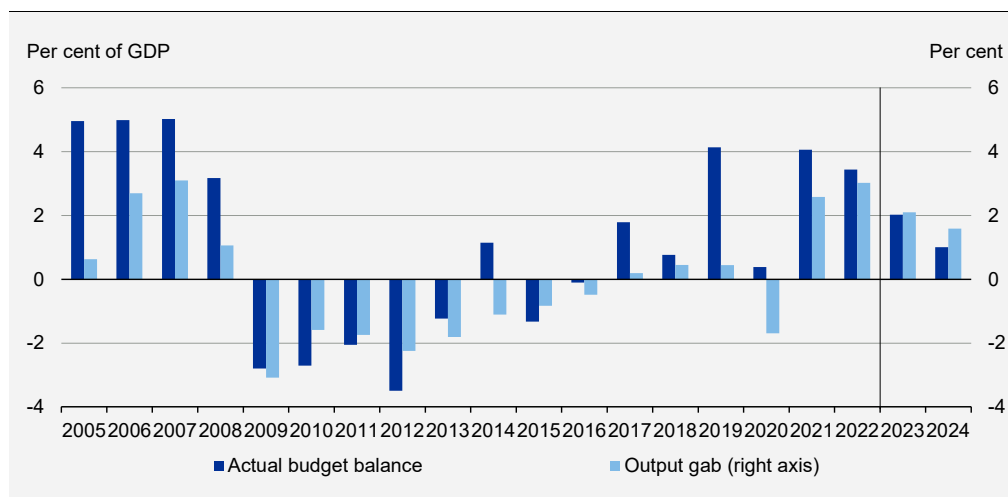
The public finances are strong both in a historical and international perspective. Denmark has had the highest public surplus (measured as a percentage of GDP) among EU countries for the past four years. At the same time, Denmark's EMU debt has decreased from 36 per cent of GDP in 2021 to 29½ per cent of GDP at the end of 2022, which is among the lowest public debt levels in the EU.

The capacity pressure in the Danish economy is expected to decrease in 2022 and further in 2023, partly due to tightening of monetary and fiscal policies. As the economy slows down, the surplus on the actual budget balance is expected to be reduced, and the budget balance is estimated to be 2.0 per cent of GDP in 2023 and 1.0 per cent of GDP in 2024.

The actual budget balance has been revised upwards compared to *Economic Survey, May 2023*. This reflects, among other things, improved economic outlook, which means that the economic slowdown is expected to occur more gradually. In 2023, the improvement in the actual budget balance is particularly due to a significant increase in revenue from capital gains tax. On the other hand, increased allocations to the Ukraine Fund are reducing the surpluses. The military framework in the Ukraine Fund has been expanded by a total of DKK 7.5 bn. in 2023 and DKK 10.9 bn. in 2024 (2024 level) with the *Agreement on increased military support under the Ukraine Fund 2023-2028 (June 2023)*⁴ – and a total of DKK 21.9 bn. in 2023-2028. This means that a total of DKK 32.6 bn. has been allocated for military support to Ukraine through the Ukraine Fund in 2023-2028.

⁴ According to the agreement, there is an allocation of DKK 10.4 bn. in 2024, calculated in 2023 prices, which corresponds to DKK 10.9 bn. in 2024 prices.

Figure 1.14 The high economic activity contributes to significant public surpluses, which gradually decrease



Note: The output gap is a measure of how much production deviates from a structural level.
Source: Statistics Denmark and own calculations.

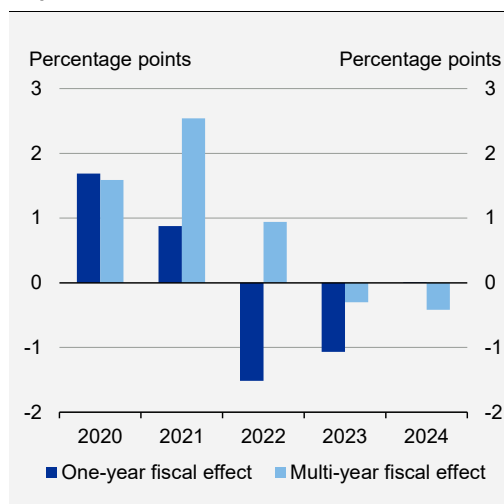
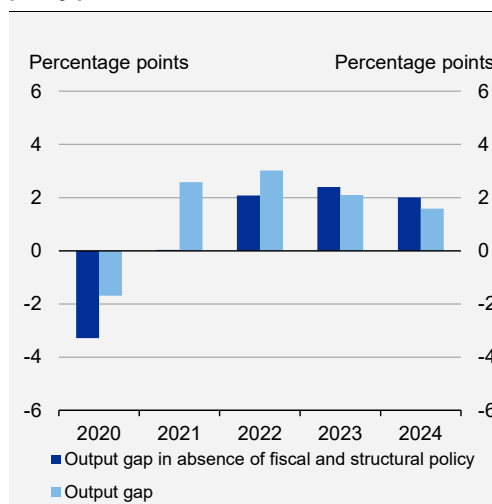
Fiscal policy dampens the capacity pressure in 2023 and 2024 as a whole

The planning of fiscal policy takes, among other things, the business cycle into account. In 2022, fiscal policy was tightened significantly with a one-year fiscal effect of -1.5 percentage points. With the agreement on the budget bill for 2023, the one-year fiscal effect is estimated at -1.1 percentage points, implying a further fiscal tightening. Thus, the fiscal easing during the covid-19 pandemic has been withdrawn.

With the budget proposal for 2024 etc., the fiscal- and structural policy in 2024 is estimated to have a neutral effect on capacity pressure, as the one-year fiscal effect is estimated at 0.0 percentage points, *cf. figure 1.15*.

Compared to *Economic Survey, May 2023*, the estimate of the one-year fiscal effect is tighter in 2023 and 2024. This is primarily due to an upward revision of the estimate for the economy's capacity, driven by higher structural employment, which in itself dampens the capacity pressure in the Danish economy.

The multi-year fiscal effect – which measures the impact of fiscal- and structural policy in the given year and the preceding years relative to the base year 2019, i.e., the year before the covid-19 pandemic – is estimated at -0.3 percentage points in 2023 and -0.4 percentage points in 2024, *cf. chapter 8*. This implies that the overall fiscal- and structural policy since 2019 dampens the capacity pressure in the Danish economy in 2023 and 2024, *cf. figure 1.16*.

Figure 1.15 The fiscal easing during the covid-19 pandemic has been withdrawn**Figure 1.16** The fiscal policy dampens the capacity pressure in 2023 and 2024

Note: Figure 1.16 shows the impact of fiscal- and structural policy on the output gap in a single year. The impact is measured by the total effect of fiscal- and structural policy since 2019.
Source: Own calculations.

Since *Economic Survey, May 2023* the Ukraine Fund has been expanded by DKK 7.5 bn. in 2023 and DKK 10.9 bn. in 2024 (2024 level) by lowering the structural budget balance. The impact on Danish economic activity is expected to be close to neutral, as the vast majority of the funds is assumed to be donations to Ukraine and purchases of replacement goods from abroad. Ultimately, the impact on Danish economic activity will depend on how the funds are disposed specifically.

In relation to the estimates of fiscal effects, it should be noted that a potential extension of the special law for displaced persons from Ukraine – which is not reflected in the current forecast and thus the estimate for the fiscal effect in 2024 – in itself will dampen the capacity pressure in the Danish economy due to, among other things, an expected increase in structural employment, *cf. chapter 8*.

Surpluses on the structural budget balance in 2023 and 2024

The structural budget balance is estimated at 0.5 per cent of GDP in 2023 and 0.4 per cent of GDP in 2024. Thus, there is forecasted structural surpluses this year and next year.

In comparison to *Economic Survey* from May, the structural budget balance has been revised downwards by 0.3 per cent of GDP in 2023 and 0.2 per cent of GDP in 2024. In particular, this reflects the expansion of the Ukraine Fund by DKK 7.5 bn. in 2023 (approximately 0.3 per cent of GDP) and DKK 10.9 bn. in 2024 (approximately 0.4 per cent of GDP) as part of the *Agreement on increased military support under the Ukraine Fund in 2023-2028 (June 2023)*. Furthermore, revisions in the estimates of the structural budget balance reflect various other developments since the May survey, including, among other things, an upward revision of the estimates for structural employment etc., *cf. chapter 8*.

Key estimates of public finances are shown in table 1.1 and are further elaborated in chapter 8 (only available in Danish).

Table 1.1 Key figures relating to fiscal policy

	2022	2023	2024
Structural budget balance, per cent of structural GDP	1.8	0.5	0.4
Actual budget balance, per cent of GDP	3.4	2.0	1.0
Public consumption growth, per cent ¹⁾	-3.6	1.5	2.1
Multi-year fiscal effect, level, percentage points ²⁾	0.9	-0.3	-0.4
One-year fiscal effect, percentage points ³⁾	-1.5	-1.1	0.0
Output gap, per cent ⁴⁾	3.0	2.1	1.6
Employment gap, per cent ⁴⁾	3.4	3.3	2.7
EMU-debt, per cent of GDP ⁵⁾	29.5	30.8	29.6
Public financial net wealth, per cent of GDP	16.4	18.6	18.9

1) The estimated growth in public consumption is technically assumed to be the same using the input and output method. The shown growth in 2022 is reported using the input method.

2) The multi-year fiscal effect is a measure of how changes in the fiscal and structural policy affect the output gap (level effect compared to 2019).

3) The one-year fiscal effect is a measure of how changes in the fiscal and structural policy in a given year affects the output gap in a given year.

4) Calculated measure of how far production and employment are from their structural levels. When the gaps are positive, it indicates that resources in the economy are scarce compared to a normal cyclical position.

5) The EMU-debt as a share of GDP is estimated to increase from 2022 to 2023 despite an estimated surplus on the actual budget balance in 2023. This reflects – in addition to an estimated decline in nominal GDP in 2023 – the size of government bond issuance in 2023, which is affected by, among other things, a political agreement to postpone corporate tax payments from 2023 to 2024.

Source: Statistics Denmark and own calculations.

The 2024 budget prioritizes green transition, welfare, and security.

With the budget proposal for 2024, the government prioritizes investments in green transition, public welfare including health and education, and security, *cf. box 1.4*. The government is increasing funding for local welfare services in municipalities and regions by an additional DKK 1 bn. annually, on top of the budget agreements reached with municipalities and regions in May.

Furthermore, funds have been allocated for expanding the military framework in the Ukraine Fund by DKK 10.9 bn. in 2024.

Furthermore, several political agreements have been made over the summer, including the *Agreement on the Framework for the Reform of University Education in Denmark (June 2023)* and the *Agreement for Danish Defence Will and Ability to Take Responsibility - Danish Defense and Security 2024-2033 (June 2023)*. The agreement on higher education includes a billion kroner investment in education and provides graduate students with more pathways and new educational opportunities. The university reform also contributes to increasing the labor supply and strengthening public finances in the coming decades. The defense agreement allocates approximately DKK 143 bn. for initiatives over the next 10 years, aimed at strengthening Danish defense and security, ensuring a modernized defense and meeting NATO's target of spending 2 per cent of GDP on defense and security by 2030 at the latest.

Later this year, the government will present its 2030 plan, which will highlight the government's overall economic priorities in the medium-term, including investments in defense and security, the green transition, healthcare, education, and other improvements in welfare. The 2030 plan will also address the need to increase labor supply. The government will strengthen the incentives to work, implement measures to strengthen competencies and focusing on core tasks in the welfare sector. To achieve this, the government will implement, among other things, a tax reform, a comprehensive release of the welfare system, improved wages and working conditions in the public sector, and enhanced education.

Increased public consumption and employment

The real growth in public consumption is estimated to 1.5 per cent in 2023 and 2.1 per cent in 2024. This represents a significant upward revision, especially in 2023 compared to the *Economic Survey, May 2023*, *cf. figure 1.17*.

The upward adjustment should primarily be seen in the context of disbursements from the Ukraine Fund and the approved expansion of the fund, *cf. the Agreement on the Increase in Military Support under the Ukraine Fund for 2023-2028 (June 2023)*.⁵ The estimate for expenditure growth in 2024 has been revised upward to a lesser extent. The projected expenditure growth in 2024 is based on the budget agreements with municipalities and regions and the budgeting in the budget proposal for 2024, *cf. Chapter 8*. This also includes the government's proposal to allocate an additional DKK 1 bn. annually to local welfare services in municipalities and regions, which goes beyond the budget agreements reached with municipalities and regions in May.

⁵ Based on the specific allocations from the Ukraine Fund in 2023, it is assumed that approximately half of the fund's resources will be used for reacquisitions in the form of public procurement, primarily abroad. Therefore, in relation to the assessment in *Economic Survey, May 2023*, public expenditure in 2023 has been adjusted upwards, while the previous calculation technique's inclusion as transfers to foreign countries is correspondingly reduced. The same distribution is technically assumed for newly added funds in 2023-2024.

Box 1.4 Selected key priorities in the budget proposal for 2024**The Green Transition**

The climate crisis demands action now. There is a need for even more momentum in the green transition both nationally and internationally. Denmark must prioritize new climate solutions. Therefore, it is crucial for the government to continue investing significantly in Denmark's green transition. With the budget proposal for 2024, a total of more than DKK 1 bn. has been allocated to the green sector in 2024. This alone is not enough to ensure that Denmark reaches its goal, but it moves us further in the green transition.

Welfare

The Danish welfare society is among the best in the world. However, Danes can rightly expect ongoing investments in our welfare. Therefore, the government will, among other things, allocate 5 bn. DKK annually to healthcare towards 2030 and increase funding for mental health by over DKK 3 bn. annually. The government has also allocated DKK 1 bn. annually from 2024 to 2027 to provide financial support to municipalities and regions.

Education and Teaching

Money alone is not enough to ensure a better welfare society in the future. It is also crucial that both the public and private sectors can retain and recruit skilled employees. With the budget proposal for 2024, the government will prioritize a significant boost to vocational education to support attractive training programs. Additionally, the government is prioritizing primary education to give every child an opportunity.

Security

With the war in Ukraine, Denmark is faced with a changed security landscape. The government and a broad majority in the Danish parliament have agreed on a historic defense agreement. However, the war not only demands a stronger defense and a more resilient society but also stronger diplomacy, which is also prioritized in the budget proposal.

At the same time, it is important for the government to crack down on those who create anxiety in Denmark. We must ensure a continued low crime rate and safeguard high trust in the legal system. Therefore, the government has allocated funding for, among other things, a new agreement on the judiciary's finances for 2024-2027, a new anti-gang package, and a police force and prosecution service that continue to provide security for the Danish population.

Rural Areas

It is the government's objective to ensure a cohesive Denmark in geographical balance. Therefore, with the budget proposal for 2024, the government will prioritize a range of initiatives that contribute to the development of rural areas.

Source: *The budget proposal for 2024.*

Figure 1.17 The Ukraine Fund increases the real growth in public consumption compared to the May survey

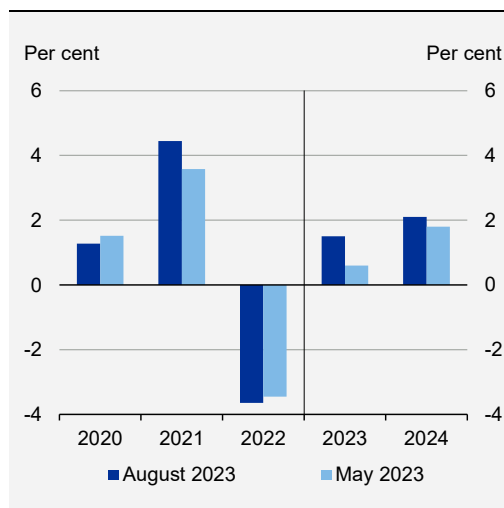
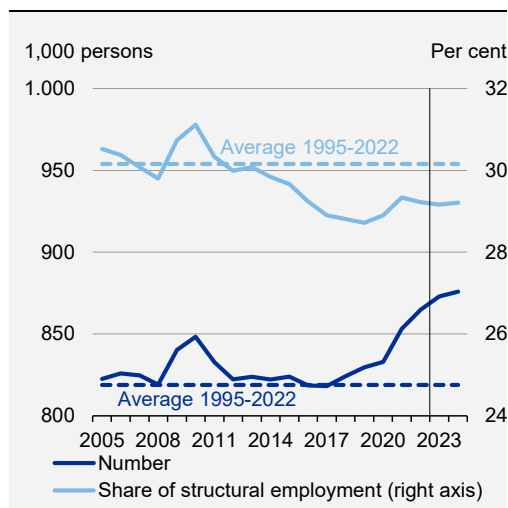


Figure 1.18 Public employment is growing roughly in line with structural employment



Note: Public expenditure is calculated using the input method and includes depreciation.
Source: Statistics Denmark and own calculations.

Public employment has been increasing since 2017, particularly in 2021 and 2022, where a total of 32,000 more public employees were added, *cf. figure 1.18*. The growth continues in the beginning of 2023 with an increase of nearly 5,000 employees in the first quarter.

However, the number of public employees compared to the total structural employment has remained relatively constant at around 29 per cent in recent years, which is lower than the historical average, *cf. figure 1.18*. The number of public employees per 100 citizens is roughly in line with the historical average.

Public employment is expected to increase by 8,000 individuals in 2023 and an additional 3,000 individuals in 2024. This is roughly in line with the expected development in structural employment, and the number of public employees as a share of the total structural employment is therefore expected to remain relatively constant in 2023 and 2024.

Alongside the business cycle projection, a 2030-projection has been prepared, forming the basis for the proposed expenditure ceilings for the new fourth ceiling year 2027 and the draft law for changes to the current expenditure ceilings for the years 2023-2026. The medium-term projection and expenditure ceilings for 2027 is described more closely in *2030-planforløbet: Grundlag for udgiftslofter 2027, August 2023*, which is accessible on www.fm.dk.

1.3 Annex table

Table 1.2 Key figures from the August survey and comparison with the May survey

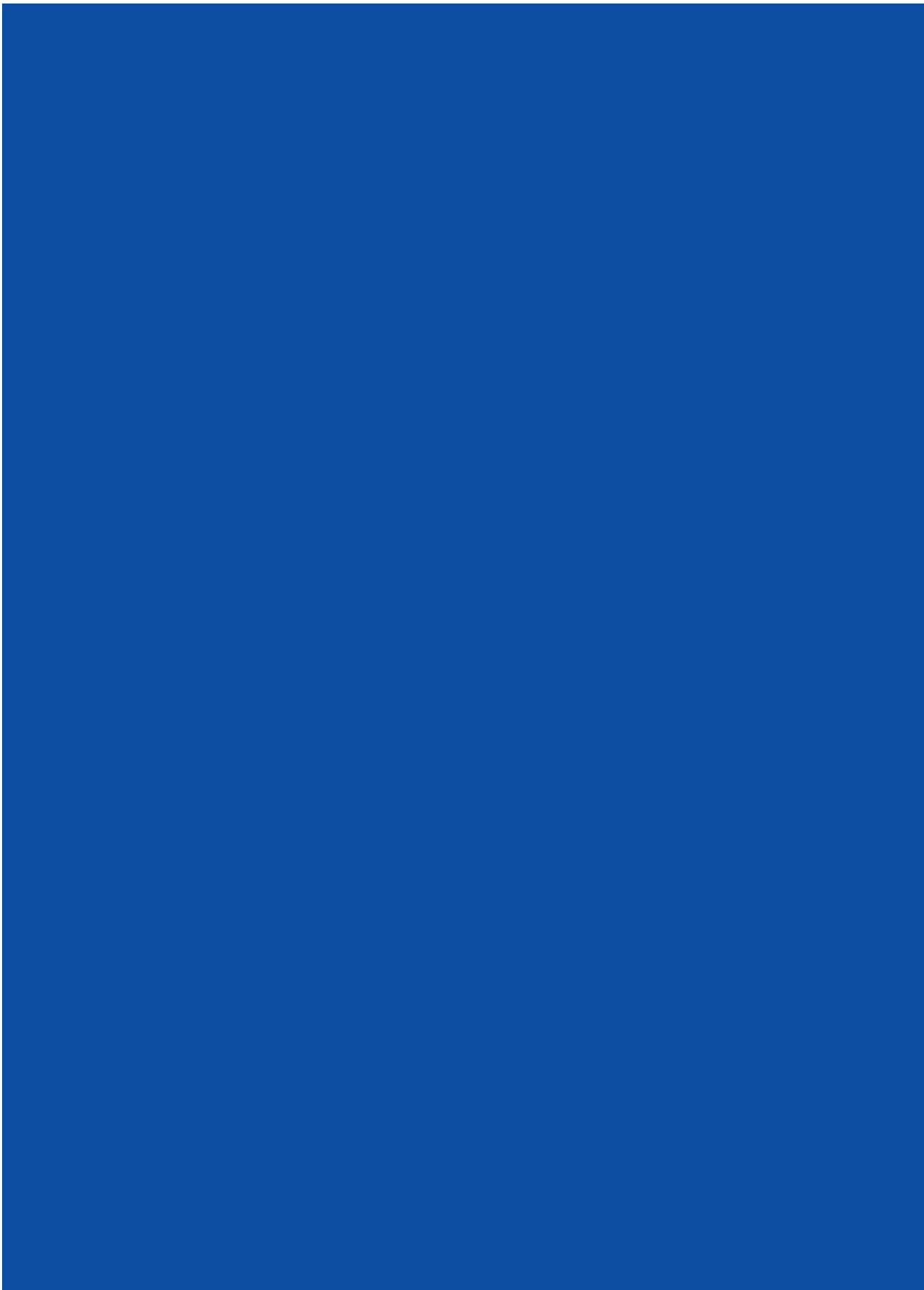
	2022	2023		2024	
		May	August	May	August
Real change, per cent					
Private consumption	-1.4	0.5	0.6	1.3	1.5
Total government demand	-2.4	1.1	1.8	1.9	1.9
- of which government consumption	-2.8	0.6	1.5	1.8	2.1
- of which government investments	0.3	4.3	3.6	2.7	0.8
Housing investment	-8.5	-9.3	-12.9	-8.4	-2.1
Business fixed investment	9.2	-7.4	-3.6	-1.6	-2.0
Inventories (contribution to GDP-growth)	0.4	-0.8	-1.7	0.3	-0.1
Total final domestic demand	-0.3	-2.1	-2.3	0.6	0.8
Exports	10.8	3.1	5.4	3.7	3.4
- of which manufacturing exports	10.7	6.0	8.8	3.3	3.3
Total demand	4.0	0.2	1.1	1.9	1.9
Imports	6.5	-0.5	0.9	2.8	2.8
- of which imports of goods	1.2	-0.1	-2.4	2.0	4.1
GDP	2.7	0.6	1.2	1.4	1.4
Gross value added	3.6	0.6	1.4	1.5	1.6
- of which non-farm private sector	4.2	0.8	2.2	0.9	1.1
Change in 1,000 persons					
Labour force, total	86	16	40	-18	-4
Employment, total	116	1	32	-23	-13
- of which private sector	104	1	24	-26	-16
- of which public sector	12	0	8	3	3
Gross unemployment	-30	16	9	6	9
Cyclical developments, per cent					
Output gap	3.0	2.0	2.1	1.2	1.6
Employment gap	3.4	3.1	3.3	2.0	2.7
Unemployment gap	-1.3	-0.8	-1.0	-0.6	-0.7

Note: Public consumption is calculated using the input-method.
Source: Statistics Denmark and own calculations.

Table 1.2 (continued) Key figures from the August survey and comparison with the May survey

	2022	2023		2024	
		May	August	May	August
Change, per cent					
House prices (single family homes)	0.5	-9.2	-4.5	-0.5	1.4
Consumer prices	7.7	4.3	3.8	3.0	3.0
Hourly earnings in the private sector	4.0	4.4	4.5	5.3	5.4
Real disposable income, households	2.3	-1.0	-0.7	1.0	2.9
Productivity in the private non-farm sector	-1.0	1.7	2.5	2.3	1.6
Per cent p.a.					
1-year rate loan	0.9	3.5	3.5	3.4	3.7
10-year government bond	1.5	2.5	2.7	2.5	2.8
30-year mortgage credit bond	3.7	4.6	4.7	4.5	4.7
Public finances					
Actual public balance (DKK bn.)	97	51	56	16	29
Actual public balance (per cent of GDP)	3.4	1.9	2.0	0.6	1.0
Structural public balance (per cent of GDP)	1.8	0.8	0.5	0.6	0.4
Gross debt (per cent of GDP)	29.5	30.9	30.8	29.7	29.6
Labour market					
Labour force, total (1,000 persons)	3,242	3,254	3,283	3,237	3,279
Employment, total (1,000 persons)	3,168	3,165	3,200	3,142	3,187
Gross unemployment (yearly average, 1,000 persons)	76	91	85	97	94
Gross unemployment (per cent of labour force)	2.3	2.8	2.6	3.0	2.9
External assumptions					
Trade-weighted international GDP-growth	3.0	1.2	1.3	1.8	1.8
Export market growth (manufactured goods)	7.2	1.9	0.8	2.5	3.0
Exchange rate (DKK per USD)	7.1	6.9	6.9	6.9	6.7
Oil price, dollars per barrel	100.8	81.7	81.1	80.4	81.4
Balance of payments					
Current account balance (DKK bn.)	383	232	266	243	287
Current account balance (per cent of GDP)	13.5	8.4	9.6	8.5	9.9

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



2. Prospects for stabilisation in the housing market

In recent years, there have been large fluctuations in the housing market in Denmark and many other countries. For many families, the home constitutes the largest asset, just as the housing debt typically constitutes the largest financial liability, and housing costs are the biggest item on the family budget. Fluctuations in the housing market are therefore of great importance to the economy and economic development. This chapter examines the housing market from a historical and international perspective and with the help of macroeconomic models. The main conclusions of the chapter are:

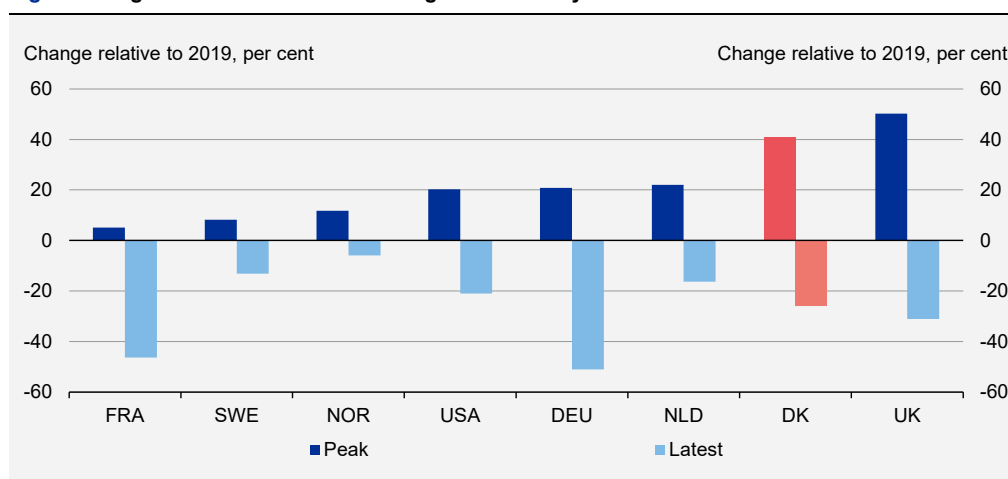
- The Danish housing market as a whole has taken a large part of the expected adjustment to higher interest rates, and the conditions are in place for a stabilization of the housing market and renewed nominal growth in house prices in the coming years.
- The upswing in the housing market in Denmark in 2020-2021 was not particularly strong relative to other advanced economies, while the subsequent fall in real house prices has been relatively big.
- There were no widespread signs of a build-up of imbalances related to the housing market in 2020-2021, unlike before the financial crisis in the 2000's. Although the number of home sales was very high, developments in house prices and lending were significantly more moderate.
- Homeowners have widely used the increases in long-term interest rates to reduce their debt through conversions. Together with the previous year's price increases, this means that many homeowners can withstand a significant drop in house prices without net wealth turning negative.
- The relatively limited fall in nominal house prices, despite an increase in the long-term housing interest rate of just over 3 ¼ per cent since the beginning of 2022, must be seen against the background that several indicators and model calculations point to house prices not being out of step with the underlying economic drivers.
- The housing burden, i.e. the costs related to the financing as well as property taxes for the purchase of an ordinary single-family house is close to the historical average, although it has increased slightly in recent years.
- A number of quantitative models point indicate that house prices, seen for the country as a whole, are now in line with or below their underlying level, and that the risk of further falls has decreased.
- However, the risks of house price declines are still elevated compared to a 'normal situation', and calculations based on the economic model MACRO indicate that the isolated effect of higher interest rates on house prices is greater than the fall that has occurred since 2022.
- Demographic trends generally supports housing prices in the coming years. There is relatively high growth in the age groups that normally make up the majority of first-time buyers. At the same time, the proportion of households consisting of only one person is increasing.

- The new system for housing taxation, which comes into effect in 2024, will, to the extent that property prices do not already reflect the new assessments and tax rates, support house prices overall, while the prices of owner-occupied flats may be negatively affected.
- The new housing tax system will contribute to stabilising price developments on the housing market in the future compared to the current system, as housing taxes will once again follow property values.

2.1 The fall in house prices has been relatively strong in Denmark compared to other countries

In recent years, the housing market has been characterised by large fluctuations. During the corona pandemic in 2020 and 2021, there was a marked upturn because of increased demand. Subsequently, however, there has been a significant decline in both housing sales and housing prices. This development with a housing demand boom followed by decline has been an international phenomenon, *cf. figure 2.1*.

Figur 2.1 Significant increases in housing sales in many countries in 2020 and 2021



Note: Peak based on a two-quarter moving average. Own season adjustment applied.
Source: Macrobond and own calculations.

The increase in demand for housing during the corona pandemic should be seen, among other things, in the light of the fact that the increased proportion of time spent at home may have caused households to value housing more, at the same time that other consumption options were limited. In addition, extraordinarily low interest rates coupled with income-supporting fiscal policy and increased household savings during the pandemic gave households good opportunities to finance home purchases.

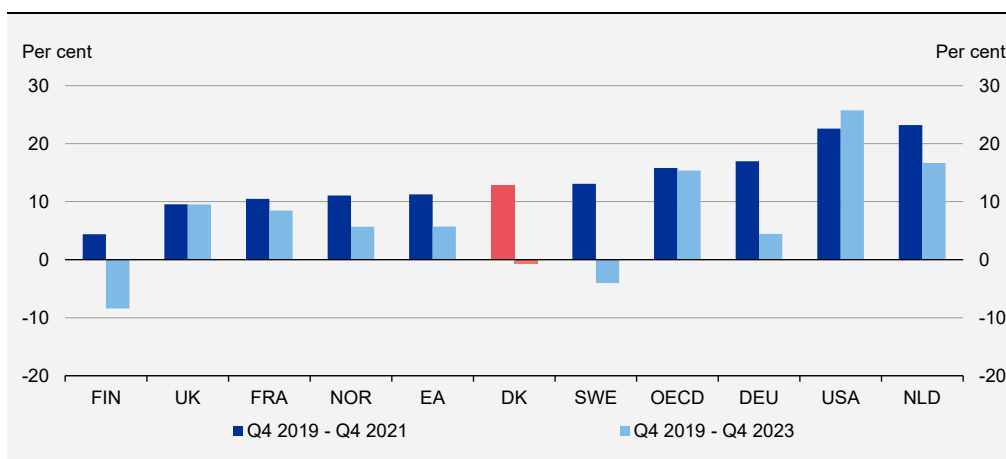
After the corona pandemic released its grip on the economies in 2022, there has been an adjustment in housing demand because of the normalisation of consumption patterns. Households have again had the opportunity to prioritize other forms of consumption and the degree

of housework has found a lower rent. At the same time, the temporarily increased sales activity on the housing market during the corona pandemic may also have been because of some households that brought their home purchases forward in time.

Therefore, it is expected that housing demand will fall back to a more normal level after the pandemic. In addition, interest rates have risen very sharply as a consequence of high inflation that has led to tightening of monetary policy. In Denmark, the average effective interest rate on 30-year fixed-rate mortgage bonds has thus increased from 1.8 per cent at the beginning of 2022 to approximately 5 per cent in July 2023. For loans with variable interest rates, there has been an even sharper increase in interest rates. These factors help to explain why house sales are today at a lower level than before the pandemic in several countries.

The increasing demand for owner-occupied homes during the pandemic gave rise to a significant increase in house prices in many countries. Thus, house prices adjusted for inflation rose by more than 15 per cent in the OECD countries taken as a whole, and in the USA the gains exceeded 20 per cent. For Denmark, the progress in house prices from the 4th quarter of 2019 to the 4th quarter of 2021 was in the middle of the range among the OECD countries, *cf. figure 2.2*.

Figure 2.2 Real house prices are now below the peak reached in 2021 in many countries



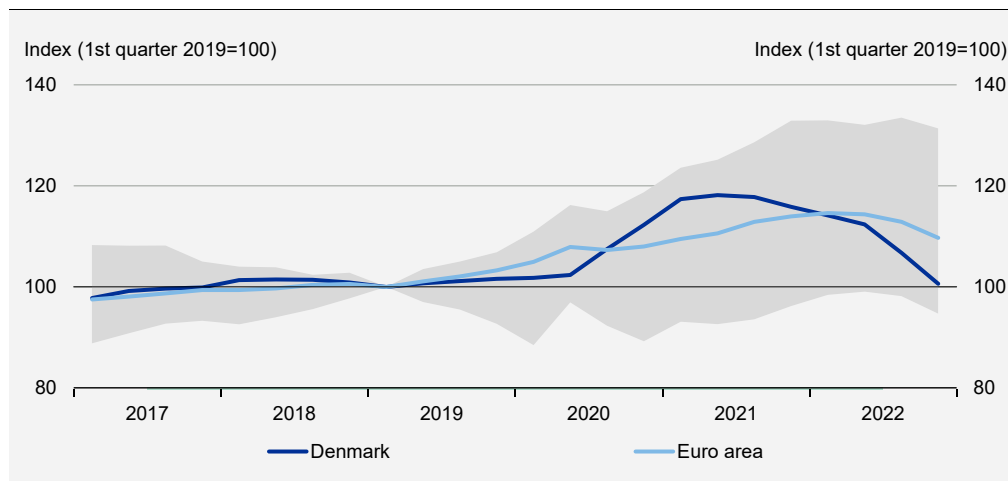
Note: The figure shows growth in real house prices as calculated by the OECD (Analytical House Prices Indicators) from the fourth quarter of 2019 to the fourth quarter of 2021 and the fourth quarter of 2019 to the first quarter of 2023.
Source: OECD and Macrobond.

In the past year, the development across countries has been more diverse. The decline in the housing market has been more pronounced in Denmark and Sweden, among others, than in several other countries. Thus, real house prices are now back below the level in the 4th quarter of 2019 after good progress in 2020 and 2021. Conversely, in several other countries, house prices are still significantly above the level from before the corona pandemic.

A caveat for such a comparison is that the starting point for the housing market across countries in the period may be different, as house prices may have risen a lot in the previous years in some countries. Nevertheless, house prices in Denmark have fallen relatively more than in other countries after 2021 – both with regard to real house prices, and this is also the case when

house prices are set in relation to incomes, *cf. figure 2.3*. Thus, Danish house prices today – measured in relation to income development – are back around the 2019 level.

Figure 2.3 Weaker development in house prices relative to household income in Denmark than in other countries since 2021



Note: The range shown by the shaded grey area encompasses the countries with, respectively, the highest and the lowest index value for house prices relative to disposable net income (in nominal terms) for the period.

Source: OECD analytical house price indicators and own calculations.

2.2 No build-up of imbalances related to the housing market during 2020-2021 as opposed to the financial crisis

Another perspective for assessing the adjustment in the housing market is to compare it with previous turning points in the Danish housing market. The current period differs in such a comparison in that period of growth prior to the turning point was more moderate, *cf. figure 2.4 and figure 2.5*. Conversely, the extent of the decline after the turning point has not been unusually high in comparison to previous downturns. So far, the decline in nominal house prices for country as a whole has been roughly in line with the declines in the early 1980s and the decline that began in 1986, while the decline in real house prices has been slightly more moderate. However, both the nominal and real declines in house prices have occurred faster than during the financial crisis, although there are already signs of stabilization. The relatively sharp decline in real housing prices is primarily due to high inflation, while the adjustment in nominal housing prices has been more limited.

Previous episodes of declines in the housing market, however, have been characterised by the fact that the decline in house prices has persisted for a longer period. Thus, real house prices fell continuously for seven quarters in the period 1979-1983, while the declines after the so-called “potato diet” in the mid-1980’s and the financial crisis in the late 2000’s lasted more than 3½ years and 4½ years, respectively. From previous turning points, it is also clear that there can be temporary stabilization or improvement in housing prices during a period of decline.

Figure 2.4 Previous periods of price declines in the housing market have been prolonged and severe...

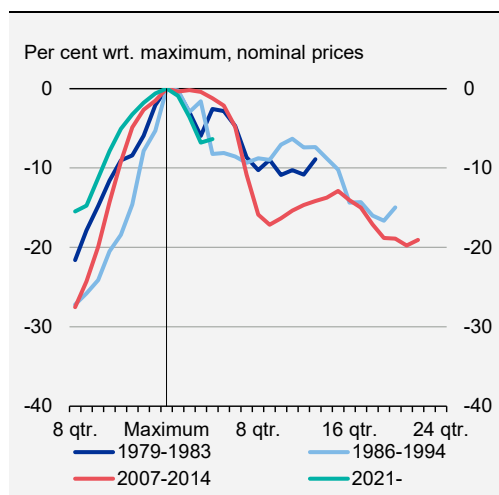
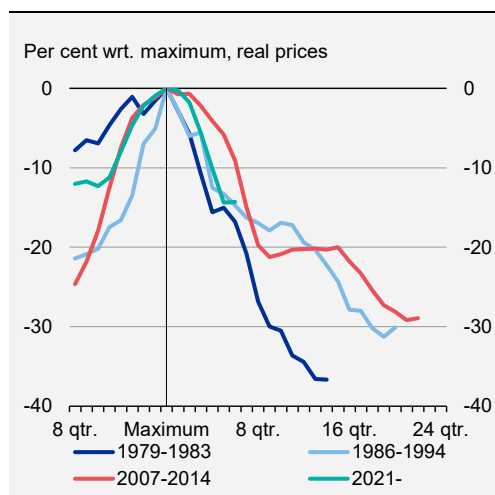


Figure 2.5 ... and even more severe when considering real price changes.



Source: MONA data bank (Danmarks Nationalbank), Statistics Denmark and own calculations.

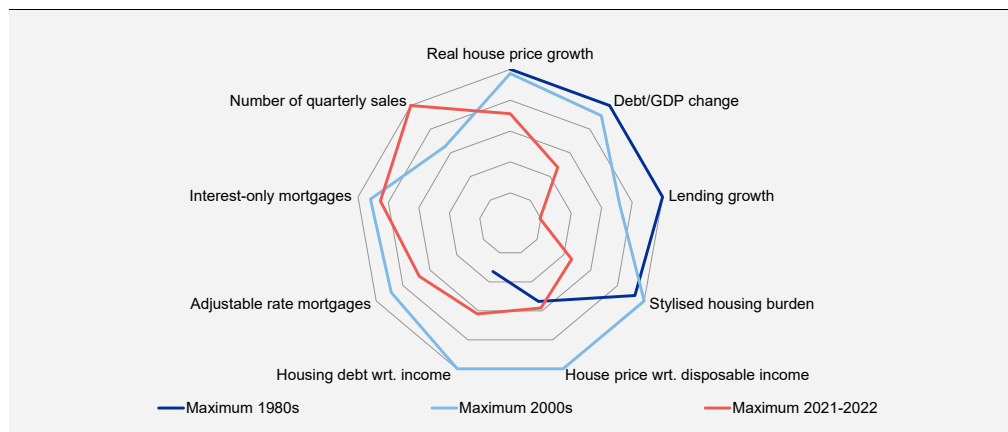
The prolonged period of declining house prices after previous turning points also reflects that both in the 1980s and in the years leading up to the financial crisis, there were imbalances related to the housing market, which needed to be addressed afterwards.¹ This has not been the case during the upturn during the covid-19 pandemic. Thus, the developments on the housing market has been more moderate in 2020-2021 when compared across various metrics, including the development of house prices, the housing burden, and mortgage lending, *cf. figure 2.6*. At the same time, the shares of interest-only and variable-rate loans are now lower than was the case before the financial crisis, which is partly due to tighter regulation, *cf. below*.

However, an exception is the surge in activity in the housing market in 2020-2021, which was significantly more pronounced than in the period leading up to the financial crisis. Tightening of financial and macroprudential regulation to mitigate risks related to lending in the housing market since the financial crisis has contributed to the fact that the expansion in the housing market from 2012 to 2021 did not lead to greater imbalances in borrowing and the choice of loan types.

The lending rules outlined by the Danish Financial Supervisory Authority so-called growth area guidelines and the Executive Order on good practice for mortgage lending have for instance helped to dampen loan demand, and without this regulation, homeowners in the most expensive housing areas, especially Copenhagen, would likely have had higher debt levels. For example, the provision in the growth area guidelines requiring borrowers to afford a fixed interest rate of at least 4 percent and accompanying wealth requirements in case of a high debt-to-income ratio has contributed to reducing leverage and the impact of low interest rates in the years before 2022.

¹ In the 1980s, there was also a significant change in the mortgage interest deduction and loan options, which contributed to the downturn in the housing market.

Figure 2.6 Less pronounced pressure during the recent expansion compared to the 1980s and 2000s

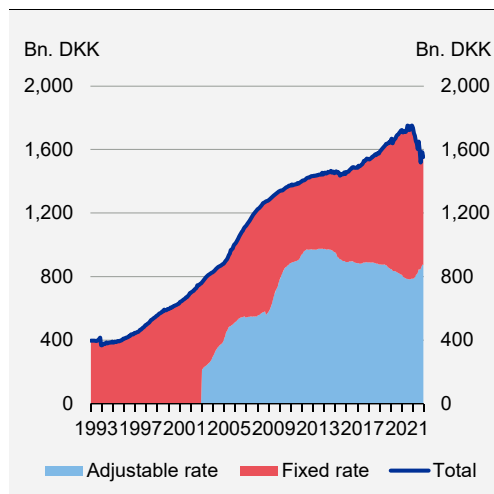


Note: In the radar chart, the center and outer edge respectively indicate the lowest and highest values observed in relation to historical values from the 1st quarter of 1980 (or the first available data point) through the 4th quarter of 2022. For interest-only and variable-rate loans, only the periods when these loan types were available have been considered. The stylised housing burden used in this figure is based on data from the Systemic Risk Council and follows the Danmarks Nationalbank's calculation method as described in Dam et al. (2011), *Udviklingen på ejerboligmarkedet i de senere år – Kan boligpriserne forklares?* Danmarks Nationalbank, Quarterly Review 1st quarter 2011, part 2. The number of quarterly sales is not available for the 1980s.

Source: The Danish Systemic Risk Council, Statistics Denmark, Finance Denmark and own calculations.

This is also evident in the fact that the growth in household mortgage debt did not increase to the same extent as housing prices in 2020 and 2021, unlike the situation leading up to the financial crisis, *cf. figure 2.7*. Similarly, only a small share of the growth in housing wealth has been used for consumption, and homeowners' overall wealth has therefore increased significantly.² Furthermore, the very low long-term interest rates contributed to a larger share of homeowners choosing fixed-rate loans during that period. Many homeowners have taken advantage of the subsequent higher interest rates, which led to price declines on the bonds behind their mortgage loans, reducing their outstanding debt through either refinancing or partial repayment of their mortgage loans and bank loans, *cf. figure 2.8*. However, this has also resulted in a relative increase in the number of homeowners with variable-rate mortgage loans, as some of the fixed-rate loans have been refinanced to variable-rate loans. However, at the same time there has also been a reduction in bank debt, which is variable-rate and more expensive.

² Cf. Andersen et al., *Housing wealth and consumption during Covid-19*, Economic Memo no. 1, 2023, Danmarks Nationalbank.

Figure 2.7 Housing-related borrowing did not follow increases in house prices**Figure 2.8 Households have used refinancing to reduce their debt**

Source: The Systemic Risk Council, Statistics Denmark and own calculations.

Analyses based on Danish registry data show that the majority of homeowners who have refinanced their debt have reduced their remaining debt rather than tapping into their home equity for consumption.³ The lower debt levels partially offsets the effect of the decline in housing prices on home equity, and rising prices and incomes have further reduced the real value of the remaining debt. Although many borrowers have chosen adjustable-rate mortgages (ARMs) recently, both the overall debt level and the proportion of ARM and interest-only loans are still lower than before the financial crisis. The increasing share of ARM may suggest expectations of lower interest rates in the long term.

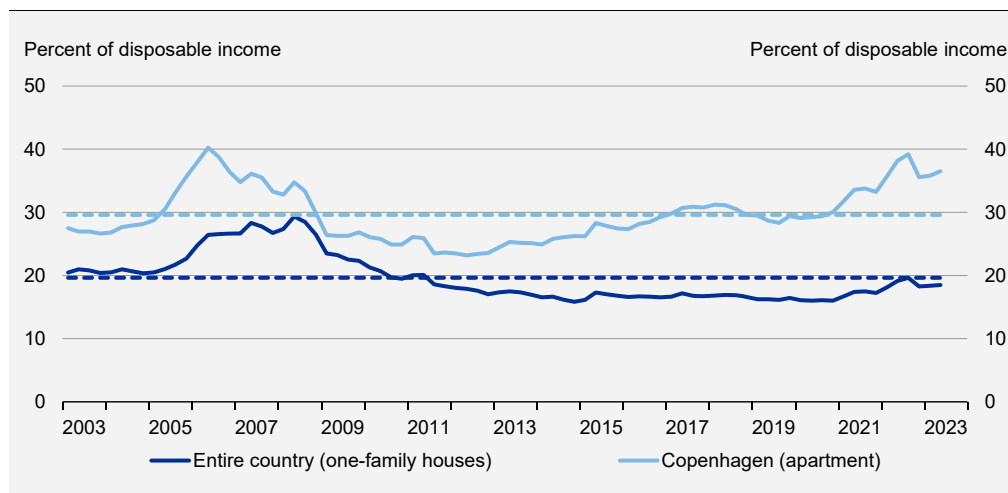
The housing burden is moderate nationwide but high in Copenhagen

The financial costs associated with housing financing and taxes as a percentage of disposable income – also known as the housing burden – have been increasing in recent years due to rising interest rates and housing prices. However, for an average single-family home, the housing burden remains at a moderate level in a historical perspective and significantly below the level before the financial crisis, *cf. figure 2.9*. However, the costs of housing expenses vary significantly depending on the areas and types of families considered, *cf. box 2.1*.

The housing burden is high in and around Copenhagen due to significantly higher housing prices. This results in a higher level of debt relative to income for a typical homebuyer, which also means that interest rate changes typically have a more pronounced impact on housing prices.⁴ The greater sensitivity to interest rates has contributed to housing prices in Copenhagen have shown larger fluctuations in recent decades compared to the rest of the country.

³ Cf. Andersen et al., Refinancing behaviour by homeowners in Denmark when mortgage rates rise, Economic Memo no. 2, 2023, Danmarks Nationalbank.

⁴ Cf. S. L. Bech, m.fl. (2021), Measuring household interest-rate sensitivity in Denmark, Working Paper no. 183, Danmarks Nationalbank.

Figure 2.9 The housing burden has increased but is not high on a national basis

Note: In figure 2.9, for the entire country, an average couple with children buying a single-family home of 140 sqm with 15 percent bank loan and 80 percent mortgage loan with a fixed interest rate and amortization is considered. For Copenhagen (the Copenhagen City region), a couple without children buying an apartment of 80 sqm, also with 15 percent bank loan and 80 percent mortgage financing with a fixed interest rate and amortization is considered. The dashed lines represent the average for the period from the 1st quarter of 2003 to the 2nd quarter of 2022. The last observation is from the 2nd quarter of 2023. The calculation is based on the average income for couples with short to medium-length educations, where both are employed. For further details, please see Box 2.1.

Source: Statistics Denmark, Danmarks Nationalbank, Finance Denmark, Boligsiden and own calculations.

However, the greater housing price fluctuations in and around Copenhagen are also related to the fact that the supply of owner-occupied homes is somewhat more limited due to a relatively greater constraint on the number of building plots near Copenhagen compared to the country as a whole.⁵ Owner-occupied homes make up almost 22 percent of the total housing stock in Copenhagen, which should be seen in relation to the fact that the share of owner-occupied homes is approximately 48 percent for the entire country.

Although the owner-occupied housing market in Copenhagen represents a relatively small part of the total housing stock, it has a significant impact on the housing market in Zealand, as shocks to the Copenhagen housing market generally spread to the rest of the metropolitan area and the rest of Zealand with some delay.⁶ As mentioned above, the tightening of borrowing and lending rules in the years following the financial crisis has also helped limit household borrowing, especially in areas where housing prices are highest. This may have dampened interest rate sensitivity and meant that the lower interest rates in the years leading up to 2022 did not fully translate into housing price increases.

⁵ Cf. N. Dam et al. (2014), A multi-speed housing market, Monetary review, 3rd quarter 2014, Danmarks Nationalbank.

⁶ Cf. Hviid et al. (2016), Regional aspects on the housing market, Monetary review, 4th quarter 2016, Danmarks Nationalbank.

Box 2.1 Calculation of the housing burden

The housing burden is a measure of housing taxes and financing costs as a percentage of disposable household income. The financing assumptions for housing purchases is using a down payment of 5 percent, a mortgage loan of 80 percent, and a bank loan for the remaining 15 percent of the purchase price. The mortgage loan can either have a fixed or variable interest rate. The interest rates on mortgage loans are based on Finance Denmark's average bond rates for mortgage loans with fixed and variable interest rates, respectively. The administration rates come from the National Bank's lending statistics. In the period from 2003 to 2011, it is assumed that the administration rates are the same for both types of loans.

The average effective interest rate on new domestic loans, excluding overdraft accounts for housing purposes, from Denmark's Nationalbank is used for the interest rate on the bank loan. The housing burden can also be calculated with and without debt amortization. For single-family homes, the calculation is based on a couple with children purchasing a 140 sqm house, while for apartments (as used in figure 2.9), the basis is a couple without children purchasing an 80 sqm apartment. The size of the home remains constant in the calculation over time and across income/education levels.

Housing prices are based on square meter prices for single-family homes and apartments from Finance Denmark's housing market statistics. The purchase price is calculated by multiplying the square meter price by the size of the property. The property's valuation is determined by dividing its price by the distance percentages published by Statistics Denmark for sold properties. The distance percentage represents the average difference between the property's selling price and its actual property value before any adjustments and tax discounts. The land value is determined based on the average relationship between land values and property values for all properties of the same type in the same area.

Disposable incomes are calculated based on family incomes in Lovmodellen up to 2020 and projected using the growth in core income (wages and transfer incomes) for 2021-2023. The disposable incomes are not equalised for families and thus reflect the actual incomes of families. Furthermore, disposable incomes are calculated excluding the imputed rent value of owner-occupied homes, so that the value of owner-occupied homes is not included in both the numerator and denominator when calculating housing affordability. In the figures below, incomes are calculated for families nationwide consisting of a couple with children, where both adults have the same level of education. This does not account for regional differences in income development, such as the relatively stronger growth in Copenhagen.

The housing burden is a calculation example that may not necessarily reflect the housing burden experienced by individual families when purchasing a home. However, the example illustrates that the housing burden for an average single-family home is still at a moderate level, even though it has increased, *cf. figure a*. On the other hand, the expenses associated with buying a house in Copenhagen City with fixed-rate financing and amortization are at a very high level, *cf. figure b*.

Figure a The housing burden when buying a house – nationwide

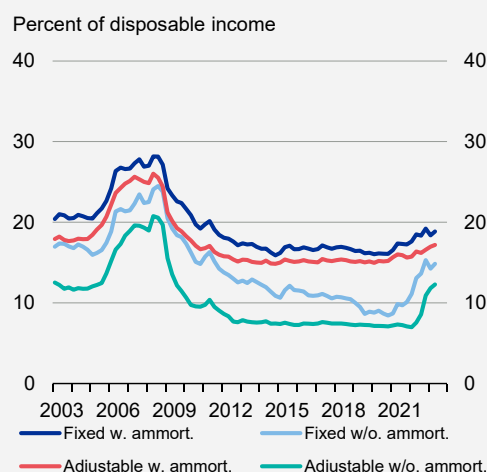
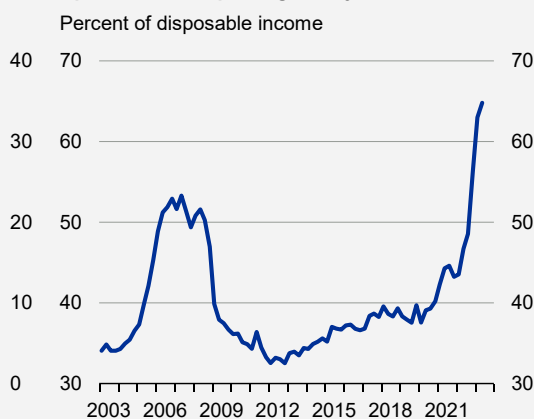


Figure b The housing burden when buying a 140 sqm house in Copenhagen City



Note: In figure a, a couple with children, where both are employed, is used, and the purchase of a single-family home is considered. In figure b, a couple with children, where both are employed and have short to medium-length higher education (KVVU/MVU), is used.

Source: Statistics Denmark, Denmark's Nationalbank, Finance Denmark, Boligsiden and own calculations.

2.3 Homeowners are generally financially robust

Household interest expenses have increased significantly due to the rise in mortgage interest rates. Thus, the average effective interest rate on loans from banks and mortgage lenders to households has increased by around 1.4 percentage points since the end of 2019, *cf. figure 2.10*. Together with the increase in the cost of living, this may lead to some households struggling to balance their household budget, although prospects of renewed income growth are pulling in the opposite direction. A noticeable part of the increase in interest rates has already been passed on, but there is still a significant amount of debt that has yet to be adjusted. Thus, the average effective interest rate incl. contributions for households' total mortgage debt was 3.0 per cent in July 2023, which is an increase of 1.4 percentage points relative to the beginning of 2022, but still somewhat below the average interest rate incl. contributions on new lending, which in July 2023 was 5.5 per cent.

Figure 2.10 The effective interest rate on household debt has increased

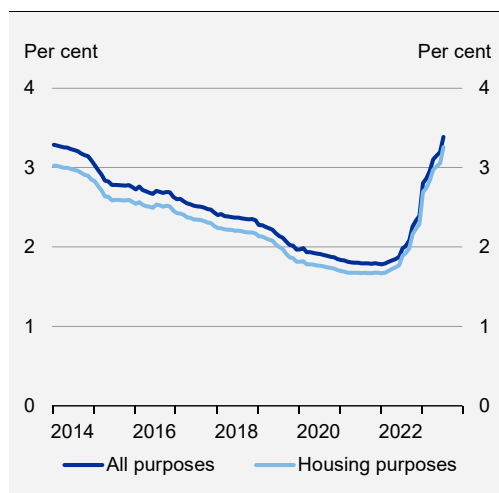
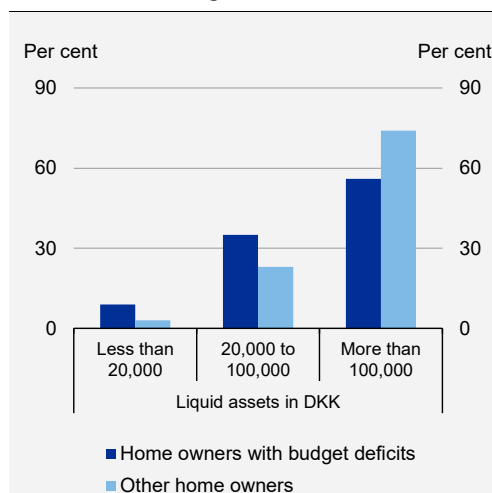


Figure 2.11 Most homeowners have liquid assets to counter budget deficits



Note: Figure 2.10 shows the average effective interest rate on the MFI sector's outstanding loans to households (excluding overdrafts). Figure 2.11 is from Financial Stability, 1st half 2023, Danmarks Nationalbank. The figure shows the total liquid assets of homeowners broken down by whether the household is expected to have a budget deficit in a situation with rising interest rates and falling real wages based on Danmarks Nationalbank's expectations for consumption and wage increases and market expectations for interest rate developments in 2023 in the March forecast. Liquid assets are calculated as homeowners' bank deposits, stock and bond holdings and mutual fund certificates.

Source: Danmarks Nationalbank.

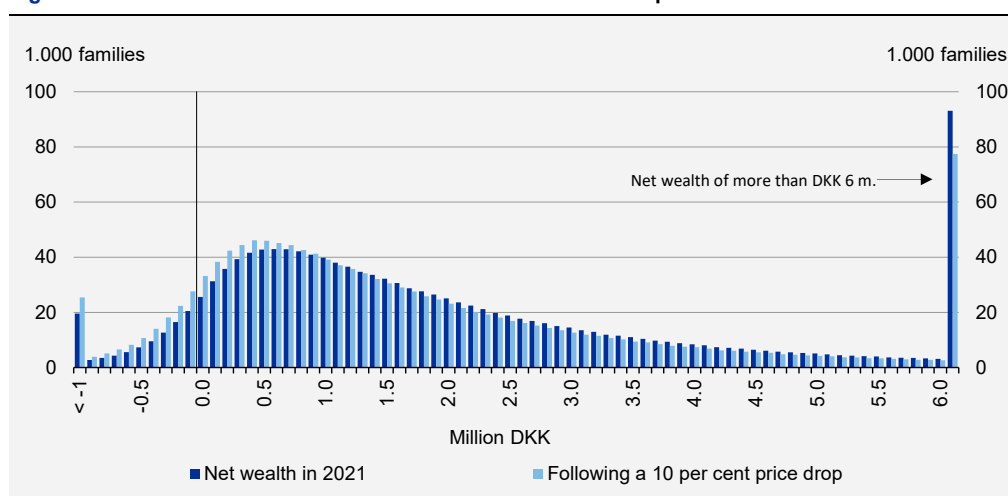
A calculation by Danmarks Nationalbank also shows that homeowners for whom expenses exceed income (budget deficit) as a result of rising interest rates and living costs as well as developments in the labor market have a lower level of liquid assets than other homeowners, *cf. figure 2.11*⁷. However, most homeowners with a budget deficit typically have sufficient liquid assets to counteract budget deficits for a longer period of time, as the budget deficit is often small compared to the monthly budget.

⁷ A budget deficit occurs if the cost of debt, fixed costs and calculated variable costs of a moderate standard of living exceed disposable income, see Financial Stability, 1st half 2023, Analysis no. 6, Danmarks Nationalbank, June 2023 and Martinnello, Meyer and Nissen, Homeowners' budgets and debt servicing capacity projections, Economic Memo, no. 4, Danmarks Nationalbank, June 2023.

Most homeowners also have significant home equity, which means that they will have positive net wealth even in the event of a major fall in house prices. An illustrative calculation shows that the vast majority of homeowners will still have positive net wealth after a 10% drop in the prices of condominiums and single-family houses, *cf. figure 2.12*.⁸

Whereas 90.6% of homeowners initially had a positive net wealth in 2021, this share drops to 86.8% after an assumed 10% fall in housing prices.⁹ The number of homeowners with a negative net wealth of more than DKK 1 m. increases by approx. 6,000 families in the illustrative scenario. The number of homeowners with a wealth of more than DKK 6 m. falls by almost 80,000 families.

Figure 2.12 Danish homeowners' wealth was resilient to house price declines in 2021



Note: Wealth excludes pension wealth and does not include wealth in cars, yachts, cash holdings, etc. The public property valuation in the wealth concept has been replaced with the market value of the home as calculated by Statistics Denmark. The net wealth size is depicted on the first axis in DKK million. The fall in house prices is calculated on the basis of a 10% fall in the market value of the individual homeowner's home as estimated by Statistics Denmark. No other derived effects have been included.

Source: Statistics Denmark and own calculations.

The share of homeowners with negative net wealth varies over time in line with fluctuations in house prices. In recent years, rising house prices have meant that the share of households with negative net wealth has fallen by 14 percentage points from a peak of just over 24% in 2012 to 10% in 2021.

However, calculations from Danmarks Nationalbank indicate that there are significant geographical differences in the extent to which homeowners' wealth is vulnerable to falling house prices. In a number of rural municipalities, more than 3% of homeowners had mortgages exceeding the value of the home (technical insolvency) before the fall in house prices. In several capital city municipalities, however, a similar proportion of technical insolvencies would only occur after a 25% drop in house prices.¹⁰

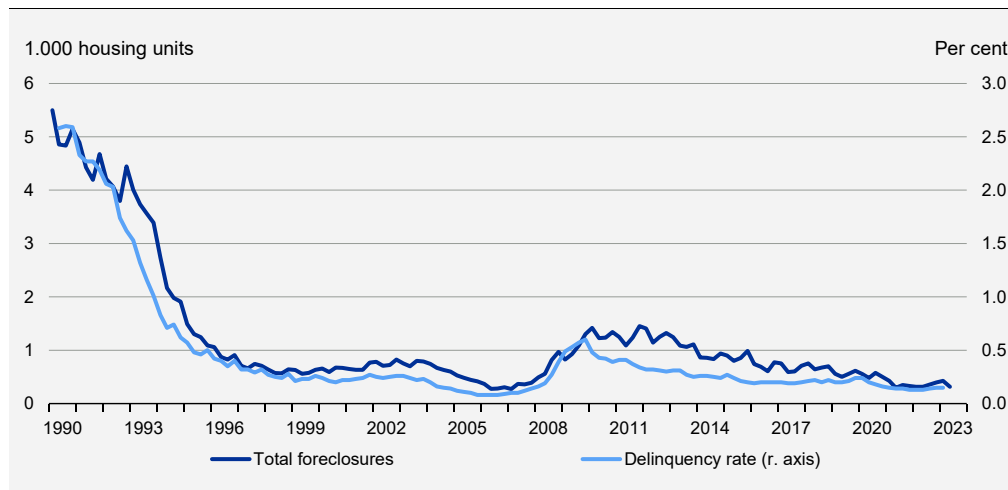
⁸ The net wealth figure does not include occupational pensions and cars, etc. Therefore, the majority of homeowners have a higher net worth than the calculation would suggest.

⁹ This is measured based on the face value of the outstanding debt.

¹⁰ Cf. Financial Stability, 1st half 2023, Analysis no. 6, Danmarks Nationalbank, June 2023.

Overall, the financial situation for homeowners remains extremely solid, which is also reflected in the fact that the number of delinquencies and foreclosures remains at a very low level from a historical perspective, *cf. figure 2.13*.

Figure 2.13 The number of homes in foreclosure and the share of delinquencies remain low



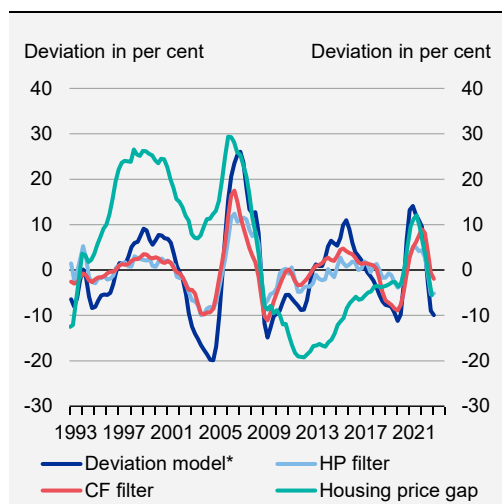
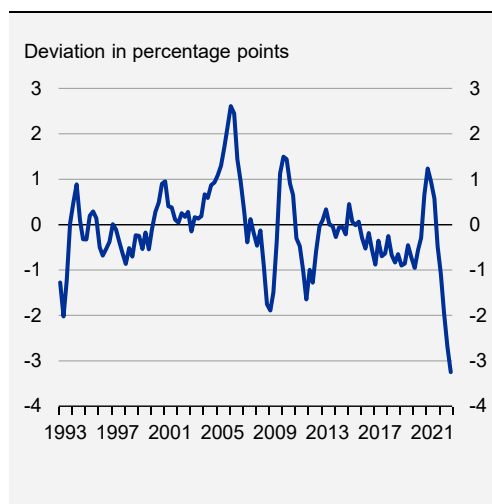
Source: Statistics Denmark and Finance Denmark.

2.4 Economic models indicate lower risk of housing price declines

Another approach to assess the prospects and risks of the housing market is to employ macroeconomic models to analyze how house prices have evolved in relation to the underlying driving forces and the effects of recent interest rate increases.

Various approaches exist to estimate what economic factors suggest housing prices "should" be. However, there is no model that can provide an ultimate truth, and therefore, this analysis is based on a range of different methods, as detailed in box 2.2. These various trend and model calculations generally indicate that the recent year's decline in house prices has brought them in line with or below the estimated structural level and growth, *cf. figure 2.14*. However, it should be noted that the actual price level often has an impact on the estimated structural level, particularly towards the end of the data period.

In general, the models suggest that house prices are between zero and ten percent below the trend level. The Systemic Risk Council's house price relation indicates that house price growth was generally zero to four percent below their estimated growth throughout 2022, *cf. figure 2.15*.

Figure 2.14 Models generally indicate that house prices have adjusted from high levels**Figure 2.15** The house price relation indicates that the recent growth is below the estimated level

Note: The deviation model in figure 2.14 reflects a weighted combination of trend deviations between house prices and GDP, consumer prices, construction costs and disposable incomes, respectively, as well as housing burden and housing loans relative to income. The housing price gap is estimated by Danmarks Nationalbank. For more information on models and filtering methods, refer to box 2.2. In figure 2.15, the Systemic Risk Council's cash price relation is displayed, showing the difference between the estimated and actual rate of price increase. The deviation is presented as a four-quarter moving average.

Source: Statistics Denmark, Macrobond, The Systemic Risk Council, Danmarks Nationalbank and own calculations.

Across the models, there are significant differences in the estimates of how much house prices are currently undervalued, but there is generally a strong co-movement over time. The overall impression from these models is that throughout 2021, there were tendencies of overvaluation in housing prices according to the models – both for houses and apartments, *cf.* table 2.1. This reflects, among other factors, that the model-calculated levels do not account for the temporary preference boost that affected housing prices during the pandemic.

Table 2.1 Indications that housing prices have transitioned from being overvalued to undervalued

	CF filter	HP filter	Deviation model	Housing price gap*	House price relation*	Bubble test*
4th quarter 2022/ 1st quarter 2023						
Houses	-	-	-	-	-	No
Condominiums	-	-	-		+	No
1st quarter 2021						
Houses	+	+	+	+	+	No
Condominiums	+	+	+		+	No

Note: A red minus indicates that housing prices, according to the specified model, are below their estimated level/trend (growth level for the cash price relation), while a green plus indicates they are above. An asterisk (*) marks that the latest observation is for the 4th quarter of 2022. The bubble test indicates whether real housing price increases exhibit "bubble-like" tendencies according to Danmarks Nationalbank's test, *cf.* box 2.2

Source: Statistics Denmark, Macrobond, The Systemic Risk Council, Danmarks Nationalbank and own calculations.

However, the prevailing trend has shifted according to most of the models, with the exception of the cash price relation for apartment prices, which continues to indicate higher price increases in apartment prices than what the models suggest (in the city of Copenhagen). Overall, the models indicate that housing prices have already undergone the necessary adjustment following the significant increases in 2020 and 2021.

Consequently, there may be an underlying basis for renewed growth in the housing market, suggesting that the stabilization observed in the housing market in recent months is sustainable. The model calculations are based on the current economic conditions and may change if there is a reversal, such as in employment, or if the interest rate level rises further.

Danmarks Nationalbank's bubble test for real price increases further indicates that there have been no bubble-like tendencies in either house or apartment prices, which otherwise would have implied that the development in housing prices had primarily been driven by expectations of further price increases during this upturn.

However, all model results should be interpreted cautiously since there are many factors not accounted for, including explicit expectations for the future economic development.

Calculations based on the new economic model, MAKRO, suggest that the changes in interest rates and interest rate expectations observed since 2021, in isolation, imply a decline in house prices of nearly 10 percent by 2024 with a domestic interest rate shock, assuming no additional shocks to expectations, *cf. box 2.3*.

In the case of a simultaneous interest rate shock both in Denmark and abroad, calculations point towards a decline of nearly 15 percent. MAKRO generally indicates that a 1 percentage point increase in interest rates, all else being equal, leads to a decrease in nominal housing prices of four to five percent (depending on the duration of the interest rate changes), which is generally slightly lower than the calculated effect in ADAM. Overall, the calculations suggest that there may be a risk of further declines in house prices due to the interest rate increases.

However, it is important to note that the calculations only account for the isolated effects of interest rate changes and do not take into consideration other factors such as prospects for continued high employment and real wage growth. These factors would counteract the model-calculated isolated effects of interest rate impacts.

The model-calculated effect of higher interest rates on house prices coincides with a much weaker GDP growth compared to the baseline scenario, whereas there has been relatively strong growth in GDP and employment in Denmark in 2021 and 2022. This should be seen in light of the fact that actual interest rate changes have been a response to developments in the real economy, while the calculations in MAKRO solely reflect the effect of this response.

Box 2.2 Model and trend calculations of the underlying level of house and apartment prices

Various model calculations can help qualify the development of price levels in the housing and apartment market and determine whether the development is sustainable. However, model calculations should not stand alone and should be interpreted with caution. Below, the methods and sources behind the various model estimates are described.

CF and HP filters

Both the CF and HP filtering of housing price developments aim to separate structural trends from cyclical fluctuations. The CF filter is based on Christiano & Fitzgerald (2003) and is used with an assumption that cyclical fluctuations in housing prices can last between one and ten years. The HP filter is based on Hodrick & Prescott (1997), and a smoothing parameter (λ) of 1,600 is used. One should be aware of the HP filter's endpoint bias, which can lead to misleading estimates for the most recent observations. Overall, Danish house price deviations from the HP filter closely align with the other models.

Deviation model

The deviation model is an extension of the CF filtering, where there are included a range of variables that drive housing prices. It is defined as the weighted deviation in percentage from the CF-filtered trend for the following variables:

- Price development relative to GDP
- Price development relative to disposable income
- Price development relative to construction costs
- Price development relative to consumer prices
- The housing burden
- Mortgage loans relative to incomes

The weighting of the indicators is based on the first component in a principal component analysis with the non-standardized series. The deviation model follows the approach in Hertrich (2019). Refer also to box 2.5.

Danmarks Nationalbanks housing price gap

Boligprisgabet er defineret som afvigelser mellem boligpris relativt til indkomst i forhold til en langsigtet trend udregnet ved en HP-filtrering med en udglætningsparameter (λ) på 400.000. Boligprisen er målt ved kontantprisen på enfamiliehuse og indkomsten ved fire kvartalers sum af husholdningernes disponible indkomst. Se detaljeret beskrivelse i: Det Systemiske Risikoråd: "Data for den kontracykliske kapitalbuffer".

The housing price gap is defined as deviations between housing prices relative to income compared to a long-term trend calculated by a recursive HP filter with a smoothing parameter (λ) of 400,000. Housing prices are measured by the market price of single-family houses, and income is defined as the sum of household disposable income over four quarters. For a detailed description, see: The Systemic Risk Council: "Data for the countercyclical capital buffer."

The Systemic Risk Councils house price relation

The house price relation shows the percentage deviation between estimated and actual house price growth, calculated as a four-quarter moving average. The model includes several factors, which can describe short-term developments, such as the change in house prices in the previous period and interest rate changes, while long-term house prices are determined by household housing demand. The house price relation is described in Dam et al. (2011) and Hviid et al. (2016).

Danmarks Nationalbanks housing bubble test

Danmarks Nationalbank's bubble test is based on a housing price index adjusted for developments in fundamental factors, including income and the housing stock. If the test statistic exceeds the critical value, it indicates "bubble-like" real housing price increases.

Source: Hertrich (2019): A novel housing price misalignment indicator for Germany, Deutsche Bundesbank; The Systemic Risk Council's heatmap and data for the counter cyclical capital buffer; Macrobond; Dam et al (2011): Developments in the Market for Owner-Occupied Housing in Recent Years – Can House Prices be Explained?; Hviid et al. (2016): Regional aspects of the housing market; Danmarks Nationalbank and own calculations.

Box 2.3 Effects of higher interest rates on the housing market in MAKRO and ADAM

In recent years, there has been a significant tightening of the financial conditions in the global economy. Higher interest rates have a substantial impact on economic activity, especially in the housing market, where more expensive borrowing options typically result in fewer housing transactions and lower housing prices.

This box sheds light on the consequences of recent years' interest rate increases on the housing market, calculated using the macroeconomic models MAKRO and ADAM. Each model provides an estimation of the effects of these interest rate hikes based on economic theory and observed historical relationships. These calculations do not attempt to illustrate the combined effects on the housing market of all factors affecting the economy, including the high level of employment and the outlook for renewed growth in real wages. Instead, they focus solely on the isolated effects of interest rate changes. The calculations presented are shown for changes in Danish interest rates alone and for changes including a dampening effect of correspondingly higher interest rates abroad on Danish export market growth and foreign prices (i.e., export competitive prices and Danish import prices).

The effects are calculated in both MAKRO and ADAM, and the differences in results help provide an impression of the uncertainty regarding the effects of interest rate changes. Discrepancies in the models' results mainly stem from differences in the empirical approaches behind the models and their different model specifications. This includes disparities in formation of expectations, where MAKRO utilises forward-looking expectations. Additionally, technical differences in the models' baseline scenarios can also play a role in these variations.

In MAKRO, the interest rate shock is designed as a sequential shock to the agents' observed and expected interest rate curves, divided into two shocks. The calculation is based on the interest rate expectations from Ministry of Finance's medium-term projections from August 2021. The first shock reflects the interest rate change from August 2021 to August 2022, while the second shock represents the change from August 2022 to August 2023. The two shocks are based on interest rate changes in the first three years, after which the interest rate shock is assumed to be phased out for calculation purposes. This corresponds to the idea that agents' expectations are consistent with the development in the medium-term projections in 2021, 2022, and 2023, and they update their expectations over this period, *cf. figure a*.

To account for the fact that the tightening of financial conditions is a global phenomenon, a shock is implemented for the export market and foreign prices. The sequential interest rate changes since 2021 are translated into a shock profile for exports and foreign prices through an econometric model of the U.S. economy from Bauer and Swanson (2023), *cf. figure b*. This isolates the marginal effect of interest rate increases on the export market and foreign prices. As mentioned, the actual development of housing prices depends on many factors beyond interest rate developments, and this analysis does not show the complete development of housing prices since 2021. In MAKRO, the shocks to both interest rates and the export market are announced sequentially in 2022 and 2023, so the shocks are not anticipated by economic agents before then. Since ADAM does not have forward-looking behavior, the shock to interest rates and foreign conditions is implemented as the sum of the sequential shocks in MAKRO.

Figure a Sequential shock profile for the interest rate

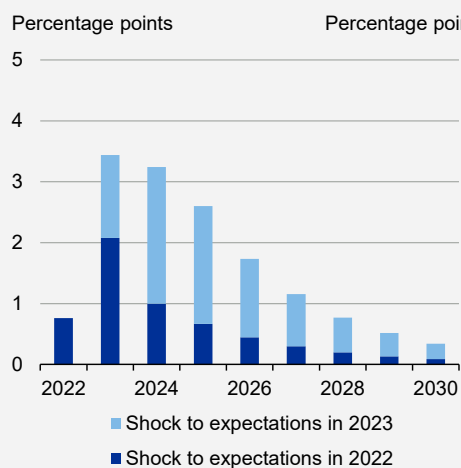
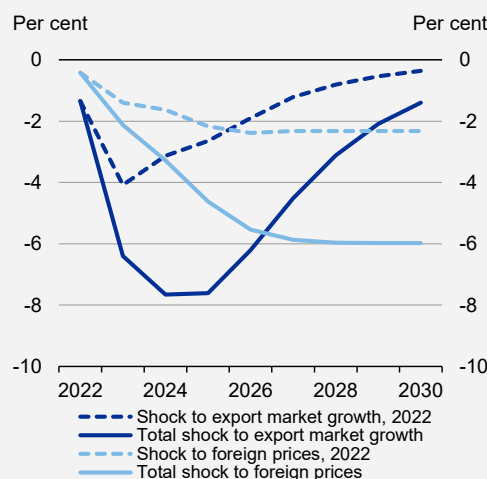


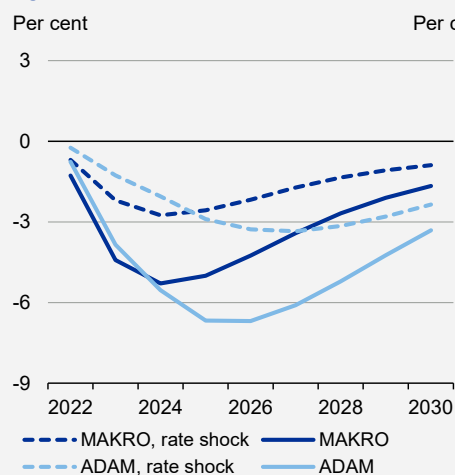
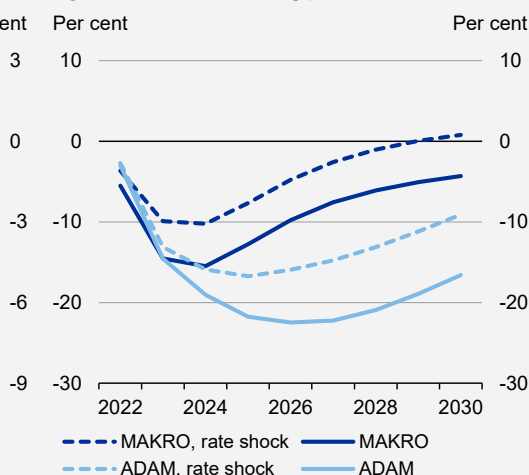
Figure b Sequential shock profile for foreign conditions in MAKRO



Box 2.3 (continued) Effects of higher interest rates on the housing market in MAKRO and ADAM

A global increase in interest rates has a negative effect on the GDP level in both models, *cf. figure C*. There are differences in the magnitude and timing of the impact in the models. Agents in MAKRO have forward-looking behavior and, therefore, react to both observed and expected interest rate increases. This means that there is a relatively larger first-year effect in MAKRO. In ADAM, consumers do not have forward-looking expectations, which means that the effect of the interest rate shock occurs more gradually in the economy, but the effects build up to overall larger impacts on GDP and housing prices. The effects are increased in both models when it is taken into account that higher interest rates also (all else being equal) dampen growth and inflation abroad as compared to the isolated interest rate change in Denmark.

The global interest rate increase also has a significant effect on the housing market, where housing prices fall in both models, *cf. figure d*. This reflects that higher interest rates reduce the consumption and investment appetite of Danish households and businesses and make it more expensive to own a home. Part of the effect comes from the fact that a shock to the foreign conditions has indirect effects on the Danish economy and thereby the Danish housing market. The nominal housing price falls by 10 per cent in MAKRO in 2024 with an isolated Danish interest rate shock, while in ADAM, housing prices fall by 17 per cent in 2025. With a parallel shock to interest rates in both Denmark and abroad, there will be a larger effect on housing prices, which fall by 15 per cent in MAKRO in 2024 and 22 per cent in ADAM in 2026. For the interest rate increases considered in the analysis, this corresponds to a 1.0 percentage point increase in interest rates leading to a 4.5 per cent decrease in nominal housing prices in MAKRO and a 6.5 per cent decrease in ADAM.

Figure c Real GDP**Figure d Nominal housing price**

Note: Michael D. Bauer, Eric T. Swanson (2023). A Reassessment of Monetary Policy Surprises and High-Frequency Identification. NBER Macroeconomics Annual. The dashed lines in figure c and d indicate the effect of an isolated Danish interest rate shock without an impact on export market growth and foreign prices.

Source: Statistics Denmark and own calculations.

Another modeling approach involves using a statistical risk model for house price growth, referred to as a "growth-at-risk" framework.¹¹ Based on a set of financial and macroeconomic variables, as well as variables related to the housing market, this model provides a probability distribution for house price growth when looking four quarters ahead, *cf. box 2.4*. Like all other model calculations, it is important to emphasize that the estimates are subject to uncertainty, and the results should not be interpreted as an actual forecast.

The main conclusions from this model are that the probability of house price declines, when looking one year ahead from the 1st quarter of 2023, has significantly decreased from the relatively high levels observed in 2021 and 2022, *cf. figure 2.16*. This should be seen in light of the significant decline in housing prices over the past year and the positive price developments into 2023.

The model's results suggest that in the 1st quarter of 2024, based on information available in the 1st quarter of 2023, there is a nearly 35 percent probability that the annual growth will be negative. The model's median estimate, which represents a 50 percent probability of both higher and lower growth, stands at 1.0 percent, *cf. figure 2.17*. The mean value is close to zero, reflecting that very negative outcomes have a higher probability than very positive outcomes. Thus, the model assigns a five percent probability that house prices will have fallen by 6.1 percent or more. However, it is important to interpret the precise estimates cautiously, as the results will depend, among other factors, on the included variables and the considered time period.

¹¹ The approach follows Adrian, T., Boyarchenko, N., & Giannone, D. (2019): Vulnerable growth. *American Economic Review*, 109(4), 1263-1289. Similar models have also been developed for Denmark, encompassing both GDP and housing prices, as seen in Cucic, Møller, Yordanova & Søndergaard (2022): En evaluering af makroprudentiel politik ved brug af growth-at-risk-modeller, Danmarks Nationalbank.

Figure 2.16 Risk model points to a reduced risk of housing price declines

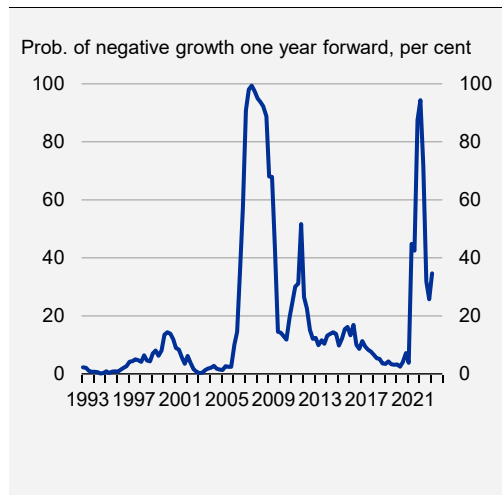
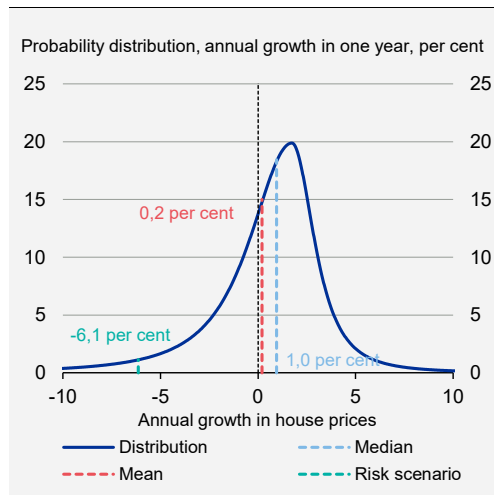


Figure 2.17 However, uncertainty exists in both to the upside and downside



Note: The figures display model-estimated probabilities and do not represent an actual forecast. For a description of the calculations, please refer to box 2.5.

Source: Macrobond, Prasad et al. (2019): Growth at Risk: Concept and Application in IMF Country Surveillance, IMF working paper; Lafarguette, R. (2019): Growth at Risk Tool: Technical Appendix., mimeo, IMF; Statistics Denmark and own calculations.

Box 2.4 House-prices-at-risk model indicate a more normal risk outlook for house prices

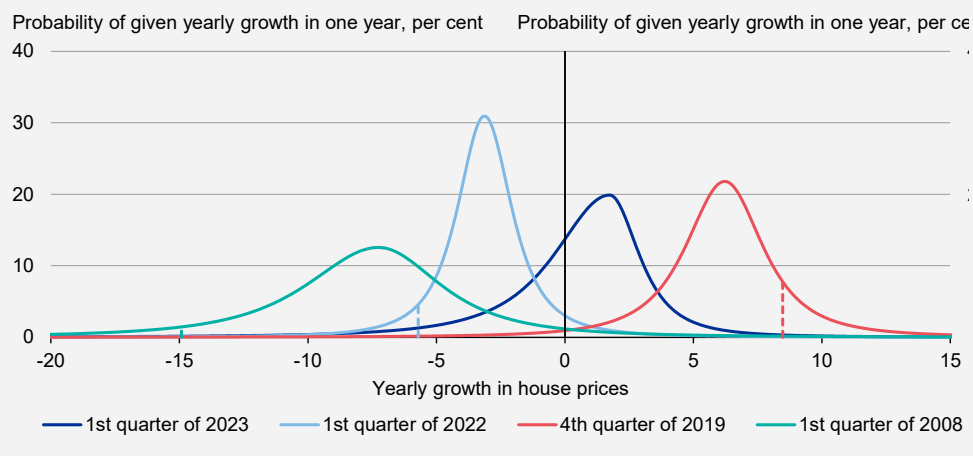
There will always be uncertainty associated with the future development of house prices, just as with all other macroeconomic variables. However, the uncertainty varies significantly over time. In this box, a model is presented that can shed light on the model-expected development as well as the associated uncertainty. The model is based on a framework that, based on selected macroeconomic and financial variables at a given point in time, attempts to map possible outcomes for nominal house price growth one year (four quarters) ahead.

The model's estimates are based solely on how house prices have evolved in interaction with the selected variables and are calibrated for the period from the 1st quarter of 1993 to the 1st quarter of 2023. Therefore, the model cannot directly account for e.g. expected changes in structural factors, such as the new housing tax system set to be implemented in 2024. For details on the model's underlying assumptions, please refer to the technical appendix.

The model indicates that looking one year ahead from the most recent quarter (1st quarter of 2023), the risks are considerably lower compared to the beginning of 2022, *cf. figure a*. The likelihood of negative house price growth has decreased, and the general uncertainty about house price outcomes has also been reduced. This is primarily due to the fact that house prices have moved from being significantly above to being in line with or below the structural level implied by other macroeconomic variables, *cf. the deviation model, box 2.2*. Similarly, the model suggests that the probability of house price declines is much lower than, for example, at the end of 2007. The current estimates indicate that positive year-on-year growth in house prices in the 1st quarter of 2024 is the most likely scenario. Hence, over 65 per cent of the distribution for the year-on-year growth rate in the 1st quarter of 2024 is greater than zero. However, it is worth noting that the distribution is still skewed to the left as compared to the end of 2019. This means that there is still a greater likelihood of house price declines relative to a year that was more of a "normal year" for the economy. Likewise, the model suggests that there is less likelihood of very positive growth rates compared to the end of 2019.

In conclusion, the model suggests that the risks of further declines in housing prices have been significantly reduced since 2021. It is important to emphasize that the model's predictions do not constitute an actual forecast, but nonetheless, it provides another indication that the adjustment in the housing market may soon be completed.

Figure a Large fluctuations in the risk outlook of housing price growth over time



Note: Dashed lines show actual year-on-year growth four quarters later. Please note that the results are based on the calibration of the entire period and would look different if the estimates were shown in real-time. Estimates are particularly sensitive to the exclusion of fluctuations around the financial crisis.

Source: Statistics Denmark and own calculations.

2.5 Prospects for a housing market recovery

The improvement in the housing market in recent months, particularly the increase in turnover, may be a sign that house prices are stabilizing.

The relatively limited decline in nominal house prices despite an increase in the long-term mortgage rate of just over 3¼ percentage points since the start of 2022 should be seen in the context of several indicators and model calculations suggesting that house prices are not out of line with underlying economic drivers such as incomes, even when higher interest rates are taken into account. At the same time, the rise in employment has helped support household incomes and thus housing demand. As mentioned above, the tightening of lending rules in the years following the financial crisis also meant that the lower interest rates in the years before 2022 did not fully pass through to house prices.

The potential for renewed growth in the housing market should be seen in light of the fact that the housing burden for single-family homes is not high in a historical perspective. Thus, there are no signs that house prices nationwide are out of step with the financial capacity of potential home buyers. Prospects for growth in real incomes and a continued high level of employment will thus support demand.

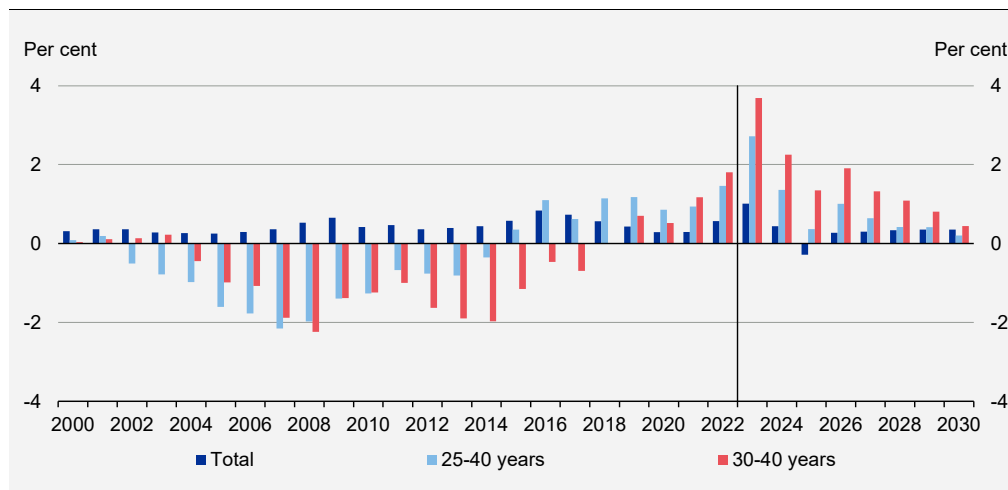
Model calculations, as described above in section 2.4, also suggest that the house price declines may soon be over. However, it should be emphasized that these calculations are subject to considerable uncertainty and there is still significant uncertainty about the development of house prices. In particular, there is still a non-negligible estimated risk of price declines up to 2024. This risk should also be seen in light of the fact that, according to the economic model MAKRO, a global increase in interest rates of just over 3 percentage points is estimated to lead to a 16% drop in house prices, and that the adjustment will be gradual towards 2024. A sharper turnaround in the labor market with a larger drop in employment could also contribute to an increased dampening of optimism and purchasing power among home buyers.

The future development of house prices will depend on the development of interest rates. There are widespread expectations that interest rates will fall back somewhat in the slightly longer term as a result of declining inflation and the prospect of relatively moderate growth in the global economy, *cf. chapter 7*. If these expectations do not hold true, there is a risk of further increases in long-term interest rates, which will have a negative impact on the housing market.

Furthermore, population growth and changes in housing patterns will also contribute to supporting housing demand and thus also the demand for owner-occupied housing in the coming years. In 2023 and the following years, there will be a significantly higher growth in the population in the 25-40 age group, *cf. figure 2.18*. This development is expected to help boost demand for owner-occupied housing, as a large proportion of first-time buyers of single-family homes are from this age group. For example, in 2020, 45% of first-time buyers were in the 25-40 age group.¹² Although some home buyers may have postponed buying a home during the COVID-19 pandemic in 2020-2021, there may still be a significant number of buyers in the coming years.

¹² J. Holmgaard og A. Andersen, Hvem er det, der køber enfamiliehuse?, *DST Analysis, October 2020*.

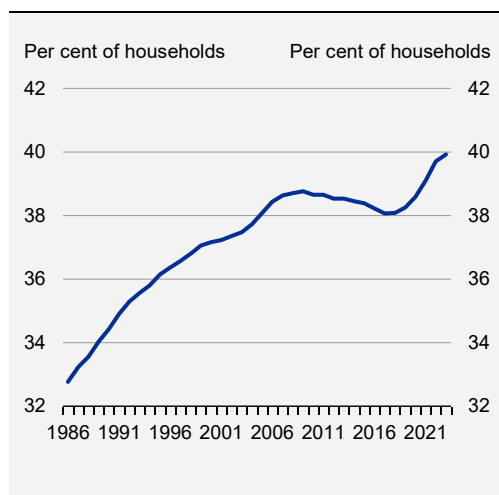
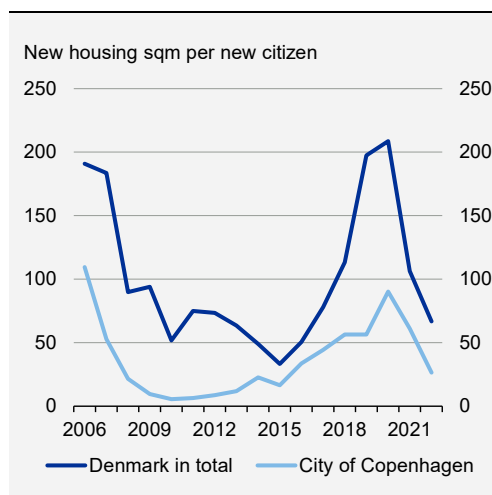
Figure 2.18 High population growth in the age groups that make up a large portion of first-time buyers



Note: Estimates for 2023-2030 are from Statistics Denmark's population projections.
Source: Statistics Denmark and own calculations.

Secondly, housing demand is also affected by changes in family and residential patterns. In this context, it is particularly noteworthy that housing demand is likely to be boosted by an increasing proportion of the population living alone. Since the early 2000s, the share of households consisting of only one person has increased by almost 3 percentage points, *cf. figure 2.19*. A significant part of this increase is due to the fact that more people in the 45-60 age group live alone compared to before.¹³ All other things being equal, this increases the need for the number of homes and thus also the demand for owner-occupied housing, even though young and middle-aged single people often rent.

¹³ See e.g. Se fx C. Liliegreen, Flere midaldrende enlige, Magasinet no. 37, March 2023, The Knowledge Centre for Housing Economics.

Figure 2.19 An increasing proportion of households consist of only one person**Figure 2.20** Construction in the city of Copenhagen has been limited in proportion to the population

Note: The figure in figure 2.20 is calculated on the basis of Statistics Denmark's calculation of completed newly built square meters of farmhouses, detached houses, terraced, linked and semi-detached houses, multi-dwelling houses and student hostels in proportion to the change in the population

Source: Statistics Denmark and own calculations.

Housing prices in some of the areas where price levels and housing burdens are higher are supported by the fact that supply has struggled to keep up with demand. Significantly fewer square meters of new housing have been built in the Greater Copenhagen area than in the rest of the country in relation to population growth, *cf. figure 2.20*.

This development should be seen in the context of significant population growth in the city of Copenhagen. At the same time, new construction in the city of Copenhagen has been relatively limited in the years following the financial crisis. This has contributed to the number of square meters of housing per capita in the city of Copenhagen remaining below the 2010 level. As mentioned, the owner-occupied housing market also accounts for a significantly smaller share of the total housing stock in the city of Copenhagen than for the country as a whole.

In the years following the financial crisis, population growth and the development in housing supply have contributed to explaining the higher price increases in Copenhagen. In the coming years, population growth is expected to be primarily centered around the capital and in East Jutland, and it is also here that the share of vacant homes is the lowest.

A third factor that will affect the housing market in the coming years is the new system for housing taxation, which will come into force on January 1st, 2024. Overall, total housing taxation is expected to remain at an unchanged level. However, this covers a slightly lower tax assessment for most single-family houses, while tax payments for buyers of owner-occupied flats will be higher from 2024 onwards due to higher land value assessments, which were undervalued under the old system.¹⁴

¹⁴ Cf. *Skatteøkonomisk Redegørelse 2018*, The Danish Ministry of Taxation.

Furthermore, it is only to the extent that house prices do not already reflect the new tax system that it will have an effect on house prices. A significant part of the effect may already be incorporated in house prices, as the principles behind the new property tax rules were already agreed on in 2017.

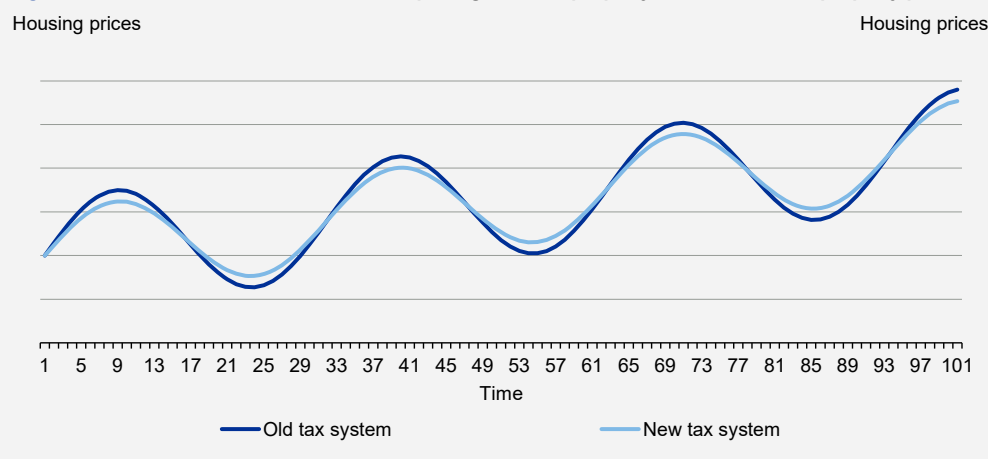
The new housing tax system will help dampen future fluctuations in house prices and the Danish economy compared to the current system, see box 2.5. This is because from 2024, housing taxes will follow the assessments. In times of housing price booms, assessments will rise, and homeowners' tax payments will therefore increase. All else being equal, this will help to reduce the increase in house prices, as homebuyers' willingness to pay is reduced due to the higher taxes now being paid. Conversely, valuations and tax payments will fall during periods of housing market downturns, thereby also helping to reduce price declines. However, it is possible for homeowners to freeze increases in property taxes until the time of sale, so positive fluctuations in house prices are not necessarily fully cushioned.

Box 2.5 The new housing tax system will dampen fluctuations in house prices

The new housing tax system entails that from 2024, housing taxes will follow the development in housing prices, whereas this is to a lesser extent the case under the current tax rules. In the new housing tax system, rising house prices will lead to higher housing taxes, which will reduce price increases, while falling house prices will lead to lower housing taxes, which will dampen a fall in house prices. This reduces the fluctuations in house prices, *cf. figure a*.

Calculations from Danmarks Nationalbank indicate that fluctuations can be reduced by around one fifth, *cf. Klein et al. (2016)*. However, there are differences across homes, depending on a number of property-specific conditions and the level of the municipal land tax rate.

Figure a Illustration of the fluctuation-dampening effect of property taxes that follow property prices



Note: The depiction in figure a is illustrative and follows Klein, et al. (2016) and the Danish Ministry of Taxation (2018).

Source: Skatteøkonomisk Redegørelse 2018, The Danish Ministry of Taxation and Klein, et al. (2016), House price bubbles and the advantages of stabilising housing taxation, Monetary Review, 3rd Quarter 2016, Danmarks Nationalbank.

Box 2.5 Appendix for “growth-at-risk”-model

The model in box 2.3 is based on a growth-at-risk setup, which aims to estimate the probability of given developments in house price growth. In addition, quantile regressions are used to investigate how a number of financial and macroeconomic variables can explain the overall house price growth distribution one year ahead. Specifically, the following equation is used as a starting point:

$$h_{t+4} = \alpha^\tau + \sum_{i \in I} \beta_i^\tau X_{i,t} + \varepsilon_{i,t}^\tau$$

Here h_{t+4} denotes house price growth four quarters into the future. τ denotes the given fractile of the distribution to be investigated. $X_{i,t}$ denotes the selected explanatory variables in period t , which are described below:

- **Financial index:** Based on a number of financial variables related to interest rate development, the stock market and credit development, an overall index is created using the first component from a principal component analysis. The literature on growth-at-risk generally indicates that financial conditions are an important driving force behind the development of tail risks, see e.g. Adrian (2019) and IMF (2021).
- **Macroeconomic conditions:** A weighted index of the development of GDP, employment, private consumption and wages. Weighted using the first component of a principal component analysis. This explanatory variable aims to capture macroeconomic fluctuations relevant to house price developments.
- **House price growth:** Annual growth in house prices based on Statistics Denmark's main index.
- **Acceleration term:** The acceleration term is defined as the squared house price growth, multiplied by -1 if negative. This term aims to capture the general uncertainty of house price growth when there are large fluctuations in prices.
- **House price fundamentals:** This term contains a weighted index of the trend deviation of house prices from GDP, consumer prices and construction costs, as well as the housing burden and housing loans to income ratio. Trends are calculated using a CF filter and the weighting is based on the first component of a principal component analysis. The term aims to capture the longer-term fluctuations in house prices from the housing market fundamentals above.

Based on the above explanatory variables and quantile regressions at the 5th, 10th, 25th, 50th, 75th, 90th and 95th percentiles, an overall distribution for the projection of house price growth one year ahead is estimated. This is done using a t-skewed distribution. The model is based on data from Q1 1993 through Q1 2023. The calculations are based on Prasad et al. (2019) and Lafarguette, R. (2019).

Source: Prasad et al. (2019), "Growth at Risk: Concept and Application in IMF Country Surveillance", IMF working paper; Lafarguette, R. (2019) "Growth at Risk Tool: Technical Appendix." mimeo, IMF; Adrian, T., Boyarchenko, N., & Giannone, D. (2019). Vulnerable growth. *American Economic Review*, 109(4), 1263-1289; Deghi, A., Katagiri, M., Shahid, M. S., & Valckx, N. (2020). Predicting downside risks to house prices and macro-financial stability. International Monetary Fund; Statistics Denmark and own calculations.



Annex tables

Table B.1 Demand, import and production

	2022	2023	2024	2022	2023	2024	2022	2023	2024
	DKK bn.			Volume, per cent			Prices, per cent		
Private consumption	1,225	1,279	1,337	-1.4	0.6	1.5	7.5	3.8	3.0
Public consumption ¹⁾	617	645	682	-2.8	1.5	2.1	3.6	3.0	3.6
Public investments ²⁾	89	95	99	0.3	3.6	0.8	5.2	3.4	3.2
Residential investment	148	134	136	-8.5	-12.9	-2.1	7.3	4.2	3.3
Business fixed investment	380	379	380	9.2	-3.6	-2.0	5.2	3.4	2.2
Domestic demand excl. inventory investment	2,460	2,535	2,637	-0.7	-0.5	0.9	6.0	3.6	3.1
Inventory investment ³⁾	57	15	12	0.4	-1.7	-0.1			
Total domestic demand	2,517	2,550	2,649	-0.3	-2.3	0.8	6.1	3.7	3.1
Exports of goods and services	1,983	1,943	2,045	10.8	5.4	3.4	19.5	-7.0	1.8
Total demand	4,500	4,493	4,693	4.0	1.1	1.9	11.6	-1.2	2.5
Imports of goods and services	1,668	1,703	1,784	6.5	0.9	2.8	18.1	1.2	1.9
Gross domestic product	2,832	2,789	2,909	2.7	1.2	1.4	8.1	-2.6	2.9
Taxes on products, net	337	333	351	-3.0	-0.3	0.2	5.4	-0.8	5.1
Gross value added	2,495	2,456	2,558	3.6	1.4	1.6	8.4	-2.9	2.6
- Non-farm private sector ⁴⁾	1,612	1,724	1,797	4.2	2.2	1.1	3.6	4.7	3.2
Gross national income	2,929	2,852	2,971						

Note: The division into volume and price components is made based on a fixed price calculation in the previous year's prices.

- 1) The change in volume for public consumption is calculated using the output method. For 2023-2024, 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 service excluding shipping.

Source: Statistics Denmark and own calculations.

Table B.2 Interest rates, oil price, exchange rates and external assumptions

Interest rates, per cent		2020	2021	2022	2023	2024
USA	Federal Funds Target Rate	0.5	0.3	1.9	5.2	5,3
	3-month LIBOR	0.7	0.2	2.4	5.4	5,3
	10-year government bond	0.9	1.4	3.0	3.8	3,9
Euro area	Main Refinancing Operations Rate	0.0	0.0	0.6	3.8	4,4
	3-month EURIBOR	-0.4	-0.6	0.8	3.4	3,6
	10-year government bond (Germany)	-0.5	-0.3	1.1	2.4	2,5
Denmark	Certificates of deposit rate	-0.6	-0.6	0.0	2.9	3,5
	3-month CIBOR	-0.2	-0.2	0.6	3.5	3,7
	1-year adjustable mortgage rate	-0.5	-0.5	0.9	3.5	3,7
	10-year government bond	-0.4	-0.1	1.4	2.7	2,8
	30-year mortgage interest rate	1.1	1.5	3.7	4.7	4,7
	Average interest rate	0.3	0.4	1.4	3.6	3,7
Oil price						
Dollar per barrel		41,8	70.7	100.8	81.1	81.4
DKK per barrel		273,2	444.4	713.1	556.3	547.0
Exchange rate						
DKK per 100 dollar		654,2	628.7	707.6	686.0	672.1
DKK per 100 euro		745,4	743.7	744.0	744.7	745.2
Effective Krone Rate Index (1980=100)		104,0	103.9	101.9	104.4	105.4
Real growth rate, per cent						
External assumptions						
Export market growth ¹⁾ , per cent		-4.7	10.2	7.2	0.8	3.0
Trade weighted GDP-growth ²⁾ , per cent		-3.7	5.2	3.0	1.3	1.8

Note: The projections are based on data through August 1st, 2023. 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 2022, as well as futures prices.

- 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 2021.
- 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 2021.

Source: Macrobond, Nordea Markets, The International Energy Agency, OECD Economic Outlook June 2023, IMF World Economic Outlook Update July 2023 and own calculations.

Table B.3 Population and labour market

	2020	2021	2022	2023	2024
1,000 persons					
Total population	5,831	5,857	5,890	5,916	5,934
- Labour force	3,113	3,156	3,242	3,283	3,279
- Total employment	2,981	3,052	3,168	3,200	3,187
- Ordinary employment ¹⁾	2,891	2,956	3,065	3,091	3,073
- Subsidised employment ²⁾	90	96	103	109	114
- Gross unemployment (incl. activation) ³⁾	133	106	76	85	94
- Net unemployment	120	94	65	70	76
- Outside the labour force	2,718	2,700	2,647	2,634	2,655
- Recipients of unemployment benefits and cash benefits in activation outside the labour force	92	85	80	78	76
- Early retirement pensioners outside the labour force	3	11	18	24	27
- Senior pensioners outside the labour force	48	52	47	35	27
- Voluntary early retirement	951	947	943	937	933
- Persons under 15 years	982	978	963	965	979
	451	430	392	384	402

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 flex jobs and light duty 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 including leave

	2020	2021	2022	2023	2024
1,000 persons					
Employment, total	2,981	3,052	3,168	3,200	3,187
- Service industries	1,573	1,623	1,708	1,731	1,725
- Construction	194	203	211	210	203
- Manufacturing	291	281	291	294	291
- Agriculture	71	71	70	70	70
- Public sector	833	853	865	873	876

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

	2020	2021	2022	2023	2024
1,000 persons					
Gross unemployment	133	106	76	85	94
- per cent of workforce	4.3	3.4	2.3	2.6	2.9
Net unemployment	120	94	65	70	76
LFS unemployment (per cent)	5.6	5.1	4.5	5.1	5.7

Note: Differences in the definition of the labour force between the Ministry of Economic Affairs and the Ministry of Finance on one side and Statistics Denmark on the other means 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.

	2020	2021	2022	2023	2024
1,000 persons					
Unemployment benefits (excl. activation)	102	82	55	57	63
Cash benefits (excl. activation)	85	75	64	63	65
Recipients of unemployment benefits and cash benefits in activation ¹⁾	24	22	21	24	27
Holiday benefit	3	2	2	2	2
Early retirement pensioners ²⁾	211	219	226	233	233
Senior pension	3	12	19	26	29
Resource assessment benefit	36	33	38	35	35
Voluntary early retirement	48	52	47	35	27
Early retirement	0	0	7	12	14
Flex job scheme benefit	3	3	3	2	2
Disablement rehabilitation benefit ³⁾	3	2	2	1	1
Sickness benefit ⁴⁾	76	86	86	75	78
Maternity leave	51	54	53	55	51
Benefit for unemployed	18	16	13	15	15
Self-support, home-travelling and transitional benefits ⁵⁾	12	10	14	15	11
Total	675	668	650	650	654
Student grant (SU)	318	315	300	302	297
Total, including SU	993	983	950	952	951
Pensioners	1,132	1,118	1,102	1,103	1,120
Total, including SU and pensioners	2,125	2,101	2,052	2,055	2,071
Subsidised employment ⁶⁾	90	96	103	109	114
Total, including SU, pensioners and subsidised employment	2,215	2,196	2,155	2,164	2,185

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 subsidised 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) Early retirement and retirement pension include pensioners living abroad as well as pensioners, who are employed.
- 3) Excl. persons on disablement rehabilitation 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) The number of self-support and home-travelling as well as transitional benefits are calculated excl. recipients of 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

	2022	2020	2021	2022	2023	2024
	DKK bn.	Real growth rate, per cent				
Gross fixed capital formation	616	4.3	6.6	3.2	-4.7	-1.6
Divided into groups:						
- Construction investments	295	5.0	9.7	-3.8	-5.1	-1.9
- Tangible and intangible investments	321	3.8	3.4	10.4	-4.3	-1.3
Divided into groups:						
- Residential investments	148	9.1	10.0	-8.5	-12.9	-2.1
- Public investments ¹⁾	88	13.8	-3.1	0.8	4.3	0.6
- Total business investments	380	0.0	7.8	9.2	-3.6	-2.0
- Construction investments	98	-3.4	11.4	0.7	2.0	-2.7
- Tangible and intangible investments	281	1.5	6.3	12.3	-5.5	-1.7

1) Public investments are incl. public acquisitions of buildings, which is why numbers differ from what is stated in table B.1.
Source: Statistics Denmark and own calculations.

Table B.8 Balance of payments

	2020	2021	2022	2023	2024
DKK bn.					
Goods exports	782	886	1,050	1,146	1,215
Goods imports	676	813	989	951	1,011
Goods balance, total	106	73	61	196	203
Service exports	497	611	933	797	830
Service imports	453	513	680	753	773
Service balance, total	44	98	253	44	57
Balance of goods and services	150	171	314	239	261
- Per cent of GDP	6.5	6.7	11.1	8.6	9.0
Investment income from abroad, net	87	110	114	80	80
Wage income from abroad, net	-14	-15	-18	-19	-20
EU payments, net	-16	-16	-12	-16	-13
Other current transfers from abroad, net	-24	-24	-16	-18	-21
Net transfers from abroad, total	33	55	68	27	26
Current account, total	183	226	383	266	287
- Per cent of GDP	7.9	8.9	13.5	9.6	9.9
Net assets against other countries	1,626	1,928	1,757	2,333	2,923
- Per cent of GDP	70.0	75.6	62.1	83.6	100.5

Source: Statistics Denmark and own calculations.

Table B.9 Exports and imports

	2022	2020	2021	2022	2023	2024
	DKK bn.	Real growth rate, per cent				
Exports						
Goods, total	1,050	-0.6	10.4	7.1	6.1	4.0
- Agricultural goods etc.	148	2.0	5.1	-1.7	-0.8	1.7
- Industrial goods (excl. ships etc.)	776	0.5	9.7	10.7	8.8	3.3
- Other goods ¹⁾	126	-13.8	30.8	-7.0	-2.1	13.1
Services, total	933	-14.0	3.5	16.3	4.6	2.5
- Sea transport	561	-5.5	7.5	5.8	1.3	1.8
- Other services	307	-12.7	-1.0	20.1	10.0	4.2
Total	1,983	-6.1	7.7	10.8	5.4	3.4
Imports						
Goods, total	989	0.7	10.7	1.2	-2.4	4.1
- Agricultural goods etc.	113	-4.1	6.3	3.9	-4.5	5.0
- Industrial goods (excl. ships etc.)	614	3.7	12.5	1.3	-3.2	6.6
- Other goods ²⁾	262	-4.9	7.0	-0.5	0.3	-3.5
Services, total	680	-7.8	6.0	14.9	5.6	1.1
Total	1,668	-2.8	8.8	6.5	0.9	2.8
Memo						
		Nominal growth rate, per cent				
Export of basic goods ³⁾	961	0.8	9.5	15.5	12.2	5.3
Export prices						
		Change, per cent				
Goods, total	-	-1.5	2.7	10.6	2.9	1.9
Services, total	-	3.9	18.8	31.3	-18.3	1.7
Total	-	0.5	8.7	19.5	-7.0	1.8
Import prices						
Goods, total	-	-4.2	8.7	20.2	-1.5	2.2
Services, total	-	0.0	6.9	15.2	4.9	1.6
Total	-	-2.6	8.0	18.1	1.2	1.9

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 excluding energy, ships and airplanes.

Source: Statistics Denmark and own calculations.

Table B.10 Private consumption

	2022	2020	2021	2022	2023	2024
	DKK bn.	Real growth rate, per cent				
Total consumption	1,225	-1.4	5.5	-1.4	0.6	1.5
Retail trade	411	6.3	8.1	-3.3	-3.4	2.1
- Food, drinks and tobacco	186	4.1	6.1	-6.5	-2.1	2.2
- Other goods	224	8.0	9.7	-0.6	-4.5	2.0
Purchase of vehicles	44	1.0	0.2	-18.1	21.1	0.5
Electricity, fuels and gas	76	-1.7	9.3	-8.2	-1.0	1.5
Gasoline and similar	33	-8.9	3.3	-0.4	5.5	-0.2
Housing	268	1.4	1.1	1.7	1.0	0.9
Other services	418	-12.5	4.8	8.5	1.2	0.9
Tourist expenditures	40	-47.2	26.1	18.6	20.0	2.0

Source: Statistics Denmark and own calculations.

Table B.11 Net lending by sectors

	2020	2021	2022	2023	2024
DKK bn.					
Private sector, total	178	130	289	216	263
- Households	29	-27	35	62	106
- Corporations	150	157	254	154	157
- Non-financial corporations	113	106	188	97	119
- Financial corporations	37	52	66	57	38
General government	9	103	97	56	29
Total	187	233	387	273	292

Note: Net lending of general government corresponds to the general government budget balance. The total (except for the 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)

	2022	2020	2021	2022	2023	2024
	Share, per cent	Real growth rate, per cent				
Total GVA	100	-2.8	6.9	3.6	1.4	1.6
Public sector	18	-4.4	3.3	1.1	0.4	1.1
Private sector	82	-2.4	7.9	4.2	1.6	1.7
Private sector excl. mining and quarrying	81	-2.2	7.9	4.2	1.8	1.0
Non-farm private sector ¹⁾	65	-2.6	9.1	4.2	2.2	1.1

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

Table B.13 Hourly productivity in selected industries

	Avg. 1998-2022	2020	2021	2022	2023	2024
Real growth rate, per cent						
Total	1.0	0.1	0.8	-0.5	1.7	1.8
Public sector	0.3	-2.9	-1.5	-0.5	0.4	0.4
Private sector	1.2	1.1	1.3	-0.8	2.0	2.2
Private sector excl. mining and quarrying	1.4	1.3	1.3	-0.8	2.1	1.6
Non-farm private sector ¹⁾	1.3	1.2	2.3	-1.0	2.5	1.6

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

Table B.14 Contributions to growth in households' real disposable income¹⁾

	2020	2021	2022	2023	2024
Real growth rate, per cent					
Disposable income ²⁾	0.0	0.5	2.5	-0.7	2.9
Contribution, percentage points					
Compensation of employees ³⁾	1.2	3.7	-0.4	-0.2	1.9
Social benefits	1.7	-0.5	-2.3	0.2	0.3
Income taxes	-2.4	-2.1	1.8	0.3	0.6
Net interest income	-0.7	0.7	0.1	-0.4	1.2
Dividend etc. ⁴⁾	-0.9	0.2	1.0	-0.8	-0.6
Pension contribution	0.6	-0.7	2.5	-1.4	-0.6
Payment from pension schemes ⁵⁾	0.0	-0.6	0.3	0.4	-0.1
Others ⁶⁾	0.5	-0.2	-0.4	1.3	0.2

1) The household sector in the Economic Survey includes Non-Profit Institutions Serving Households (NPISH).

2) Taxation on payments of frozen holiday funds is subtracted in the calculation of disposable income.

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 the self-employed.

Source: Statistics Denmark and own calculations.

Table B.15 Households' net lending¹⁾

	2020	2021	2022	2023	2024
DKK bn.					
Disposable gross income ²⁾	1,141	1,170	1,289	1,329	1,408
Private consumption	1,074	1,156	1,225	1,279	1,337
Gross investment ³⁾	116	139	155	144	145
Net capital transfers ⁴⁾	4	-2	8	10	13
Direct net lending	-45	-127	-83	-84	-61
Adjustment for the change in pension entitlements ⁵⁾	74	99	118	146	167
Net lending⁶⁾	29	-27	35	62	106
Per cent of disposable gross income					
Direct net lending	-4.0	-10.8	-6.4	-6.3	-4.4
Net lending	2.5	-2.3	2.7	4.7	7.5

- 1) The household sector in the Economic Survey includes Non-Profit Institutions Serving Households (NPISH).
2) Taxation on payments of frozen holiday funds is subtracted in the calculation of disposable income.
3) Households' gross investments include investments in owner-occupied housing and investments in buildings and materials by sole proprietors.
4) Net capital transfers in 2022 include property taxes refunded to owner-occupied property owners, funds for specific challenges as a result of covid-19 and further stimulants as well as reimbursement of contributions to the voluntary early retirement scheme.
5) Net payments to and returns (excl. tax on pension yield) on household capital in life insurance companies and pension funds.
6) Households' (net) acquisition of financial assets (incl. shares) in other sectors.

Source: Statistics Denmark and own calculations.

Table B.16 Real estate market and housing construction

	2020	2021	2022	2023	2024
Per cent					
Change in the price of traded single-family houses ¹⁾	4.8	10.5	0.5	-4.5	1.4
Housing gross investment (real growth)	9.1	10.0	-8.5	-12.9	-2.1

- 1) The change is 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

	2020	2021	2022	2023	2024
Labour wage ratio, per cent					
Private sector	59.2	56.5	53.5	57.1	57.4
The entire economy	64.2	61.5	58.6	61.6	62.0
Wage increase, per cent					
Private sector					
- Hourly earnings (excl. nuisance bonus)	1.9	2.9	4.0	4.5	5.4
Public sector					
- Hourly earnings (excl. nuisance bonus)	2.5	1.2	2.4	-	-
- Budgetary impact	2.5	1.3	1.9	2.4	4.1
Wage adjustment rate, per cent ¹⁾	2.0	2.0	1.2	2.7	3.2

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 in 2020-2022 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 (reguleringsordningen) but excluding any residual increases. The hourly wage increases for the private and public sectors are not comparable.

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

Table B.18 Price developments and explanatory factors

	2020	2021	2022	2023	2024
Change, per cent					
Net price index	0.4	1.5	7.7	5.7	2.6
Tariffs and housing benefits, contribution	0.0	0.5	0.0	-1.9	0.4
Consumer price index	0.4	1.9	7.7	3.8	3.0

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

	2020	2021	2022	2023	2024
DKK bn.					
Public consumption	574.2	612.2	616.7	644.9	682.4
Income transfers ¹⁾	385.8	387.7	387.5	404.8	421.7
Investments	84.4	84.2	88.8	95.1	98.9
Interest expenditures	12.8	14.1	20.4	16.1	15.8
Subsidies	75.4	63.3	39.9	37.0	37.9
Other expenditures ²⁾	85.4	84.8	90.1	92.5	92.0
Total expenditure³⁾	1,218.0	1,246.3	1,243.4	1,290.4	1,348.6
Personal income taxes, etc. ⁴⁾	510.9	544.0	571.0	586.1	593.6
Labour market contributions	106.3	112.4	116.9	121.5	127.0
Pension yield taxation	48.3	63.8	11.5	9.0	9.3
Corporate taxes	67.7	100.8	89.2	85.3	86.7
VAT	231.6	251.2	264.7	269.6	281.0
Other duties	142.4	147.5	145.0	137.1	137.8
Other taxes ⁵⁾	4.0	2.8	1.2	1.0	1.0
Interest revenues	20.3	23.9	29.6	37.3	42.8
Other revenues ⁶⁾	98.4	107.1	116.2	104.4	103.3
Tariffs etc. to the EU	-3.1	-3.7	-4.6	-4.4	-4.7
Total revenue⁷⁾	1,226.8	1,349.8	1,340.8	1,346.9	1,377.8
General government budget balance	8.8	103.5	97.4	56.5	29.2
Net interest expenditure	-7.5	-9.8	-9.1	-21.2	-27.0
General government primary balance ⁸⁾	1.3	93.7	88.3	35.3	3.5

- 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

DKK bn.	2020	2021	2022	2023	2024
Indirect taxes	371.0	395.0	405.1	402.3	414.0
- VAT	231.6	251.2	264.7	269.6	281.0
- Registration tax	18.7	16.4	11.5	11.4	10.1
- Excise duties	68.8	71.7	70.3	60.5	68.6
- Energy (incl. PSO)	37.3	37.6	38.4	29.3	37.0
- Environmental	3.5	3.7	3.7	3.7	3.8
- Tobacco and spirits etc.	12.6	13.2	11.3	11.5	11.6
- Others	15.4	17.1	16.8	16.0	16.2
- Property taxes	31.6	32.4	33.1	33.1	26.4
- Motor vehicle tax paid by businesses	3.9	4.1	4.1	4.1	4.2
- Other indirect taxes	16.3	19.3	21.4	23.5	23.8
Direct taxes	729.1	815.6	781.2	796.5	811.2
- Withholding taxes ¹⁾	488.8	522.1	547.7	565.0	572.3
- State tax	172.7	182.3	187.2	194.4	203.5
- Bottom-bracket tax	151.6	159.9	163.6	170.2	177.3
- Top-bracket tax	18.8	20.5	21.1	21.5	23.4
- Health contributions	0.0	0.0	0.0	0.0	0.0
- Limited tax liability	2.3	2.4	2.5	2.7	2.9
- Total municipal tax	263.0	277.9	285.7	295.4	308.1
- Property value tax	15.1	14.2	14.4	14.4	14.2
- Other withholding taxes ²⁾	38.1	47.7	60.4	60.8	46.5
- Pension yield tax	48.3	63.8	11.5	9.0	9.3
- Corporate tax	67.7	100.8	89.2	85.3	86.7
- Other personal taxes	8.3	8.1	8.7	8.3	8.4
- Media license	2.7	1.2	0.0	0.0	0.0
- Motor vehicle tax paid by households	7.2	7.2	7.2	7.3	7.5
- Labour market contributions	106.3	112.4	116.9	121.5	127.0
Social security contributions ³⁾	1.4	1.5	1.2	1.0	1.0
Capital taxes	6.7	6.6	7.4	5.4	5.4
Customs and import duties (collected by the EU)	3.1	3.7	4.6	4.4	4.7
Total taxes	1,111.2	1,222.5	1,199.6	1,209.7	1,236.4
GDP	2,320.9	2,550.6	2,831.6	2,789.3	2,909.2
Total taxes, share of GDP	47.9	47.9	42.4	43.4	42.5

1) For 2020-2022, the distribution of withholding taxes to the state and municipalities is from Statistics Denmark. For 2023-2024, 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.

Tabel B.21 Development in the tax base for municipalities

	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
	DKK bn.					Per cent				
May 2020	997.6	1,042.7	-	-	-	-1.1	4.5	-	-	-
Aug. 2020	1,054.6	1,044.9	-	-	-	4.3	-0.9	-	-	-
Dec. 2020	1,063.6	1,070.7	1,087.2	-	-	5.6	0.7	1.5	-	-
May 2021	1,060.5	1,070.3	1,085.6	-	-	5.3	0.9	1.4	-	-
Aug. 2021	1,058.3	1,075.5	1,081.7	-	-	5.1	1.6	0.6	-	-
Dec. 2021	1,064.4	1,094.1	1,104.2	1,153.8	-	5.7	2.8	0.9	4.5	-
May 2022	1,064.4	1,102.1	1,105.9	1,148.2	-	5.7	3.5	0.3	3.8	-
Aug. 2022	1,064.4	1,136.4	1,122.8	1,148.8	-	5.7	6.8	-1.2	2.3	-
Mar. 2023	1,064.4	1,132.9	1,154.2	1,185.7	1,233.2	5.7	6.4	1.9	2.7	4.0
May 2023	1,064.4	1,132.9	1,160.9	1,193.6	1,230.1	5.7	6.4	2.5	2.8	3.1
Aug. 2023	1,064.4	1,132.9	1,140.0	1,195.7	1,249.2	5.7	6.4	0.6	4.9	4.5

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

Tabel B.22 Income transfers

	2020	2021	2022	2023	2024
DKK bn.					
Unemployment benefits (excl. activation)	21.2	17.7	11.7	12.6	14.6
Cash benefits ¹⁾ (excl. activation)	26.4	26.9	27.8	31.3	32.0
Vacation allowance	0.7	0.6	0.5	0.3	0.4
Anticipatory pensions ²⁾	44.1	46.3	46.6	49.0	52.1
Resource rehabilitation allowance	6.3	5.8	6.6	6.7	6.4
Early retirement benefit	8.5	8.9	7.8	5.7	4.4
Rehabilitation benefit	0.6	0.5	0.4	0.3	0.3
Sickness benefit	14.1	16.2	16.5	14.6	15.5
Maternity pay	12.0	12.1	12.0	12.6	12.0
Rent benefit	15.4	15.5	15.6	16.2	16.9
Child and youth benefit	14.8	14.9	14.9	15.9	16.3
Other transfers ³⁾	24.6	21.8	24.3	25.2	23.4
Student grants (SU)	20.9	21.0	20.0	20.8	21.4
Public pension scheme ⁴⁾	144.6	146.2	145.2	154.2	164.9
Other pension schemes ⁵⁾	31.5	33.5	37.5	39.2	40.9
Total⁶⁾	385.8	387.7	387.5	404.8	421.7
Total, excl. public and other pensions	209.7	208.1	204.8	211.4	215.9
Total, excl. education grants, public pensions and other pensions	188.8	187.1	184.8	190.5	194.5

Note: The expenditures to income transfers is not directly equivalent to the number of benefits recipients in table B.6.

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.

Tabel B.23 Key figures estimated at different times

	Dec. 2021	May 2022	Aug. 2022	Mar. 2023	May 2023	Aug. 2023
2021						
GDP (real growth rate, per cent)	3.9	4.7	4.9	4.9	4.9	6.8
Gross unemployment (1,000 persons)	107	106	106	106	106	106
Consumer prices (change, per cent)	1.8	1.9	1.9	1.9	1.9	1.9
Balance of payments (DKK bn.) ¹⁾	181	206	219	226	226	226
Actual budget balance (DKK bn.)	-5	59	65	91	91	103
2022						
GDP (real growth rate, per cent)	2.8	3.4	2.8	3.6	3.8	2.7
Gross unemployment (1,000 persons)	78	86	78	76	76	76
Consumer prices (change, per cent)	2.2	5.2	7.3	7.7	7.7	7.7
Balance of payments (DKK bn.) ¹⁾	186	170	231	371	367	383
Actual budget balance (DKK bn.)	25	17	32	82	93	97
2023						
GDP (real growth rate, per cent)	2.1	1.9	0.8	0.2	0.6	1.2
Gross unemployment (1,000 persons)	77	87	93	93	91	85
Consumer prices (change, per cent)	1.8	1.8	3.3	3.9	4.3	3.8
Balance of payments (DKK bn.) ¹⁾	174	160	208	269	232	266
Actual budget balance (DKK bn.)	20	5	22	45	51	56
2024						
GDP (real growth rate, per cent)	-	-	-	1.5	1.4	1.4
Gross unemployment (1,000 persons)	-	-	-	97	97	94
Consumer prices (change, per cent)	-	-	-	2.8	3.0	3.0
Balance of payments (DKK bn.) ¹⁾	-	-	-	264	243	287
Actual budget balance (DKK bn.)	-	-	-	24	16	29

1) Taxable and non-taxable benefits incl. the integration benefit.
Source: Statistics Denmark and own calculations.